FACULTY PERCEPTIONS OF COOPERATIVE LEARNING AND TRADITIONAL DISCUSSION STRATEGIES IN ONLINE COURSES

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ABSTRACT

Due to the recent developments in technology, distance learning and education questions regarding the best teaching methods for the virtual classroom have emerged. Thus, it becomes increasingly necessary to examine how these methods translate into the virtual classroom. This qualitative case study examined how instructors of online courses perceived the effectiveness of proven traditional teaching methods as well as cooperative learning strategies in the virtual classroom. The five selected faculty members, all of whom held terminal degrees, were selected through purposeful, convenient sampling as well as snowball sampling, or chain sampling. Findings revealed that although all five informants had been working in online learning contexts with their students for two years and more, two of the informants still had not adapted in their own understanding about how to maximize the online learning context and were unable to apply their understanding of traditional instruction to the context of online learning. The two informants who were younger and less experienced than others had adapted well in implementing cooperative learning to maximize online learning. Finally, one informant was able to take her instruction to a more complex level and became the facilitator of learning through employing extensive use of student facilitators.

Keywords: **Cooperative learning, online learning, discussion board, case study, learning context.**

INTRODUCTION

The development of knowledge as a function of education is dependent, in many respects, on the teaching method used to communicate, integrate, utilize and re-enforce that knowledge.

Professors, educators, and researchers have all touted certain teaching methods to be the most effective in terms of knowledge retention.

Many of these "best methods" are considered staple methods that have been embraced by the academic community over the years. These methods are taught to all educators and their inclusion within the basic coursework is considered necessary in order for students to be successful. Some of these methods utilize and encourage more individualistic and competitive approaches to learning, whereas, others focus on more cooperative, group thinking approaches.

Due to the recent developments in technology, distance learning and education over the past two decades, questions regarding the best teaching methods for the virtual classroom have emerged amongst faculty members teaching online courses. While traditional individualistic methods have long been seen as the most effective methods for knowledge retention in brick and mortar classrooms, developing research has seen a shift in this trend. Cooperative learning has been demonstrated to yield better test scores, allow for more focus to be given to the task at hand and lead to better long-term knowledge retention (Bard, 1996; Johnson & Johnson, 1986).

Cooperative learning can best be defined as a pedagogical method by which learners are able to help themselves learn through the process of explaining the subject matter to other learners and by learning from others (Riley & Anderson, 2006). The model developed for cooperative learning is comprised of five essential elements including: positive interdependence, individual accountability, face-to-face promoting interaction, social skills and group processing (Kupczynski, Mundy, Goswami, & Meling, in press).

Additionally, cooperative learning is considered to be a form or "active learning." Active learning has been known to facilitate learning by allowing students to teach their peers, which in turn reinforces the knowledge being taught (Riley & Anderson, 2006). Through cooperative learning, students are able to engage in "deep learning" in which students engage in reshaping concepts and discovering new connections through the use of critical thinking skills (Riley & Anderson, 2006). Bard's (1996) study suggests that students who engage in cooperative learning tend to be more likely to achieve deep learning, higher critical ability and improved problem solving skills compared to those involved in self-paced, independent study that did not incorperate cooperative learning methods. As teaching methods intended for use in traditional brick-and-mortar classrooms continue to evolve and create shifts in best practice attitudes, it becomes increasingly necessary to examine how these methods translate into the virtual classroom. Furthermore, an examination of how instructors of online courses perceive the effectiveness of proven traditional teaching methods in the virtual classroom is vital.

The current movement toward distance learning within the academic sector has prompted research which has uncovered an increase in the use of cooperative learning within the realm of distance learning. Furthermore, there has been much research on the benefits of cooperative learning, both in traditional and online classrooms. This study will examine faculty perceptions of the use of cooperative learning in distance education, as well as, determine why faculty members hold those perceptions. While some research has been conducted in the area of cooperative learning in distance education, little has been conducted on faculty perceptions of the integration of the two.

The results of this study will assist instructors, who participate in distance learning, as they re-assess current teaching models and analyze new methods in an effort to improve learning and teaching practices in the virtual classroom.

LITERATURE REVIEW

A basic feature of cooperative learning at any stage and in any setting is collaboration. Successful collaboration in online courses is directly related to the types of tools used to facilitate and achieve collaboration (Havard, Du & Xu, 2008). Furthermore, the timing involved in when those tools are introduced and how they are utilized also play a very important role in the achievement of successful collaboration (Havard, Du & Xu, 2008). Discussion boards as well as the associated discussion board tool box have been shown to be effective in supporting and enhancing collaboration as well as encouraging cooperative learning in online coursework (Cox & Cox, 2008). Students enrolled in online classes benefit from the use of discussion boards due to the added dimension of collaboration offered by discussion boards in the traditionally isolated asynchronous learning network environment (Paulsen, 2008). Discussion boards also offer a space within the course that may be used to plan future activities or group activities as well as a place where students may interact with other students and the instructor (So, 2009). Furthermore, discussion boards also promote reflective discussion responses (Prestera & Moller, 2001).

Discussion boards also play a critical role in the learning process within the online course environment by creating a space where students can receive feedback from the instructor and their peers (Ku, Lohr & Cheng, 2004). Student interactions and collaboration can be further facilitated through the use of threaded discussions (Prestera & Moller, 2001).

An important feature of cooperative learning is small group discussion. Such discussions have been shown to have higher levels of peer-to-peer interaction, as well as more student participation. In the field of online education, small group discussions have resulted in a richer understanding of the coursework as demonstrated in student discussion posts (Bliss & Lawrence, 2009).

Further research in the field of computer supported collaborative learning has demonstrated that student grades and test scores are positively correlated with active participation in small group discussions (Schellens, van Keer, Valcke & De Wever, 2007).

The benefits of collaborative learning are well supported by education literature and online education, due to its increased prominence and flexibility, has become a force that will change the field of education. However, the benefits of both collaborative learning and online education can disappear in the face of unproductive communication and tasks (Ku, Lohr & Cheng, 2004). Successful collaboration in online courses is directly related to the types of tools used to facilitate and achieve collaboration (Havard, Du & Xu, 2008).

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Bliss and Lawrence (2009) have argued that the keys to the successful integration of collaborative learning in online education are relevant posts that lead to deeper discussions of course material.

However, such drawbacks as off-topic posts, delayed feedback, low participation and negative feelings towards group work or group members can easily develop (Ciges, 2001; Bliss & Lawrence, 2009).

Therefore, the online instructor, as a facilitator, as well as the clarity of the instructions and expectations become very important for the successful implementation of collaborative learning strategies within the virtual classroom (Prestera & Moller, 2001; Hutchinson, 2007).

The most important factor for success in online collaborative learning is the instructor and the design of the course as created by that instructor (Hutchinson, 2007). It has been suggested that the instructor must know the course material and the course itself well enough to act as a guide who is able to lead students through personal experience. The instructor, as a professional, also plays an important role in evaluating classroom curriculum development and strategy.

METHODOLOGY AND RESEARCH DESIGN

This study employed qualitative methods with the researcher(s) as the instrument(s) (Lincoln & Guba, 1985; Patton, 1990). Data gathering by the researchers began at the time of the first online interaction and continued throughout the observation period. Furthermore, the emergence of some unanticipated data was noted and is discussed in subsequent sections. The emergence of such data in this study was not unexpected as its existence aligns with Stake's (1995) observations that qualitative research is a process where "issues emerge, grow, and die…. the course of the study cannot be charted in advance" (pp. 21-22).

Data Gathering

This study was conducted by surveying faculty regarding their views on the use of cooperative learning within online contexts. Additionally, some data was also gleaned through prolonged engagement by the researcher with the respondent (Erlandson, Harris, Skipper, & Allen, 1993) by various means including: face to face interactions, online exchanges, emails and Skype mediated communications throughout the observation period. This prolonged engagement also supported the trustworthiness of the qualitative data (Lincoln & Guba, 1985).

The principal sources of data included ongoing interactions with five faculty members throughout the 10-week observation period as well as formal interviews at the end of the data collection period. It should be noted that at the time of the formal interviews, the researcher and the respondent were familiar with each other and considered themselves to be professional colleagues. A semi-structured interview approach (Bernard, 2002), was utilized. The survey instrument was designed to allow for the respondent to elaborate on responses and was composed of a list of five questions (Figure : 1).

Interview Protocol	
Q1	What is your impression of student social interaction in cooperative learning discussions?
Q2	What is your impression of student social interaction in traditional learning discussions?
Q3	Which discussion method (cooperative learning or traditional) do you feel was more successful for student comprehension of content? Why?
Q4	Which discussion method do you believe offered more opportunity for student-to-instructor interaction and in what ways?
Q5	Which discussion method do you believe offered more opportunity for student-to-content interaction and in what ways?

Figure: 1

The interview questions were designed so as not to restrict, but rather encourage interviewees' responses. Bernard's (2002) approach which states, "the idea is to get people to open up and let them express themselves in their own terms, at their own pace" (p. 206) was followed. Additionally, the expectation is that with a semi-structured interview technique some control exists based on the questions, but also some opportunities are left for emergent data and new leads.

Furthermore, Bernard's (2002) advice to "get people onto a topic of interest and get out of the way. Let the informant provide information that he or she thinks is important" (p. 209) was followed as a guideline for interviewer behavior.

Research Participants

The participants for the study were selected through purposeful, convenient sampling (Erlandson, et al., 1993) as well as snowball sampling, or chain sampling, which occurs when: a group of cases that are selected by asking one person to recommend someone suitable as a case of the phenomenon of interest, then recommends another person who is a suitable case or who knows of potential cases; the process continues until the desired sample size in achieved. (Gall, Borg, & Gall, 1996, p. 770) All of the selected participants agreed to participate and provided the required informed written consent.

Table: 1 provides demographic data for the five study participants with whom the interactions and the interviews occurred. All five participants hold terminal degrees.

Table: 1
Participant Demographics

Informant	Age	M/F	Ethnicity	Yrs Exp
1	<46	F	W	5+
2	>52	F	W	5+
3	>52	F	H	5+
4	<41	F	W	4
5	<36	M	H	2

W = White; H = Hispanic

Data Analysis

All interview responses were entered into a Microsoft Excel spreadsheet and initially coded with regard to whether the responses supported the implementation of cooperative learning in online learning or favored a more traditional approach for instruction within the context of online learning. Responses were also coded by question, respondent age, ethnicity, and gender to discern any potential patterns within the data.

This basic format served as a starting point for organizing each respondent's interviews and facilitated the more significant process of seeking patterns and analyzing for emerging themes (Reissman, 1993).

RESULTS AND DISCUSSION

The sampling method used in this study was chosen so as to guarantee participants who understand and participate in distance learning. It was expected that participants would likely be on the cutting edge and favor complex instructional strategies such as cooperative learning within online contexts. This early observation proved to be somewhat misleading. The articulated instructional preferences, with regard to cooperative learning in online contexts were mixed.

On one hand, as somewhat anticipated, two faculty informants, one male and one female, both of whom were under the age of 46 with <4 years of experience, tended to favor cooperative learning within their online teaching and learning contexts. However, two other faculty members interviewed, both female, one white and one Hispanic, both over the age of 52, generally favored more traditional instruction in their online classes. The final informant, a white female in the mid age range, seemed to view the benefits of both traditional and CL in online teaching and learning settings.

Furthermore, it was noted that respondents may have had difficulty understanding the nature of the questions being asked during the interview. Of particular importance to this study respondents had difficulty distinguishing between traditional and cooperative learning in online instruction rather than being asked about their perspectives between traditional and cooperative learning in general in both the brick and mortar classroom and the virtual one. For example, one respondent said, "I believe the traditional method provides students more social interaction in their learning simply because the face to face interaction provides body language, verbal and non-verbal cues, and a setting which is more conducive to social interaction." This "confusion" in how the interviewees responded revealed a real struggle in "seeing" a distinction between traditional and cooperative learning within online contexts and seemed to almost not understand the question in spite checking (Erlandson, et al., 1993) with the informants during the interview to attempt to ensure their responses aligned to the interview question. Also, informants had difficulty thinking in terms of more traditional instruction in an online context in their responses. For example, one faculty informant said, "In a face-to-face setting, the social interaction could be very much likened to a conversation that one is having. There is an immediate response." Another said, "I believe the traditional method offers more opportunities to interact (teacher-to-student) in a classroom setting. Students are able to carry on a continuous conversation and reach a point of consensus or disagreement."

Faculty Who Favored Traditional Instruction

One theme that emerged strongly across the respondent data was that the responses from the informants who stated that their students favored traditional instruction, were possibly, exhibiting their own preferences in their responses. The juxtaposition of researcher and researched, perhaps due to the prolonged exposure, yielded from two of the informants, situated responses (Bloom, 1998).

That is, the informants knew of the researcher's expertise and background in online teaching and learning contexts, and therefore responded in ways that would be perceived as "correct" or favorable. However, the visual representation of their responses, which were uniformly and notably briefer than those respondents who favored cooperative learning, is worthy of note in the interpretation of the data.

An examination of the printed transcriptions has been considered an accepted step in qualitative analysis as, "features of the discourse often 'jump out'" (Reissman, 1993, p.57). Moreover, use of the word "student" or pronouns referring to students were limited by the short, and almost controlled responses from those respondents who favored traditional instructions styles. Analysis of these shorter, controlled responses has indicated that the respondents "knew" they should portray their responses as being about cooperative learning, yet they were ultimately responding from their own traditional instruction preferences.

A second theme revealed that those who favored traditional instruction in an online context, seemed tied to doctoral rigor in their coursework tapping into student concerns with regard to grading. For example, one informant shared that it was important for doctoral students to "not rely on others for completing their assignments….or, lose control of their grade and depending on other students to achieve that top grade." Once again, informants deferred to student reasons in support of their own preference for traditional instruction. Student convenience emerged as another strong theme. For example, one faculty informant noted that, "Online, a student may not say everything they wish to say simply because they don't want to script out all of their thoughts and interactions." Additionally, another faculty member perceived that, "the students were able to finish the assignments on their own schedule and not spend the extra time trying to locate group members and work with their schedules" as would be required if cooperative learning was required by the instructor. This notion of student convenience also aligned with traditional teacher instruction and in actuality, instructor preference for traditional instruction.

Faculty Who Favored Cooperative Learning

Three of the five participants demonstrated strong, genuine support for cooperative learning in online learning contexts. Each of these three respondents was <46 years old, at the time of the study, with one white female having more than five years of experience and the other two informants, one white female and one Hispanic male having four or less years of experience. Four themes emerged across their responses under the overarching theme of improved teaching and learning. These four themes included:

- **high interactivity amongst learners;**
- **improved student engagement;**
- **opportunities to self-differentiate to improve self learning; and,**
- **facilitation of a supportive environment.**

One respondent said: Definitely the CL (is a preference-sic) as not only did I respond to each student's question(s), but I was also able to respond to each group's question(s). Students made more of an effort to contact me via phone or text messaging compared to an e-mail for an answer to a non-CL discussion. Students were more involved in the discussions and thus believed, and rightfully so, that I would be, too. Based on this participant's responses, the *interactivity* was iterative and recursive and was so much so that initial interactivity stimulated a further exchange of ideas and communication. Another respondent noted that the "students get very excited and interactive with each other in cooperative learning discussions. They respond to each other and myself (sic) in an engaging way that stimulates learning for all."

This response demonstrates how, ultimately, the interactivity leads to student engagement which in turn leads to improved overall teaching and learning. In terms of interactivity and student engagement, another participant shared that "students learn from each other….and are fully engaged in the peer-to-peer chat and discussions."

Another respondent noted that the use of cooperative learning "stimulates student interaction and makes learning their own. They take charge of their learning." Having students assume responsibility, *differentiate* their own learning and become self-directed learners is the ultimate goal of formal teaching and learning. One informant in particular highlighted and summarized the ability of cooperative learning in online contexts to facilitate a supportive environment. She said:

> ***There was a large amount of support and encouragement for students by students in the CL discussions. Students who would share a challenge, either personal or professional, would receive empathy and encouragement. Additionally, students were very willing to support each other in the discussion through the positive reinforcement of good and forward thinking ideas.***

In the final section below, this same informant, who evidenced master teaching, took the conversation to the next level as reflective of the rigor in her online coursework.

Faculty Who Favored a Balance of Traditional Instruction and Cooperative Learning

The master teacher referenced in the above discussion reflected both depth of understanding of the potential of cooperative learning in online contexts as well as evidence of implementation of that expertise in their online coursework. The respondent was able to delineate the advantages of both traditional and cooperative learning modes. Saying:

> ***The traditional discussions still had the instructor as the center of the discussion for the most part. There was more direct interaction between student and instructor there. However, in the CL discussions, I did try and allow the facilitator to be the focus.***

For this master teacher, the social interaction piece was not the focus. For this instructor the focus was on engendering student facilitation of learning. The instructor noted:

> ***Very similar to the CL discussions, there was more emphasis placed on those who were leading the discussions in the CL teams. Often, students would say "good post" or "great questions" for the CL teams. Social interaction was about the same level.***

Not only did the responses reveal application of the benefits of both traditional and cooperative learning in online coursework, but the responses also revealed that the instructor was able to move from teacher centered and teacher led discussions along the continuum towards student driven and student led online learning. For example, the master teacher said:

> ***If the student was the facilitator I believe they had a deeper understanding of the content. However, if the student facilitator is taken out of the equation, I would say, in a review of posts, that the students had similar interactions with the content in both areas (traditional and cooperative learning). I did often notice if there was one article or chapter or topic that was important to a student it didn't matter if it was a CL or TL discussion.***

Common throughout these responses was indication of use of student facilitators which in effect took the cooperative learning to a more complex level. The instructor said of student facilitators in cooperative learning contexts that:

Students who were the lead discussant for the CL discussions may have gotten much more out of those particular sessions than traditional discussions. A student who not only has to read, but also has to formulate questions based on the reading as well as lead a discussion, would probably have a deeper understanding of the material and therefore, have a better understanding of the content.

CONCLUSION

The qualitative component of this study revealed some unexpected data. All five participants had been working in online learning contexts with their students for a range of years between two years through five years and more, at the time that this study was conducted. Yet, two of the respondents who had been teaching online for several years still really had not adapted in their own understanding about how to maximize the online learning context. These respondents were unable to discern and accurately respond to several of the interview questions as they were not really able to apply their understanding of traditional instruction to the context of online learning.

Two of the participants whom were younger and less experienced overall than others had adapted well in implementing cooperative learning to maximize online learning.

Finally, one respondent was able to take online instruction to a more complex level where the teacher became less of "a teacher" and more of the facilitator of learning through employing extensive use of student facilitators.

Future research indicated by this study would be to explore student perceptions from these online classes to determine whether the students' perceptions of the quality of the instruction they were receiving aligned with the presented data from the three instructors in this study for whom cooperative learning substantially improved student learning through improved engagement, increased interactivity, establishment of a supportive online learning environment, and the ultimate creation of a learning context whereby students may facilitate their own learning.

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REFERENCES

Bard, T. B. (1996). Cooperative activities in interactive distance learning. *Journal of Education for Library and Information Science, 37*(1), 2-10. Retrieved from http://www.jstor.org/stable/40324280.

Bernard, H. R. (2002). Qualitative data analysis I: Text analysis (pp.440-488). In H. R. Bernard, *Research methods of anthropology.* Walnut Creek, CA: Alta Mira Press.

Bloom, L.R. (1998). ***Under the sign of hope: Feminist methodology and narrative nterpretation.*** **Albany, NY: SUNY Press.**

Ciges, A. (2001). Online learning: New educational environments in order to respect cultural diversity through cooperative strategies. ***Intercultural Education*****, 12: 135-147.**

Cox, B. & Cox, B. (2008). Developing interpersonal and group dynamics through asynchronous threaded discussions: The use of discussion board in collaborative learning. ***Education*****, 4: 553-565.**

Erlandson, D., Harris, E, Skipper, B., Allen, S. (1993) ***Doing Naturalistic Inquiry.*** **Newberry Park, CA: Sage.**

Gall, M., Borg, W. & Gall, J. (1996) ***Educational research.*** **New York: Longman Publishers.**

Gee, J. P. (1985). The narrativization of experience in the oral style. ***Journal*** **of Education,** ***67*****(1), 9-35.**

Havard, B., Du, J., & Xu, J. (2008). Online collaborative learning and communication media. ***Journal of Interactive Learning Research*****,** ***19,*** **37-50. Retrieved from Education Research Complete database.**

Hutchinson, D. (2007). Teaching practices for effective cooperative learning in an online learning environment (OLE). ***Journal of Information Systems Education*****,** ***18,*** **357-367.**

Johnson, R. T., & Johnson, D. W. (1986). Action research: Cooperative learning in the science classroom. ***Science and Children*****,** ***24*****, 31-32.**

Ku, H., Lohr, L., & Cheng, Y. (2004). Collaborative learning experiences in online instructional design courses. ***Association for Educational Communications and Technology*****,** ***27*****, 513-521.**

Kupczynski, L., Mundy, M. A., Goswami, J., & Meling, V. (In press for July 2012). Cooperative learning in distance learning: A mixed methods study. ***International Journal of Instruction.***
Lincoln, Y.S. & Guba, E.G. (1985). ***Naturalistic inquiry.*** **Thousand Oaks, CA: Sage.**

Patton, M. Q., (2002) ***Qualitative evaluation and research methods.*** **3rd edition. Thousand Oaks, CA: Sage.**

Paulsen, M. (2008). Cooperative online education. ***Seminar.Net: Media, Technology & Life-Long Learning*****,** ***4*****, 1-20. Retrieved from Education Research Complete database.**

Prestera, G. E., & Moller, L. (2001). Exploiting opportunities for knowledge building in asynchronous distance learning environments. ***The Quarterly Review of Distance Education, 2,*** **93-104.**

Reissman, C. (1993). ***Narrative analysis.*** **Newbury Park, CA: Sage.**

Riley, W., & Anderson, P. (2006). Randomized study on the impact of cooperative learning: distance education in public health. ***The Quarterly Review of Distance Education*****,** ***7*****(2), 129-144.**

Schellens, T., Van Keer, H., Valcke, M., & De Wever, B. (2007). Learning in asynchronous discussion groups: A multilevel approach to study the influence of student, group and task characteristics. *Behaviour & Information Technology*, *26*(1), 55-71.

So, H. (2009). When groups decide to use asynchronous online discussions: Collaborative learning and social presence under a voluntary participation structure. *Journal of Computer Assisted Learning*, *25*, 143-160.

Stake, R. (1995). *The art of case study research.* Thousand Oaks, CA: Sage.