

An Evaluation of Cooperative Learning Qualities and Its Impact Classroom Assessment on Some Teacher Training Colleges in Cameroon: Quantitative Perspective

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Abstract: *This study examined cooperative learning qualities and classroom assessment in some teacher training colleges in Cameroon. To this end, the quality of cooperative learning will be examined through academic quality, pedagogical quality, classroom management quality and didactic quality to see how they can bring about relevance of knowledge constructed, comprehension and mastery and equally influence learners performances, hence classroom assessment. The sample size was made up of 411 participants. The descriptive survey or quantitative research design was used because it involves the collection of data which is numerical in nature so as to be able to explain, predict as well as control the phenomenon under study and data collected is analysed statistically. A survey method with a questionnaire as instrument was used in collecting data. NRTVR software and statistical package (SPSS) were used in analysis with mean, standard deviation and Pearson correlation as tools. According to the findings academic, pedagogic, classroom management and didactic qualities significantly influence classroom assessment at a 2-tailed Correlation significant level of 0.01. Therefore, cooperative learning qualities significantly influence classroom assessment.*

Key words: *cooperative learning, qualities, assessment.*

I. Introduction

Cooperative learning is commonly used in the form of Group work technique in contemporary Teacher's Training classrooms in Cameroon. This is especially with those of one year course (holders of GCE Advance level). This is as a result of the limitation time in relation to the work load to be covered within a year as prescribe in the official syllabus of Teacher Training Colleges (TTCs), which involve 24 subjects (courses). Thus cooperative learning which takes the form of group work is often used to gain time to cover the required work load. Therefore, the main purpose of this study is to evaluate the quality of cooperative learning and its influence on classroom assessment.

The phenomenon to be addressed in this study is to establish a relationship between cooperative learning qualities and classroom assessment. To Johnson and Johnson (1989) "greater performance is obtained by cooperation than competitive or individuals effort. Johnson and Johnson (2000) states that without the cooperation of its members, society cannot survive, and the society of man have survived because the cooperativeness of its members made survival possible.

With regards to the evaluation of cooperative learning a number of researchers have carried out diverse researches and publications. Oben (2018) evaluates the effects of cooperative learning strategies and attitudes on performance in secondary school mathematics in the South West Region of the Republic of Cameroon. In this work, the author sought to examined the extent to which cooperative learning strategies and attitude affects performances of students in secondary school mathematics; having observed the constant poor performance of students at the General certificate of Education for almost five years. The results showed that there is a significant relationship between participation in mathematics lesson and performance in secondary school mathematics.

Furthermore, Lyonga (2018) in trying to evaluate the use of cooperative learning carried out a study on Peer Learning amongst students of Higher Technical Teacher's Training College (HTTTC) of the University of Buea in Kumba. In this study, the researcher determined the effectiveness of peer learning of students through study groups and peer tutoring on students' achievement, a quantitative description data was used. The descriptive survey design was used on a sample of 234 student teachers of both first and second cycle of the 14

different departments of the HTTTC in Kumba, Cameroon. Findings indicated that the importance of studying in groups with classmates and peer tutoring by other students enhances success in their end- of- semester and final year examinations, due to the fact that students are able to form cohesive groups where they freely expressed their ideas and also help others to succeed.

Also, in an attempt to enhance the Quality of cooperative learning through peer assessment, Lourdasamy and Divaharans (2000), examined the benefit of cooperative learning to students who used it. According to them, cooperative learning enhanced the acquisition of knowledge, cognitive and social skills. As aim of their study, they sought out to examine whether the introduction of peer assessment improves the quality of participation in cooperative learning, as perceived by the students in one of their courses. Findings indicated that peer assessments helped to encourage and accentuate benefits of cooperative group work for the students. Students saw the task of assessing group presentation of their peers as interesting and accepted.

This study is thematically limited to four qualities of cooperative learning and classroom assessment respectively. This study was designed to evaluate the weight of the quality of cooperative learning on classroom productivity. In evaluating quality in education through cooperative learning, the researcher limited herself to academic quality, pedagogical quality, classroom management quality as well as didactics quality; as well as relevance of knowledge constructed, comprehension, mastery, and learners' performances as classroom assessment variables. Also, this study was carried out only in six (6) Government Bilingual Teachers Training Colleges in Cameroon namely: GBTTC Garoua, GBTTC Edea, GBTTC Ngaoundere, GBTTC Yaounde, GBTTC Bertoua and GBTTC Bamenda. This investigation was carried out during the 2020/2021 academic year. The sample chosen was restricted to student teachers in the short listed teacher training colleges and only to those who could express themselves in the two official languages of Cameroon-English and French.

A study of this magnitude will serve as a base for measuring and evaluating quality as far as education is concerned; it's going to contribute to the achievement of classroom productivity because the teachers and other educational stake holders will know the right measures and practices to put in place to enhance the performances of student teachers who are at the centre of the teaching and learning process. This study will also be of great help to the teachers, curriculum and evaluation processes, and the school administrators will be given an insight to the quality of pedagogic practices. Also, the student teachers will be able to assess the quality of cooperative learning activities they practice with their teachers.

II. Conceptual Background

1.1. Academic Quality

According to Coombs (1985) in Fredriks et al. (2004) Academic quality or quality in education simply refers to how well the knowledge imparted to learners fits the present and future needs of the learners. Coombs is trying to looking at the relevance of that which is taught and learned when academic quality is mentioned. So when talking of academic quality we are looking at how well learners do have a mastery of what they have learnt, we are looking at how relevant that which is learnt to learners day to day life be it in the present as well as in the future. Knowledge and skills should not just been impacted to the learner but learners should have a good mastery of that which they are taught.

1.2. Pedagogical Quality

Pedagogical quality in this study is examined through group competition, motivation, imitation and individual accountability. According to Barber and Mourshed (2007) in Chris and Pearce (2012), Performance in education is greatly influenced by the quality of teaching. Implying that, the high performance or bad performance of learners is based on the quality of teaching. It is in the same light that Barber and Mourshed (2007) in Pearce (2012) state "the quality of an education system cannot exceed the quality of its teachers" because based on their conclusion, schools with the best teachers are those that have good school systems.

1.3. Classroom Management Quality

Emmer and Stough (2001) believe that classroom management deals with the ability of the teacher to organize and manage learners behaviors which will intend enable them (learners) achieve positive educational outcomes. Thus classroom management establishes a good environment that makes the teaching and learning process effective and possible. Therefore, Ogunu (2000) hold that classroom management consists of planning, supervising, controlling and coordinating learner's activities during lessons. Classroom management in this work is examined through classroom management to accommodate group work, monitoring activities in group work, discipline and rules and regulations.

1.4. Didactic quality

Didactics is seen as a theory concerned with social practices which are geared towards design, implementation and evaluation of teaching and learning programs. It is equally concerned with designing teaching and learning situations and the orientation and support of students learning; judging from the fact that it identifies and analyses problems coming from the teaching and learning processes so as to provide the best possible learning opportunity to all learners in educational institution (Camilloni et al., 2007).

III. Theoretical Framework

This work is based on a number of theories. Social learning theories help us to understand how people learn in social contexts (learn from each other) and informs us on how we, as teachers, construct active learning communities through Interactions and communications with others. Vygotsky (1962) examined how our social environments influence the learning process. He suggested that learning takes place through the interactions students have with their peers, teachers, and other experts. Consequently, teachers can create a learning environment that maximizes the learner's ability to interact with each other through discussion, collaboration, and feedback. Furthermore, Johnson and Johnson (2005) say Social independence theory is based on the fact that, individual's goals can be accomplished or achieved through action of others. According to Slavin (2011) this perspective is based on the fact that the learners or group members help each other learn taking in to consideration that they care about their group and its members and they come to derive self-identity benefit from group membership.

A number of research works have oriented their focus on cooperative learning quality and classroom assessment in the Cameroonian educational process and system as a whole. However, little focus has been placed on evaluating qualities of cooperative learning. The following research hypotheses were formulated to guide this investigation:

3.1. General Hypothesis

To what extent does the quality of cooperative learning influences classroom assessment?

3.1.1. Research Hypothesis

1. Academic quality of cooperative learning significantly influences classroom assessment.
2. Pedagogic quality of cooperative learning significantly influences classroom assessment.
3. Classroom management quality of cooperative learning significantly influences classroom assessment.
4. Didactics quality of cooperative learning significantly influences classroom assessment.

IV. Methodology Of The Study

A descriptive survey research method was used for the study and the simple random sampling technique was used to arrive at the four hundred and eleven student-teachers (411) which served as the sample of the study. Here pieces of papers were written with odd and even numbers; that is odd numbers bore the code '1' and even numbers bore the code '2'. They were all mixed up in a basket where student -teachers were asked to choose or pick up a paper from. Those who picked the code '2' which is an even number were chosen for the sample, thus automatically became a participant. The sample was calculated using www.surveymonkey.com, an online sample size calculator. The researcher used it in calculating the sample size from 1302 student-teachers, at a confidence level of (95%) and an error margin of (4%). Thus giving us 411 student teachers as the sample

The questionnaire was the instrument used for data collection. Firstly, it was constructed based on the study's objective with 25 items, 5 items per section with each section having one distractor; secondly, examining the target population in order to identify the means through which copies of the questionnaires will get to them; thirdly, pretesting, and administration of questionnaire; finally analysing data and interpreting the results. NRTVB analysis software was used in calculating the construct validity of the data obtains from a 35 questionnaires respondent pre-test. The results obtained from the pre-test stood at 0.61, meaning that the instrument was appropriate and useful.

Amin (2005) sees quantitative research design as plans that orient towards qualification and are used in order to describe current condition or investigate cause and effect relationship. Quantitative research involves the collection of data which is numerical in nature so as to be able to explain, predict as well as control the phenomenon under study. The data collected here was analysed statistically. The descriptive statistics was used in analysing data and the SPSS (statistical package) version 26 was used in analysing the responses of the questionnaire. The mean, standard deviation, and Pearson correlation were the statistical tools used in analysis of the questionnaire.

V. Presentation Of Findings

5.1. Research hypothesis 1: Academic quality of cooperative learning significantly influences classroom assessment

Table 1 shows the mean and standard deviation of the academic quality of cooperative learning on classroom assessment. The mean of academic quality stood at 16.60 against 15.61 for classroom assessment for the 411 respondents. The standard deviation of the academic quality was .800, while that of classroom assessment is 1.280 implying that most of the scores were not far from mean. N which is 411 represents the total number of participants who responded to this section of the questionnaire.

Table 1: The mean and standard deviation of the responses on research hypothesis 1

	Mean	S.D	N
Academic quality	16.60	.800	411
Classroom assessment	15.61	1.280	411

Table 2 presents Pearson correlation for academic quality and classroom assessment which stands at 0.14 with a significance of 0.004 indicating significance level of 0.01 (2-tailed). N is the total number of respondents. To obtain the coefficient of determination (r^2), given that Pearson correlation coefficient which stands at 0.02, $(0.14)^2=0.02$ multiply by a hundred (100) =2%. Thus the variance value 2% shows that 2% of the variance in the dependent variable has as cause the independent variable, hence 2% of the variance in classroom assessment is explained by academic quality and vice versa. Hence, a bidirectional correlation with two tailed significance.

Table 2: Correlation between academic quality and classroom assessment

			1AQ	2CA
1 Academic quality	Pearson Correlation	1	.133**	
	Sig. (2-tailed)		.007	
	N	411	411	
2 Classroom assessment	Pearson Correlation	.133**	1	
	Sig. (2-tailed)	.007		
	N	411	411	

** . Correlation is significant at the 0.01 level (2-tailed).

This shows that there is a significant relationship between academic quality of cooperative learning and classroom assessment, thus confirming hypothesis one. This finding is in accordance with Oben (2018) who found out that there is a significant relationship between participation in mathematics lesson and performance in secondary school mathematics. Therefore, academic quality of cooperative learning influences classroom assessment from the perspective of knowledge construction, comprehension, mastery and learners performances. To this the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted.

5.2. Hypothesis 2: Pedagogical quality of cooperative learning significantly influences classroom assessment.

Table 3 shows the mean and standard deviation of the responses on the pedagogical quality of cooperative learning on classroom assessment. The mean of the pedagogical quality stood at 19.10 against 15.61 for classroom assessment for the 411 respondent of the study. The standard deviation of the pedagogical quality stands at 0.83 while that of classroom assessment is 1.280 showing that majority of the scores were close to the mean. N which is 411 represents the total number of respondents who answered the questionnaire.

Table 3: The mean and standard deviation of the responses on research hypothesis 2

	Mean	S.D	N
Pedagogical quality	19.10	.831	411
Classroom assessment	15.61	1.280	411

Table 4 indicate Pearson correlations for pedagogical quality and classroom assessment at a coefficient of 0.14. Significance was at 0.00, indicating a significance level of 0.01 (2-tailed). The total number of respondents was represented by N (student teachers). To have the coefficient of determination (r^2), Pearson correlation coefficient of 0.14 is square rooted. $(0.14)^2=0.02$, then multiplied by a hundred (100), and the result is 2%. The variance value 2 variance vindicates that, 2% of the variance in the dependent variable has as cause on the independent variable.

Table 4: Correlation between pedagogic quality and classroom assessment

		1 PQ	2CA
Pedagogic quality	Pearson Correlation	1	.142**
	Sig. (2-tailed)		.004
	N	411	411
Classroom assessment	Pearson Correlation	.142**	1
	Sig. (2-tailed)	.004	
	N	411	411

** . Correlation is significant at the 0.01 level (2-tailed).

Therefore, 2% of the variance in classroom assessment is explained by pedagogical quality. Here we have a bidirectional correlation with two tailed significance. Hence 2% of the variance in pedagogical quality is influenced by classroom assessment. Thus there exist a significant relationship between pedagogical quality of cooperative learning and classroom assessment; hence accepting the alternate hypothesis (H_a) and rejecting the null (H_o). This confirms hypothesis two. This finding agrees with that of Lyonga (2018) that the importance of studying in groups with classmates and peer tutoring by other students enhances success in their end- of- semester and final year examinations, due to the fact that students are able to form cohesive groups where they freely expressed their ideas and also help others to succeed.

5.3. Hypothesis 3: Classroom management quality of cooperative learning significantly influences classroom assessment.

Table 5 presents the mean and standard deviation of classroom management quality on classroom assessment. The mean of the classroom management quality at, 16.40 and 15.61 for classroom assessment for the 411 respondents. The standard deviation stands at 1.114 for classroom management quality against 1.280 for classroom assessment which shows that most of the scores were close to the mean. N represents the total number of participants who respondent to the questionnaire.

Table 5: The mean and standard deviation of the responses on research hypothesis 3

	Mean	S.D	N
Academic management quality	16.40	1.114	411
Classroom assessment	15.61	1.280	411

Table 6: Correlation between classroom management quality and classroom assessment

		1 PQ	2CA
1 Classroom management quality	Pearson Correlation	1	.139**
	Sig. (2-tailed)		.000
	N	411	411
2 Classroom assessment	Pearson Correlation	.139**	1
	Sig. (2-tailed)	.000	
	N	411	411

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6 presents Pearson correlation for classroom management quality and classroom assessment at 0.4 coefficient. Significance stood at 0.00, showing a significance level of 0.01 (2-tailed). N represents the total number of participants (student teachers). To calculate coefficient of determination (r^2), Pearson correlation coefficient is at 0.4 was square rooted, $(0.4)^2=0.16$. The answer was then multiplied by a hundred (100) having

16. This 16% variance value indicates that, 16% of the variance in the dependent variable has as cause the independent variable.

Therefore, 16% of the variance in classroom assessment is explained by classroom management quality. The significance is two tailed and correlation is bidirectional. This indicates that 16% of the variance in classroom management quality is influenced by students’ professional development. Thus there is a significant relationship between classroom management quality of cooperative learning and classroom assessment, thus rejecting the null hypothesis (Ho) and accepting the alternate hypothesis (Ha); confirming hypothesis three. This finding is in accordance with Kounin (1970), who affirm that quality management can be attained when learners are actively participating in the lessons; thus when learners are fully engaged in lessons.

5.4. Hypothesis 4: Didactic quality of cooperative learning significantly influences classroom assessment.

Table 7 shows the mean and standard deviation of the responses on the didactic quality of cooperative learning and classroom assessment.

Table 7: The mean and standard deviation of the responses on research hypothesis 4

	Mean	SD	N
Didactic quality	19.10	.832	411
Classroom assessment	15.61	1.280	411

According to table 7 the mean of the didactic quality stood at 19.10 against 15.61 for classroom assessment of the 411 respondents. The standard deviation of the didactic quality is 0.832, while that of classroom assessment stands at 1.280 which shows most of the scores were not far from the mean. N which is 411 shows the total number of respondents in relation to the questionnaire.

Table 08: Correlation between didactic quality and classroom assessment

		1DQ	2CA
1Didactic quality	Pearson Correlation	1	.509**
	Sig. (2-tailed)		.000
	N	411	411
2Classroom assessment	Pearson Correlation	.509**	1
	Sig. (2-tailed)	.000	
	N	411	411

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8 presents Pearson correlation for didactic quality and classroom assessment, with a coefficient of 0.51. Significance stood at 0.00, indicating a significance level of 0.01 (2-tailed). N represents the total number of participants (student teachers). To calculate coefficient of determination (r^2), Pearson correlation coefficient is at 0.51 was square rooted, $(0.51)^2=0.26$. 0.26 is multiplied by a hundred (100), the result is 26. This 26% variance value indicates that, 26% of the variance in the dependent variable has as cause the independent variable.

Therefore, 26% of the variance in classroom assessment is explained by didactic quality. This case is a two tailed significance and correlation is bidirectional. Thus 26% of the variance in didactic quality is influenced by classroom assessment. Therefore, there is a significant relationship between the didactic quality of cooperative learning and classroom assessment, hence confirming the 4th hypothesis. This finding is in accordance with Slavin (2013) who found out that in a best evidence synthesis on primary and secondary mathematics and reading and programs for struggling readers the teaching method and materials should well-structured like that of cooperative learning to have a positive influence on learning, which will in return improve classroom assessment. Thus confirming the alternate hypothesis (Ha) and rejecting the null hypothesis (Ho)

Table 9 presents the summary of the mean and standard deviation of the responses of academic quality, pedagogical quality, classroom management quality, didactic quality on classroom assessment.

Table 9: Measures of the quality of cooperative learning and classroom assessment

	Mean	S.D	N
Academic quality	16.60	.800	411
Pedagogical quality	19.10	.831	411
Classroom management quality	16.40	1.114	411
Didactic quality	19.10	.832	411
Classroom assessment	15.61	1.280	411

Table 9 presents a summary of the different means and standard deviation of the four research hypothesis. The mean of the academic quality of cooperative learning stands at 16.60; mean of pedagogical quality is at 19.10; that of classroom management quality of cooperative learning is at 16.40; and 19.10 for didactics quality of cooperative learning against 16.61 mean for classroom assessment from 411 respondents. The standard deviation of the academic quality of cooperative learning is at 0.80, and that of pedagogical quality of cooperative learning is 0.83, that of classroom management quality of cooperative e learning stands at 1.11 while that of didactic quality of cooperative learning is at 0.83 against 1.28 of the 411 responses on classroom assessment. This shows that a majority of the scores were respectively found close to the mean.

Table 10: Correlation between pedagogic quality and classroom assessment

	Pearson Correlation	Sig. (2-tailed)	N	CA
Academic quality	.133**	.007	411	.133**
Pedagogic quality	.142**	.004	411	.142**
Classroom M Q	.396**	.000	411	.396**
Didactic quality	.509**	.000	411	.509**

** . Correlation is significant at the 0.01 level (2-tailed).

Table 10 presents a summary of Pearson correlation for the four research hypotheses which resulted in a coefficient of 0.13, 0.14, 0.4 and 0.51 respectively for academic quality, pedagogical quality, classroom management quality, didactics quality and classroom assessment; with a significance level of 0.00 for all of them. This indicates significance levels of 0.01 (2-tailed) for all of the above variables. N represents the total number of respondents (students). Coefficient of determination (r^2) was gotten 0.02, 0.02, 0.16 and 0.26 respectively for academic quality, pedagogical quality, classroom management quality and didactics quality of cooperative learning.

The variance value which stood at 2% shows that 2% of the variance in the dependent variable of classroom assessment has as cause the independent variable of academic quality as well as the 2% of pedagogical quality, 16% of classroom management quality and the 26% of the didactic quality indicating that 2% for academic quality, 2% for pedagogical quality, 16% of classroom management quality and 26% for didactic quality indicates that 2% , 16% and 26% of the variance in classroom assessment is explained by pedagogical quality, classroom management quality and didactics quality respectively. Hence, 2% of academic quality, 2% of pedagogical quality, 16% of classroom management and 26% for didactics quality are all influenced by classroom assessment.

Thus there exist a significance relationship between academic quality, pedagogical quality, classroom management quality and didactic quality of cooperative learning and classroom assessment and confirms the main hypothesis. This is in accordance with Johnson and Johnson (1989) who holds that much greater is the performance obtained through cooperation than those obtain through competition or individuals effort.

VI. Conclusion and recommendation

The study got to the conclusion that academic quality is one of the factors that affect classroom assessment. Therefore, academic activities should be qualitatively planned and executed so as to create a positive relationship between academic activities and classroom assessment activities. Also, pedagogic quality is another factor that affects or influence classroom assessment. To this regard pedagogic processes should be carefully planned and implemented taking into consideration assessment factors. Furthermore, classroom management quality as a factory greatly affects classroom assessment. Therefore, instructors should be professional in organising and managing cooperative learning in classroom. It should be objective with guiding principles and should be time bound. And finally, didactic quality is a very powerful factor to consider with

respect to student-teachers' knowledge construction and performance in classroom assessment. Therefore, didactic procedures, methods, materials and tools should be chosen and organised taking into consideration the role they will play during classroom assessment.

In fact, cooperative learning qualities, from academic quality, pedagogical quality, classroom management quality, to didactic quality significantly influence classroom assessment variables of knowledge construction relevance, comprehension, content mastery, and learner's performances. The study has established that there is a significant relationship between cooperative learning qualities and classroom assessment. Therefore, student-teachers should exploit cooperative learning in its entirety to construct relevant knowledge, facilitate comprehension, ensure mastery of learning content, hence improving their performances in classroom assessment. The teachers, administrators, and policy makers should exploit cooperative learning to increase classroom productivity, and use the right measures and practices to enhance the performances of student teachers who are at the centre of the teaching and learning process. Also, curriculum and evaluation experts as well as educational researchers should engage in quality evaluation. This will help improve the educational quality of the sector in all its dimensions.

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