COLLABORATIVE LEARNING IN A VIRTUAL CLASSROOM: ITS STATUS IN THE CURRENT DIGITAL ERA

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ABSTRACT

The survey study was aimed at ascertaining the level of incorporation of collaborative strategies by Post Graduate (PG) students who offer course CGS (801.1); ICT and Research Methodology in the Faculty of Education, University of Port Harcourt. A sample size of one hundred (100) students drawn from two departments; Curriculum Studies and Educational Technology (CSET) and Educational Management (EDM) were used in the study. The instrument used for the study was a 4-point likerk-like scale with nine (9) items, validated by experts versed on collaborative learning. The reliability index of 0.67 and an acceptable mean of 2.50 were used in confirming compliance or no compliance to collaborative learning. Only one research question was used in the study. The grand mean and standard deviation of both departments were used in testing the one hypothesis that guided the study. A major finding has it that students see themselves as rivals and thus showed obvious deficiency in knowledge on the power of collaboration in attainment of learning outcome. Hence the study recommended non rivalry approach to learning among students, to boost interpersonal and social skills.

Keywords: Group, Clusters, jigsaw and round robin.

INTRODUCTION

The late 20th and earliest 21st centuries have witness the heavy presence of ICT facilities that should alter learning patterns just as learners and educators alike have to acquire, develop and practice certain skills and knowledge in order to meet up with the 21st century education goals and objectives and become relevant in the changing technological based society. Among these skills is the ability to work together in team to achieve certain goals. Australian Research Alliance for Children and Youth (ARACY) (2013) stated that collaborative practice is now central to the way we work, deliver services and produce innovations. This implies that collaborative approach of dealing with issues of great concern has now become a 21st century development in education system and even in the larger society leading to a change of focus from individual to group or community efforts to achieving certain goals.

Collaborative learning is very essential in teaching and learning as it encourages learners' active engagement in the learning process when they are involved in searching, finding and evaluating information from a variety of sources such as peers, teachers and the wider society to increase their knowledge; thus becoming accountable and responsible for the successful achievement of their own learning outcome and that of others. As also noted by ARACY (2013) collaborative learning affords students enormous advantages not available from more traditional instruction because a group, whether it be the whole class or a learning group within the class, can accomplish meaningful learning and solve problems better than any individual can alone. Collaborative learning also has the potentials, as viewed by Williams (2009) cited in Srinivas (2014), to increase learners' interest, motivation, retention and achievement in learning activities; encourage student responsibility for learning; promote

innovation in teaching and classroom techniques; address learning style differences among students; and develop interpersonal and social skills among learners, etc.

Collaborative learning is based on the idea that learning is a naturally social act in which the participants talk among themselves, (Srinivas, 2014). It therefore means that learners need social environment where they will have the opportunity to interact, communicate, share and construct knowledge with others for effective learning to take place. Srinivas further pointed out that in the collaborative learning environment, the learners are challenged both socially and emotionally as they listen to different perspectives, and are required to articulate and defend their ideas. This leaves a huge responsibility on educators, being great agents of transformation in the education system, to be able to serve as learning facilitators and create an enabling environment that will support collaboration among learners and 21st century teaching and learning that will help students develop collaborative skills and take responsibility for their learning.

Collaborative learning can be achieved in a virtual classroom using a number of strategies. Some of these techniques according to Supplemental Instruction (SI) (2014) include group discussion, assigned discussion leader, clusters, group survey, Turn To Your Partner and … (TTYP), write/pair/share, critical debates and round robin. Others include think/pair/share, jigsaw, three-step interview and numbered heads together (Supplemental Instruction (SI), 2014 & Srinivas, 2014). The commonality among these strategies is that topics, projects, assignments, etc, would be shared among the group members, with each member working toward success of the group and for the attainment of already set learning goals and objectives.

Moreover, being in the era of Information and Communication Technology (ICT) where technology simplifies virtually everything; even today's learners (who are being classified as digital natives and socially active) are seen to use this technology in its various formats in their everyday's life activities, both within and outside the classroom environment; adopting technological resources into teaching and learning can make collaborative learning activities easier. In addition, since it has been observed that today's learners are visually-oriented, highly networked, interactive and social, increasingly mobile and prefer active learning rather than passive learning, (The Center for Teaching and Learning, 2014), using collaborative learning approach in teaching and learning process can serve as a key to best practices in achieving greater academic performance in this generation's education platform.

A lot of studies have been conducted on collaborative learning. For instance, Wu and Chen (2014) conducted a study titled, a factor analysis on teamwork performance -an empirical study of inter-instituted collaboration and found out that knowledge-sharing created a positive effect on team performance. Gokhale (1995) also examined the effectiveness of individual learning versus collaborative learning in enhancing drill-and-practice skills and critical-thinking skills. The results revealed that students who participated in collaborative learning performed significantly better on the critical- thinking test than students who studied individually and both groups did equally well on the drill- and- practice test. Goddard, Goddard and Tschannen-Moran (2007) carried out a study to review the literature and empirically test the relationship between a theoretically driven measure of teacher collaboration for school improvement and student achievement using students and teachers from the elementary schools in a large urban school district located in the midwestern United States. Their results of HLM analyses indicated that fourth-grade students have higher achievement in mathematics and reading when they attend schools characterized by higher

levels of teacher collaboration for school improvement. Also, Alavi (1994) investigated whether the use of a group decision support system (GDSS) in a collaborative learning process enhances student learning and evaluation of classroom experiences and found out that GDSS-supported collaborative learning leads to higher levels of perceived skill development, self-reported learning, and evaluation of classroom experience in comparison with non-GDSS supported collaborative learning and the final test grades of the group of students who were exposed to GDSS-supported collaborative learning were significantly higher than those of the other group of students who participated in the experiment. Terenzini, Cabrera, Colbeck, Parente and Bjorklund (2001) examined the extent to which undergraduate engineering courses taught using active and collaborative learning methods differ from traditional lecture and discussion courses in their ability to promote the development of students' engineering design, problem-solving, communication, and group participation skills. Their results indicated that active or collaborative methods produce both statistically significant and substantially greater gains in student learning than those associated with more traditional instructional methods. The above cited studies on collaborative learning were done using elementary, secondary or undergraduate students. To the best of the researchers' knowledge, no study on collaborative learning has been carried out using Post Graduate (PG) students in the Faculty of Education, University of Port Harcourt. Thus, this study ascertained the level of incorporation of collaborative strategies by Post Graduate (PG) students in the Faculty of Education, University of Port Harcourt.

Statement of problem

Collaborative practice as one of the 21st century skills is supposed to be part and parcel of every classroom activity. Educators and learners that adopted this collaborative approach into the learning scenarios attest to its overwhelming significance on the academic performances of their students. However, the level of incorporation of collaborative strategies by Post Graduate (PG) students who offer an ICT based course in the Faculty of Education, University of Port Harcourt is not known. Do the students see themselves as peers or rivals? Do they share things in common or practice independent learning approach? These and others prompted the study.

Purpose of the study

The purpose of this study generally, is to determine the status of collaborative learning in a virtual classroom in the current digital era. Specifically, the study aimed to ascertain the extent students use collaborative strategies in a virtual classroom.

Research question

To what extent do students use collaborative strategies in a virtual classroom?

Research hypothesis

There is no significant difference between the mean values of students in CSET and those of EDM in their adoption of collaborative strategies.

METHODOLOGY

Design: The study was a survey design which afforded the representative sample of indicating their collaborative status.

Population: The population consists of all post graduate students of Curriculum Studies and Educational Technology (CSET) and Educational Management (Mgt). These students offer a general College of Graduate Course CGS (801.1), titled; ICT and Research Methodology that depends heavily on digital devices and tools which ordinarily should support collaboration.
Sample: A representative sample of the population was used in the study. One hundred (100) PG students evenly drawn from the two departments formed the sample size. This sample size was arrived at using a simple random sampling technique which gave every member of the population equal chance of being selected for the study.
Instrumentation: A four-point likert-like questionnaire made up of nine (9) items was the instrument used to conduct the study. The 4-point scale rated 4, 3, 2, 1 was rated strongly agree (SA); agree (A); Undecided (2); and strongly disagree (1), respectively. The 9-item instrument was validated by co-researchers versed in the tenets of collaborative learning. The reliability of the instrument was via the test-retest technique using the Richard-Kuderson forrmula which gave reliability co-efficient (r) of 0.67, very close to unity.
Data Analysis: Simple percentage (%) was used to express respondents' response to each item in the questionnaire. Also, the mean (x) value of each item was calculated from which the summation gave rise to the grand mean (x). A mean (x) of 2.50 was used for the purpose of this study to indicate confirmation to collaboration strategies. Also, the standard deviation (SD) of each item was calculated using scale values as scores (x). The grand SD is the sum of SD of each item as shown in tables 1 and 2.

RESULTS

The results of the study were presented in the tables below based on the research questions and hypothesis.
Research question: To what extent do students use collaborative strategies in a virtual classroom?

Table 1: CSET CGS' ICT and Research students

	Collaborative Strategies	(4)	(3)	(2)	(1)	x	$\bar{x}$
1	Group discussion is common	5(4)20, 10%	5(3)15, 10%	10(2)20, 20%	30(1)30, 30% SD=2.45	85	1.7
2	You have a discussion leader	4(4)16, 8%	6(3)18, 18%	9(2)18, 18%	31(1)31, 31% SD=2.45	83	1.66
3	The class is collapse to clusters	6(4)24, 12%	2(3)21, 14%	20(2)40, 40%	27(1)27, 27% SD=2.45	122	2.44
4	Class members are partners	20(4)80, 40%	15(3)45, 30%	7(2)14, 14%	8(1)8, 8% SD=2.45	147	2.94
5	Think-pair-share common	10(4)40, 20%	15(3)45, 30%	12(2)24, 24%	13(1)13, 13% SD=2.45	122	2.44
6	Topics are shared among you	7(4)28, 14%	10(3)30, 20%	13(2)26, 26%	20(1)20, 20% SD=2.45	104	2.08
7	You play interviewer-wee role	8(4)32, 16%	9(3)27, 18%	4(2)8, 8%	21(1)29, 29% SD=2.45	96	1.92
8	Class engage in critical debates	12(4)48, 24%	8(3)24, 16%	5(2)10, 10%	25(1)25, 25% SD=2.45	107	2.14
9	Members express their views on each topic	11(4)44, 22%	7(3)21, 14%	7(2)14, 14%	24(1)24, 24% SD=2.45	103	2.06
	Total ($\bar{x}$)				ΣSD= 22.04		($\bar{x}$)19.38

ΣSD = Sum of standard deviation

The table 1 above shows that PG students in the department of CSET, who offers CGS 801.1, have a grand mean (x) of 19.38. Their percentage (%) rating to each item and the items'

means (x) are shown in the table. However, apart from item number 3, with x (2.94), all the rest fall below the 2.50, the acceptable mean value. The standard deviation (SD) of each of the items is also indicated on the table. The total SD for the group using the ratings scale and covering the nine items gave a value of 22.04.

Table 2: Mgt-CGS' ICT and Research students

	Collaborative Strategies	SA (4)	A (3)	UD (2)	SD (1)	X	$\bar{x}$
1	Group discussion is common	4(4)16, 8%	6(3)18, 12%	10(2)20, 20%	30(1), 30% SD=2.45	84	1.68
2	You have a discussion leader	4(4)16, 8%	7(3)21, 14%	11(2)22, 22%	(1)28, 28% SD=2.45	87	1.74
3	The class is collapse to clusters	5(4)20, 10%	5(3)15, 15%	10(2)20, 20%	(1)30, 30% SD=2.45	85	1.7
4	Class members are partners	19(4)76, 38%	16(3)48, 32%	7(2)14, 14%	(1)8, 8% SD=2.45	146	2.92
5	Think-pair-share common	7(4)28, 14%	10(3)30, 20%	13(2)26, 26%	(1)20, 20% SD=2.45	104	2.08
6	Topics are shared among you	10(4)40, 20%	11(3)33, 22%	11(2)22, 22%	(1)18, 18% SD=2.45	113	2.26
7	You play interviewer-wee role	12(4)48, 24%	7(3)21, 14%	6(2)12, 12%	(1)25, 25% SD=2.45	86	1.72
8	Class engage in critical debates	9(4)36, 18%	8(3)24, 16%	16(2)32, 32%	(1)17, 17% SD=2.45	109	2.18
9	Members express their views on each topic	11(4)44, 22%	9(3)27, 18%	14(2)28, 28%	(1)16, 16% SD=2.45	115	2.3
	TOTAL				ΣSD=22.04	$\bar{\bar{x}}$	18.58

Table 2, shows that PG students in the department of Mgt who offer CGS 801.1 recorded a grand mean (x) of 18.58. Their percentage (%) rating to each of items and items mean (x) are also displayed in the table. On the other hand, apart from item number 4, with x (2.92), all the rest fall below 2.50 the acceptable mean value like table 1, the SD is the same value of 22.04, just as the same scale (x- value).

Hypothesis: There is no significant difference between the mean values of CSET and those of EDM in their use of collaborative learning strategies.

Table 3: Summary of value used in hypothesis

Departments	N	$\bar{x}$	SD	df	Sig	t-cal	t-table
CSET	50	19.38	22.04	99	0.05	0.44	1.98
MGT	50	18.58					

Decision: t-cal < t-tab

0.44 < 1.98

Ho Accepted

DISCUSSION OF FINDINGS

A major finding from the study is collaborative learning is not explored by students even in the presence of ICT facilities as they still see themselves as rivals. The traditional competitive and independent practices are still common among students even at this level of study. Group discussion, group leadership and collapsing class into clusters are obviously not the practice. So there is absence of team work, the same position is reported by Wu and Chen (2014) on factor analysis of team work performance. In the same pattern, there is low think-pair-share approach, sharing of topics among course mates just as members rarely assume the

interviewer-interviewee function. Critical debate is low, the same way they rarely express their views in each topic. Tables 1 and 2 and their contents are in variance with the power of collaboration as shown in the studies by Gokhale (1995) on the effectiveness of individual learning versus collaborative learning in enhancing drill-and-practice skills and critical thinking, the study on empirical test of relationship between theoretical driven measure of teacher collaboration Goddard, Goddard and Tschannen-Moran (2007), the use of a group support system (GDSS) in a collaborative learning process (Alavi, 1994).

Another major finding from the study as shown in table 3 is that there is no significant difference between the two groups in their preference for collaborative learning. The meaning is that their departments do not influence their collaborative learning preference over other options. The students' current status on collaborative strategies is in variance with the outcome of the studies of collaborative studies (Terenzini, Cabrera, Colbeck, Parente & Bjorklund, 2001; Goddard, Goddard and Tschannen-Moran, 2007 & Wu and Chen, 2014).

CONCLUSION

Brainstorming, delegating, leading and team building, amongst other features define collaboration and the presence of ICT is meant to promote this think-pair-share innovative learning strategy. The power of collaboration is yet to be realized among students in the achievement of the desired learning outcome, as it is indicated by the result of the study. All the same, because collaboration alongside critical thinking, creative thinking and communication as learning skills, and considering its numerous advantages deserved to be embraced by students of the present day digital age. To key into this, students must see themselves as peers, partners and not rivals in the true sense of the words.

RECOMMENDATIONS

Two recommendations from the findings include:

1. The no rivalry approach to learning among students should be embraced by all as it will increase their interest, motivation, retention and achievement in learning activities.
2. Students, especially post graduate students should see themselves as peers as to develop their interpersonal skills and social relationships as well engage their self esteem.

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