Approaches of Cooperative Learning across Ministry of Health Nursing Education Institutions in Bamenda-Cameroon: Perceptions of Students and Teachers

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Abstract

Cooperative learning is an effective teaching strategy that maximizes student's learning. A descriptive study involving 219 nursing students and 27 teachers used a self-administered questionnaire to determine the approaches of cooperative learning and perceptions of nursing students and teachers in Bamenda. The study set to assess the use of cooperative learning in Bamenda-Cameroon, identify the techniques implemented, highlight its achievements, challenges and describe students' and teachers' perceptions. The table of random numbers was used to obtain a probability sample of students while teachers were conveniently sampled. Data were collected using a modified Cooperative Learning Implementation Questionnaire and analysed using SPSS version 20.0 at an alpha level of 0.05. Descriptive statistics was used to summarise numerical data, Correlation analysis through the Pearson Product Moment correlation test was used to test the relationship between cooperative learning and students' achievement, while t-test was used to compare the perceptions of students and teachers on cooperative learning. The margin of error was set at $P \leq 0.05$. Eventually, cooperative learning was noted to be occasionally used in Bamenda, with learning together, think-pair-share, group investigation and peer instruction identified as the methods often used.. The achievements of cooperative learning were affirmed with almost no disadvantage as the use of cooperative learning was observed to always improve students' achievement. Both groups of respondents indicated their love for cooperative learning and willingness to implement it but did not really agree on how it was implemented. Within the perspectives of this study, it was observed that cooperative learning existed as an informal technique of education in Bamenda.

Keywords: cooperative learning, nursing students, nursing teacher.

Introduction

Cooperative learning is the instructional use of small groups to promote students working together (Figure 1) to maximize their own and each other's learning [1]. It involves small heterogeneous groups of learners working towards a common academic or professional goal or task [2].

Figure 1. Elements of Cooperative Learning, Picture from Viewing history through the digitallens.com

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Rationale and Need for the Study

The lone higher education institution in Cameroon that used to train faculty for nursing education institutions, the Centre for Higher Nursing Studies (*CESSI*) in the then University of Yaounde was shut down in 2001 due to economic regression. In 2009, the University of Buea conceived an MSc in Nursing Education programme to alleviate the situation. However, the effort is still inadequate because intake is limited and not regular, coupled with financial inaccessibility. Consequently, many of the faculty in the Ministry of Health Nursing Education institutions (MoHNEI) in Bamenda continue to rely solely on less interactive teacher-centred teaching methods like presentation. Such practices contribute to poor achievement and a wide range in students' marks during formative and summative evaluations

Secondly, the increasing demand for nursing education leaves each institution with so many students but with limited faculty to train them. So, lecture halls become overcrowded with an unacceptably high faculty-student ratio. To guard against the negative effect of the high faculty-student ratio, students should be enabled through cooperative learning so that they can benefit from their peers.

Thirdly, the numerous conflicts plaguing our societies today are evidence that societies have continued to live on a win-lose principle based on competition. Conflicts within/across healthcare professions and communities are on the rise even though deontology is taught and peace is advocated on a daily basis. Professional nursing staff needs to be versed with cooperative learning if they must contribute to the emergence of democratic culture as well as a culture of peace, development and tolerance.

Fourthly, the call for a boycott of schools and threats on nursing education staff and students by pro-independence fighters in Bamenda coupled with the advent of COVID-19 has reduced the weekly faculty-student contact sessions. A possible remedy for its consequences is for students to assist each other when confined in their various hostels. This would be better if the students are empowered with cooperative learning methods.

To formalise this technique as a method of education in Bamenda-Cameroon, some debates may be aroused. It is within this perspective that studies such as "Approaches of cooperative learning across Ministry of Health nursing education institutions (MoHNEI) in Bamenda-Cameroon: perceptions of students and teachers" are necessary.

The study aimed to determine the use and approaches of cooperative learning across Ministry of Health nursing education institutions in Bamenda and the perceptions of students and teachers towards it. The study specifically intended:

1. To assess the use of cooperative learning in MoHNEI in Bamenda
2. To identify the techniques of cooperative learning implemented.
3. To highlight the achievements/drawbacks of cooperative learning in Bamenda
4. To describe nursing students' and teachers' conceptions of cooperative learning.

The hypotheses under test were:

1. There is a statistically significant relationship between cooperative learning and students' perceived achievement in the Ministry of Health nursing education institutions in Bamenda.
2. There is a statistically significant difference in the perceptions of students and teachers on the use of cooperative learning in Ministry of Health nursing education institutions in Bamenda.

Review of Literature

Introduction

In 1991, the Johnsons proposed a new paradigm of teaching to improve student learning. The model appeals for a shift from

individualistic/competitive learning towards cooperative learning [3].

In addition, Slavin adapted a model to explain the mechanism that co-operative learning possibly uses to improve learning [4]. Furthermore, Slavin postulated that motivation to learn; to encourage and help others to do so activates co-operative behaviours that will result in learning (Figure 2). The motivation also included task motivation and motivation to interact in the group. In this model, motivation to succeed leads directly to learning, and it also drives the behaviour and attitudes that foster group cohesion, which in turn facilitates the types of group interactions - peer modelling, equilibrium, and cognitive elaboration - that yield enhanced learning and academic achievement [5].
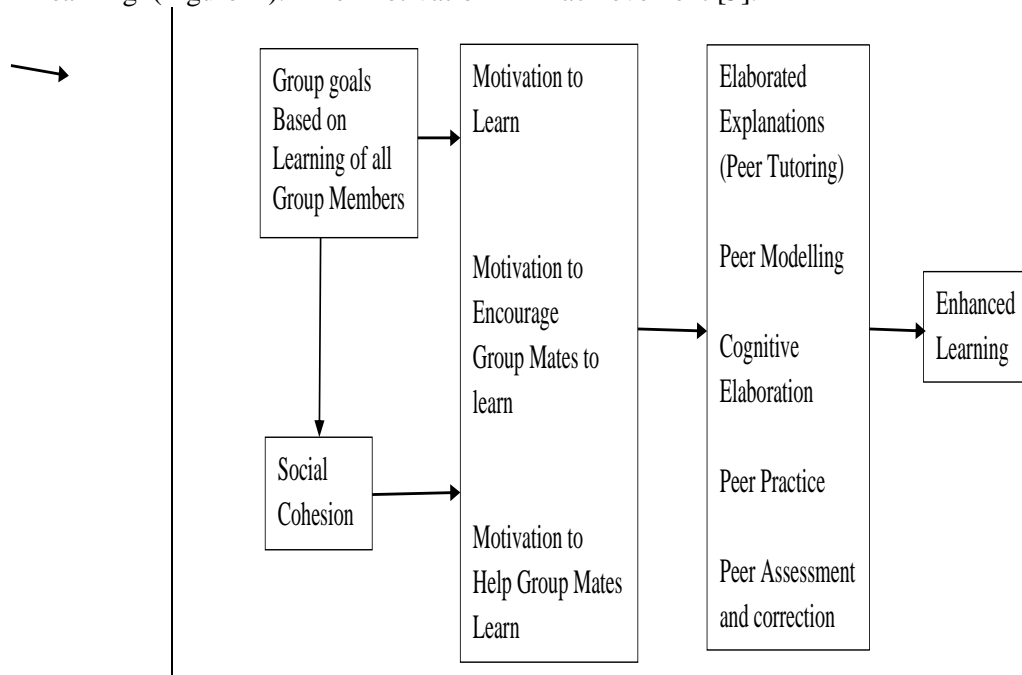

Figure 2. Conceptual Model on Cooperative Learning adapted from https://www.amazon.com/algernon

Types of Cooperative Learning

Four types of cooperative learning exist [6]:
1. Informal cooperative learning
2. Formal cooperative learning
3. Cooperative base groups
4. Constructive controversy

Basic Elements of Cooperative Learning

The basic elements of cooperative learning were highlighted by the Johnsons [1] to distinguish it from any ordinary group work as positive interdependence, individual accountability, face-to-face interaction, social skills and processing as the five essential elements for effective group learning, achievement and higher -order social, personal and cognitive skills such as problem-solving, decision-making and reflection (Fig, 1).

Approaches of Cooperative Learning

1. Structured Team Learning

This category contains methods that involve rewards to teams based on the learning progress of the teammates.

2. Informal Group Learning

It covers methods that are more focused on social dynamics, projects, and discussion than on mastery of well-specified content.

Advantages and Disadvantages of Cooperative Learning

Cooperative learning has enormous advantages and very few disadvantages. Group work and team goals remain the most important components of cooperative learning [7].

Globally, the benefits of cooperative learning have been found to be social, psychological,

and academic and assessment-related [8]. Similarly, the advantages of cooperative learning were grouped to comprise higher achievement, increased retention, more positive relationships, and better friendship. The advantages also included greater intrinsic motivation, higher self-esteem, greater social support, more on-task behaviour, better attitudes towards teachers and school [9]. Cooperative learning was also seen to produce many advantages that could be divided into three major groups: a better effort towards achievement, better interpersonal relationships, and improved psychological status [6, 7]. Moreover, cooperative learning was particularly noted for enhancing achievement and productivity, altruism, improved mental health, social responsibility, and personal respect [7].

More emphasis on academic; social, psychological benefits; and alternative student and teacher assessment techniques as major advantages of cooperative learning has also come from many other authors including Laal [10].

In addition, it is argued that cooperative learning should be implemented because it enables more children to learn actively; offers the opportunity for children to learn to help one another, enhances child-to-child learning support, and improves motivation towards success [11]. In the same light, Slavin [4] asserts that cooperative learning is advantageous because; it is among the most extensively evaluated alternatives to traditional instruction in use today; that it almost always improves affective outcomes, with students seeking to work in groups, feeling more successful and easily developing interest in subjects that are taught using it.

In another similar study, the effects of cooperative learning on the perceived learning environment and critical thinking skills of 127 pre-service teachers were evaluated in the USA [12]. Cooperative learning techniques were found to have merits and profit in the undergraduate classroom. It was noticed that

overall, the cooperative learning environment was perceived by students to be more supportive, safe, and helpful in the formation of relationships in the classroom [12].

The impact of cooperative learning methods on students' academic achievement and laboratory proficiency in biology was also investigated in Ethiopia [13]. Results exemplified that there was a significant learning gain obtained via cooperative learning achievement division, followed by cooperative discussion group.

From the questionnaire, 67% of teachers and 59% of students preferred working cooperatively than working independently, meaning that respondents understood the significance of CL as a widely accepted approach of teaching that encourages active learning. Lack of training, a number of students and inadequate materials were major hindrances identified to the use of CL [13].

Finally, studies on co-operative learning that compared co-operative learning with control groups studying the same objectives but taught using traditional methods in elementary and secondary schools were reviewed by Slavin [4, 5]. There was a 78% significantly positive effect observed on achievement, with none having any negative effects.

However, a few challenges have been registered with cooperative learning [14, 15]. In Nigeria, CL was observed to be a teaching practice with complex, interwoven elements that need training on the teacher and student preparation. The method, according to them, was seen by new teachers to be time-consuming in addition to the adequate facilities and infrastructure required [14]. It was also highlighted that more space, furniture, and group dynamics were needed to monitor the activities of highly performing students, and the teacher had more work since groups finish an assignment at different times [14]. Cooperative learning has further been described as a complex teaching practice that relies heavily on the use of dynamics and matching of groups

with lessons [15]. More evidence-based support for CL is found in the next section that considers the views of learners and educators on cooperative learning.

Perceptions of Students and Teachers on Cooperative Learning

Many investigations on the views of students and teachers concerning cooperative learning (CL) have been reported. Three distinct approaches of CL were implemented in medicine, dentistry, and mathematics, and then feedback was obtained from both students and faculty [16]. Both students and faculty were in favour of CL as the majority of students (68%) indicated that they enjoyed cooperative learning [16].

In Wenzhou, China, a mixed-methods investigation was carried out to ascertain students' and teachers' perceptions towards cooperative leaning [17]. The findings of the study showed that the CL approach was not implemented on a daily basis in Wenzhou, China. That could mean that CL was implemented to some degree, but it was not habitual. Identified approaches were group discussion, peer assignment, and role-play, while strategies such as Think- pair- share, Jigsaw, and reciprocal learning were never used [17]. The teachers mentioned that they had never heard of the latter strategies before. Traditional teaching methods were seen to still be in wide use in Chinese classrooms. The persistence of the traditional methods was attributed to the long Chinese traditional educational history and its influence on the Chinese people's mindsets, alongside the examination-oriented teaching in China. Both teachers and students could not give up teacher-centered instruction for a great fear of getting low grades.

Some of the advantages of CL deduced from the study were that CL could improve students' oral communication skills, motivate them to interact with each other for more engagement in classwork and improve social skills [17].

Teachers reported a drop in workload and burnout since they would no longer talk all the time. Teachers also reported more learning from the increased interactions with students.

However, the large class size of about 30 was seen to be time -consuming and a lack of knowledge and experience on CL also lacked since there was no training. Classroom preparation alongside classroom management was difficult as the teacher could not attend to all needy students or groups at the same time. In addition, lack of resources such as more classrooms, computers, and projectors were also noted as impediments to CL. The standardized nature of certification examination questions was another disadvantage registered [17].

On perceptions towards CL, it was realized that most of the participants liked cooperative learning approach (75%) and preferred working in groups to working individually (73.5%). Over two-thirds of them (79%) were willing to participate in group work, and a majority (84%) acknowledged that classes became more interesting when teachers used CL [17]. Moreover, 78% of the participants wished that teachers would use more CL instructions in English classrooms. Regarding the students' perceptions towards CL approach, about half (55%) of the students responded that the teachers used CL strategies in the English classroom.

Overall, it was concluded that students in Wenzhou College held positive attitudes towards CL. All [7] teachers acknowledged that CL was really a good approach itself, with four of them confirming their current use of it in the classroom. CL was upheld as a great approach, but staff advanced different reasons such as more time spent formulating lesson plans, loss of teacher control, lack of knowledge and experiences, and lack of resource as difficulties implementing it in their classrooms.

In another study in Brisbane-Australia aimed at documenting teachers' perceptions on cooperative learning, 10 middle-year teachers

who implemented cooperative learning in their classrooms were interviewed [18]. All the teachers spoke positively about their CL experiences, noting that the learners responded well to their small-group experiences and helped them better manage and structure their lessons. About the difficulties experienced, concern was reported with the socializing that occurred in the groups, time management, and the organization required implementing CL. Other issues that challenged the teachers included the composition of the group (gender, ability, and friendship) and the type of task needed to motivate students. Assessing students' work in small groups presented a challenge for some teachers as informal assessments of students' progress were done. Other students were encouraged to self-evaluate and reflect on their progress. Interestingly all teachers agreed that preparation, including training students in social skills and conflict management, needed to occur if students were to work successfully in groups. Finally, while a number of teachers reflected positively on their experiences of CL and made the comment that it should be used more widely, a few indicated that it was a challenge and required a commitment on the part of the teacher if it were to be implemented effectively [18].

Another study revealed that the majority, 72% and 70% of students, reported that cooperative learning helped them to learn the lesson's content and facilitated for communicating respectively while completing their group work. A further 67% and 65% of the students considered cooperative learning as helping them to improve their grades, as learning activities were described as funny, and learning said to be better in a team setting [19].

Perception of cooperative learning was also examined in a university in Kinki District, Japan [20]. Ninety-first-year nursing students were taught communication skills using the Think-Pair-Share technique of cooperative learning and data collected by self-administered questionnaire then evaluated for the acquisition of the learning outcomes using text analysis. Participants acknowledged improved self-view via self-reflections and self-realizations prompted by the communication exercise; becoming more aware of ideas and opinions different from theirs by listening to the opinions of others; having developed more deepening relationships by learning about diverse ideas and values through interactions with others and greater satisfaction with the group work.

In the same light, the jigsaw was used to test the effectiveness of cooperative learning activities on the improvement of learning achievement and self-directed learning behaviours of 45 master nursing students in the Prince of Songkla University, Thailand [21]. One of the core courses, statistics, was selected to be covered in the study. Descriptive, inferential, and qualitative statistics were used to analyse data on students' learning achievement and self-directed learning behaviours. The differences between students' learning achievement and their self-directed learning skills before and after joining cooperative learning using jigsaw activities were compared using paired t-test statistics. The study supported the fact that cooperative learning using jigsaw activities improves students' learning achievement and self-directed learning behaviours.

Similarly, teacher and student perceived obstacles to effective student collaboration were examined by interviewing 19 teachers and 23 students in different disciplines at a pre-service teacher education faculty at a university in Vietnam [22]. The study has contributed to cooperative learning by identifying among others four key hindrances to cooperative learning.

Students' lack of collaborative skills such as accepting opposing viewpoints, giving elaborate explanations, providing and receiving help, and negotiating prevented them from working productively in groups. Free-riding existed where some peers contributed most, while others worked less, and some did not

even put in effort when completing their own tasks. Third, competence status was noted as there were often influential members whose ideas were mostly accepted by the majority of their fellow group members without dispute. Lastly, Feelings of friendship in the group sometimes inhibited them from working seriously and constructively towards good arguments. Three interrelated factors were seen to be responsible for the obstacles:

1. Goals emphasized individual academic learning in place of collaborative learning
2. Instruction was focused on cognitive instead of collaborative skills
3. Assessment targeted group productivity, not collaborative performance

The antecedents were blamed on the strong focus of the teachers on the cognitive aspects of CL, which made the participating teachers to neglect the collaborative aspects of CL. Minor obstacles to CL identified were lack of academic knowledge, large class, time constraints, and different personal styles [22].

On the other side, in an effort to determine the effect of active and cooperative instruction on the preferences of beginning nursing students' learning strategies, it was observed that student nurses exposed to active/cooperative instructional methods had an increased preference for these methods after a semester of instruction, while those exposed to traditional instruction had a higher preference for traditional methods [23]. Increased preference for more elaborative independent study strategies was reported by students participating in active class instruction. However, overall preference for both groups indicated a reliance on surface study strategies of memorization and recall.

Materials and Methods

Research Design

A structured, quantitative, descriptive non-experimental study was carried out using a self-administered, modified Cooperative Learning Implementation Questionnaire (CLIQ), version of Jan. 28 [24]. The study was conducted between September and December 2020.

Study Population

The study population was nursing students and teachers of Ministry of Health nursing education institutions in Bamenda, while the sample was drawn from the second-and third-year classes in each of the schools under study. A total of 217 nursing students alongside 27 of their full-time teachers, were recruited for the study.

Sampling Technique

Both probability and non-probability sampling techniques were employed. Fifty percent of the students in each of the 12 classes concerned were selected by simple random sampling. A table of random numbers was mounted in the classroom, its use explained then, with the aid of the class lists, a simple random sample of 50% of the class selected. Meanwhile, all the teachers available at the time of study in each of the institutions who were willing to participate in the study were involved. The convenient sample was appropriate for teachers because permanent teachers were few, thus requiring exhaustive sampling.

Data Collection Instrument/ Technique

Data were collected from students and teachers using a structured, self-administered modified Cooperative Learning Implementation Questionnaire (CLIQ), version of Jan. 28, '98. CLIQ is a standardized tool developed by the Centre for the Study of Learning and Performance, CSLP at Concordia University in Montreal, Quebec, Canada. The instrument was modified to render the tool appropriate for the study setting. The content validity and reliability of the Modified Cooperative Learning Implementation Questionnaire were evaluated by pretesting with comparable respondents drawn from the Higher Teacher Training College (HTTC) Bambili. The questionnaire was reviewed by 10 education

experts, and corrections were made to ensure validity. The students' version was then pretested using 25 students (about 10% of the study population) in the second and third years of the Higher Teachers' Training College Bambili- Bamenda, while the version for teachers was pretested using 10 lecturers of the same institution. The results of the pretesting were used in computing relevant reliability statistics. Since the four clusters of the questionnaire contained non-dichotomously scored items, the internal consistency of each of the clusters was determined using the Cronbach alpha coefficient at 0.8.

Students were randomly selected using the table of random numbers, while available full-time teachers in each of the institutions were conveniently selected. The purpose of the study was explained to each of the prospective respondent groups. An invitation to voluntarily participate in the survey was presented, and then potential respondents were informed that there would be no direct compensation for participation. Prospective participants were informed of their freedom to withdraw from the study without any punishment at any point that they felt not to continue. Each of the volunteers in the study was served a copy of the questionnaire to complete and return. This procedure was repeated in each of the institutions and classes under study. The recovered questionnaires were then screened for completion, and the data prepared for analysis.

Data Analysis

Data were entered into Microsoft Excel 2007 and analysed using SPSS version 20. The five-point Likert scale of Strongly agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly disagree (SD) were assigned numerical point values of 5, 4, 3, 2, and 1, respectively. The data were summarized into percentages and used in the evaluation of the descriptive statistics. Correlation analysis through the Pearson Product Moment correlation test was used to test the relationship between cooperative learning and students' achievement, while t-test was used to compare the perceptions of students and teachers on cooperative learning. The margin of error was set at $P \leq 0.05$.

Scoring of the Questionnaire

Each variable on the questionnaire was assigned a numerical value ranging from 1 to 5. The total responses for each variable were tallied for all the respondents to have the frequency. The frequency was then expressed as percentages for variables like sex, class size, and qualification or mean, in the case of the five-point Likert scale items. For example, sex had 1=male and 2=female. In the case of Likert scale 1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree

Results and Discussion

The study involved 219 students and 27 teachers. The majority of the students were female (87%), confirming the fact that nursing is a feminine profession. But the teachers were mostly male (66%), implying that female nurses in Bamenda do not readily pick up teaching positions. Non-nursing staff also occupies full-time teaching positions in the schools. Most of the teachers (48%) had a master's degree, the preferred qualification for a teaching position in MoHNEI. Both teachers and students reported class sizes greater than 60 students (63% and 53%, respectively). The classrooms were therefore overcrowded as the maximum enrolment prescribed by MoH is 60 (Figure 3). Large class size as an obstacle to cooperative learning has been reported in several studies in the literature reviewed.

A number of students and inadequate materials were major hindrances identified to the use of cooperative learning in Ethiopia [13]. In Nigeria, it was realized that cooperative learning needed more space in addition to the adequate facilities and infrastructure required [14]. Cooperative learning was further described as a complex teaching practice that

relies heavily on the use of dynamics and matching of groups with lessons [15]. In addition, Xuan [17] saw the large class size of about 30 as time-consuming for the effective implementation of cooperative learning in Wenzhou-China. Large class size and time constraints were also reported to be among the factors that hindered cooperative learning in Vietnam [22].
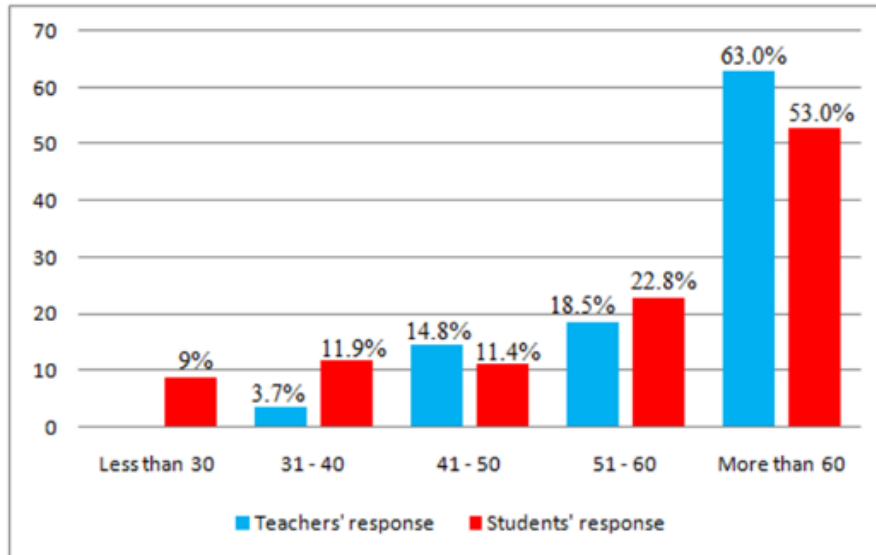
Figure 3. Class Size as Reported by Participants

Objective one: To assess the use of cooperative learning in MoHNEI in Bamenda, North West Region of Cameroon. Both teachers and students agreed that cooperative learning was used in Bamenda. Groups were reportedly formed by choosing friends (students) and through random assignments (teachers). The groups comprised 4 to 6 members each, and teachers were mostly available to monitor group work). Group size of 4-6 was normal [1], who stipulated that cooperative learning uses small groups of students. However, forming of groups by choosing friends could lead to feelings of friendship in the groups that could prevent students from working seriously and constructively towards good arguments [18, 22].

Students, however remained indifferent on the daily of use of cooperative learning while teachers were undecided on cooperative learning being part of their current classroom practices (Table 1).

Table 1. Mean Response and T-test of Teachers and Students on the Use of Cooperative Learning

Use of Cooperative Learning	Respondents	$\bar{x}$	SD	$\bar{x}_c$	Decision	t_{cal}	Decision
Use group study to teach or learn	Teachers	4.26	.98	4.21	A	1.02	NS
	Students	4.06	.93	4.07	A		
Always use group study	Teachers	3.59	1.08		A	.94	NS
	Students	3.37	1.20		U		
Group members depend on one another to achieve group goals	Teachers	4.22	1.05		A	.23	NS
	Students	4.17	1.02		A		
Each group member must do their share and master all the material	Teachers	4.52	1.01		SA	.84	NS
	students	4.37	.84		A		
Group members interact by	Teachers	4.41	.69		A	.93	NS

teaching and encouraging one another	Students	4.54	.72		SA		
Encouraged to develop collaborative and leadership skills	Teachers	4.67	.48		SA	3.65	S
	Students	3.98	.97		A		
Team members set team goals	Teachers	3.78	1.16		A	1.01	NS
	Students	3.99	1.02		A		
I am familiar with cooperative learning approach	Teachers	4.19	.88		A	1.55	NS
	Students	3.85	1.07		A		
Cooperative learning is part of my current classroom activities	Teachers	3.15	.99		U	5.50	S
	Students	4.13	.86		A		

Number of Teachers = 27; Number of Students = 219

Key: SA=Strongly agree A = Agree U=Undecided S = Significant at 0.05 level NS = Not significant at 0.05 level df =244 Table t-value = 1.96 Cluster t-cal =1.21 $\bar{x}_c$= Cluster Mean

Cooperative learning was therefore noted to be occasionally used in MoHNEI in Bamenda. This agrees with Xuan, [17] who noted that cooperative learning was not a daily practice in Wenzhou-China. The trend in Cameroon is influenced by the competitive learning approaches in MoHNEI, where results continue to be published in order of merit instead of grades.

Objective 2: To identify the techniques of cooperative learning implemented in MoHNEI in Bamenda-Cameroon.

Only 33.3% of the teachers had received training on cooperative learning techniques like group investigation, learning together, think-pair-share, jigsaw, structural approach, and STAD. Nevertheless, 67% of teachers and 82% of students implemented learning together, think-pair-share, group investigation, peer instruction, and the structural approach. The least popular method used by the students and teachers was the jigsaw, STAD, and TGT methods (Table 2).

Table 2. Cooperative Learning Methods Implemented by Students and Teachers

Cooperative Learning Methods Implemented	Students' Response		Teachers' Response	
	n	%	n	%
None	40	18.3	9	33.3
Think-pair-share	83	37.9	4	14.8
Jigsaw	13	5.9	1	3.7
Peer instruction	42	19.2	7	25.9
Group investigation	64	29.2	7	25.9
Learning together (Johnsons)	116	53.0	12	44.4
Structural approach (Kagan)	36	16.4	3	11.1
STAD and TGT(Slavin)	1	0.5	0	0

Number of Students = 219; Number of Teachers = 27

Up to 75% of the teachers who implemented cooperative learning never received any form of follow-up/support. It implies that teachers and students who had not been formally trained on cooperative learning methods made personal efforts to implement mostly learning together, think-pair-share, group investigation, and peer instruction, but without any accompanying support. Similar findings were obtained in previous studies.

Lack of training was identified as a problem to the implementation of cooperative learning in Ethiopia [13]. Identical findings were obtained in Nigeria, where cooperative learning was observed to be a teaching practice with complex, interwoven elements that needed training on the part of the teacher and student preparation [14]. Support to this observation also emanates from Cloud [15], who identified cooperative learning as a complex teaching practice that relies heavily on the use of dynamics and matching of groups with lessons. In Wenzhou-China, lack of knowledge and experience on cooperative learning was attributed to lack of training [17]. Another similar study in Brisbane, Australia, concluded that staff preparation, alongside training of students in social skills and conflict management, were necessary ingredients for effective implementation of cooperative learning [18]. Moreover, the lack of collaborative skills such as accepting opposing viewpoints and giving elaborate explanations together with the lack of academic skills reported in Vietnam also align with the findings of this study [22].

Objective 3: To highlight the achievements and challenges of cooperative learning in the MoHNEI in Bamenda, North West Region of Cameroon.

On achievements, most of the items were highly rated by the two categories of respondents, and they equally met the acceptance criterion mean of 3.5 and above on the five-point rating scale. Also, the cluster mean for teachers and students was 4.15 and 4.08, respectively, which met the acceptance criterion mean of 3.5 (Table 3).

Table 3. Mean Response and t-test of Teachers and Students on the Achievements of Cooperative Learning

Achievements of Cooperative Learning	Respondents	$\bar{x}$	SD	$\bar{x}_c$	Dec	t_{cal}	Dec
Cooperative learning is consistent with my teaching philosophy/learning goal	Teachers	3.70	1.13	4.15	A	3.10	S
	Students	4.26	.83	4.08	A		
Using cooperative learning enhances career advancement/grades and self esteem	Teachers	3.48	1.19		U	5.14	S
	Students	4.35	.77		A		
Peer interaction helps students to gain a deeper understanding of the material	Teachers	4.70	.47		SA	3.93	S
	Students	4.04	.87		A		
Engaging in cooperative learning enhances social skills	Teachers	4.41	.57		A	1.04	NS
	Students	4.25	.78		A		
Promotes friendship among students and better attitudes towards teachers	Teachers	4.30	.72		A	3.41	S
	Students	3.63	.97		A		
Enhances motivation to learn	Teachers	4.33	.68		A	.06	NS
	Students	4.34	.72		A		
Fosters positive students' attitudes towards learning	Teachers	4.15	.95		A	2.26	S
	Students	3.63	1.16		A		
Enhances student's assessment	Teachers	4.15	.72		A	.07	NS
	Students	4.16	.84		A		

Number of Teachers = 27; Number of Students = 219

Key: A = Agree U=Undecided S = Significant at 0.05 level NS = Not significant at 0.05 level df =244 Table t-value = 1.96 Cluster t-cal =0.68 $\bar{x}_c$= Cluster Mean

With respect to challenges, both teachers and students either disagreed or were undecided about the disadvantages of cooperative learning as there was no significant difference in the opinion of both categories of respondents. Cluster means for teachers and students were 2.79 and 3.03, respectively, less than the mean criterion of 3.5 (Table 4).

Table 4. Mean Response and t-test of Teachers and Students on the Disadvantages of Cooperative Learning

Disadvantages	Respondents	$\bar{x}$	SD	$\bar{x}_c$	Decision	t_{cal}	Decision
Cooperative learning does not prepare students for the real world	Teachers	1.81	0.83	2.79 3.03	D	1.81	NS
	Students	2.22	1.12		D		
Many students expect other group members to complete the work	Teachers	3.19	1.21		U	1.46	NS
	Students	3.54	1.21		A		
Cooperative learning requires a lot of resources	Teachers	3.11	1.55		U	.05	NS
	Students	3.12	1.20		U		
During cooperative learning classrooms are too noisy	Teachers	3.04	1.19		U	.85	NS
	Students	3.26	1.26		U		

Number of Students = 219; Number of Teachers = 27

Key: A = Agree D=Disagree U=Undecided S = Significant at 0.05 level NS = Not significant at 0.05 level df =244 Table t-value = 1.96 Cluster t-cal =1.52 $\bar{x}_c$= Cluster Mean

This meant that both teachers and students of nursing education institutions concurred with the overall achievements of cooperative learning in the teaching-learning process. These results are similar to the findings of Slavin [4], where it was noted that cooperative learning almost always improved affective outcomes with students eager to work in groups, feeling more successful, and liking subjects taught co-operatively. It was also argued that cooperative learning was particularly advantageous because students were motivated to learn and to encourage and help others to do so [5]. Again Slavin [7] considered group work and team goals as the most important components of cooperative learning. Another contribution on cooperative learning that supports this finding was advanced by Sonthara and Vanna [11], who postulated that cooperative learning enables more children to actively learn; offers the opportunity for children to learn to help one another; enhances child-to-child learning support and improves motivation towards success.

Hypothesis 1: There is a statistically significant relationship between cooperative learning and students' perceived achievement in the Ministry of Health nursing education institutions in Bamenda.

A statistically positive significant relationship (Table 5) was observed between the use of cooperative learning and student's perceived achievement (r = .365, p = 0.000<0.05).

Table 5. Two Tailed Correlation Matrices for Cooperative Learning and Achievement

Variable		Use of Cooperative Learning	Students Perceived Achievement
Use of cooperative learning	Pearson Correlation	1	.365[**]
	p-value		.000
	N	219	219
Students perceived achievement	Pearson Correlation	.365[**]	1
	p-value	.000	
	N	219	219

This means that the use of cooperative learning by students also improves on students' achievement. This result is again supported by the findings of Slavin [5], where it was argued that cooperative learning was particularly advantageous because students were motivated to learn and to encourage and help others to do so [5].

Objective four: To describe nursing students and teachers' perceptions on cooperative learning.

Concerning the mean response of students and teachers on their perception of applying cooperative learning in their classrooms, eight items were analysed, and five of them were rated below the acceptance criterion mean of 3.50 by the two categories of respondents, implying that both teachers and students generally denied that they hate cooperative learning as both respondents perceived it positively, declaring their readiness to participate in it in future (Table 6).

Table 6. Mean Response and T-test of Teachers and Students on Perceptions of Cooperative Learning

Variable	Respondents	$\bar{x}$	SD	$\bar{x}_c$	Decision	t_{cal}	Decision
Students go off tasks/hate cooperative learning	Teachers	2.11	.93	2.30	D	1.73	NS
	Students	1.80	.88	2.95	D		
Students are resistant to working in cooperative groups	Teachers	1.93	.92	t=6.39	D	.18	NS
	Students	1.96	.91	df=244	D		
Cooperative learning places too much emphasis on students' skills	Teachers	2.85	1.26		U	4.29	S
	Students	3.78	1.04		A		
It is impossible to evaluate students fairly when using cooperative learning	Teachers	2.70	1.20		U	2.60	S
	Students	3.33	1.18		U		
Engaging in cooperative learning interferes with students' academic progress	Teachers	1.74	.71		D	4.06	S
	Students	2.78	1.31		U		
Traditional methods should be abandoned in favor of cooperative learning	Teachers	2.41	1.25		D	1.68	NS
	Students	2.79	1.12		D		
Gives responsibility to students and challenges them to work harder	Teachers	2.33	1.33		U	8.30	S
	Students	4.23	1.09		A		
I am ready to participate in cooperative learning in future	Teachers	4.04	.94		A	2.39	S
	Students	4.42	.76		A		

Number of students = 219; Number of teachers = 27

Key: A = Agree U=Undecided S = Significant at 0.05 level NS = Not significant at 0.05 level df =232 Table t-value = 1.96 Cluster t-cal = $\bar{x}_c$= Cluster Mean

These results on perceptions are supported by some findings on previous studies. For instance, Goyak reported that the cooperative learning environment was perceived by students to be more supportive, safe, and helpful in the formation of relationships in the classroom [12]. In Ethiopia, 67% of teachers and 59% of students preferred cooperative work than working independently [13]. Another study whose findings support these observations

investigated teachers' perceptions and their medical, dentistry, and mathematics students [16]. Both students and faculty preferred CL, with the majority of students (68%) indicating that they enjoyed cooperative learning [16]. Cooperative learning was also positively perceived in Wenzhou, China, where most of the participants liked the cooperative learning approach, preferred working in groups, were willing to participate in group work, and acknowledged that classes became more interesting when teachers used CL [17]. Finally, the majority of students in another study supporting these findings reported that cooperative learning helped them in learning content of lesson and facilitated their communication while completing their group work. Cooperative learning was further considered as helping them to improve their grades [19].

However, a few students in this study were of the opinion that cooperative learning places too much emphasis on their skills and too much responsibility on students.

Hypothesis 2: Statistically significant differences were observed between perceptions of students and teachers on five out of eight items studied (P=0.05 and df =244). The items included; Cooperative learning places too much emphasis on students' skills, it is impossible to evaluate students fairly when using cooperative learning, engaging in cooperative learning interferes with students' academic progress, cooperative learning gives responsibility to students and challenges them to work harder, and I am ready to participate in cooperative learning in future. This means that students and teachers did not really agree on how cooperative learning was implemented on the five items. There was no significant difference in the opinions of teachers and students on: students hate cooperative learning, students are resistant to working in cooperative groups, traditional methods should be abandoned in favour of cooperative learning. Hence, the

students and teachers agreed on these three items on cooperative learning (Table 6).

The disagreement between teachers and students over the 5 points in Table 6 results from inadequate knowledge and skills on cooperative learning. The findings reiterate the need for training of both groups of respondents on the subject.

Conclusion

Both teachers and students of MoHNEI in Bamenda agreed that cooperative learning was occasionally used in the teaching-learning process. Learning together, think-pair-share, group investigation, and peer instruction were the methods often used. Methods such as jigsaw, STAD, and TGT were rarely practiced. Considering perceived achievements, both teachers and students affirmed the achievements of cooperative learning in the teaching-learning process. On the other hand, cooperative learning was found to have almost no disadvantage. The use of cooperative learning was observed to improve students' achievement. Both groups of respondents indicated their love for cooperative learning and willingness to participate in it. Even though the two groups of participants expressed their love for cooperative learning, both groups did not really agree on how it is implemented. Within the perspectives of this study, it was observed that cooperative learning existed as an informal technique of education in Bamenda-Cameroon. There is, therefore, need to vulgarise this technique formal in MoHNEI in the setting.

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