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THE IMPACT OF COLLABORATIVE TEACHING ON STUDENTS' PERFORMANCE IN HIGHER EDUCATION INSTITUTIONS

A Dissertation Submitted and defended on the 9th of March 2023 of the Requirements for the Award of a Master's Degree in Education

Option**: Curriculum and evaluation**

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the University of Yaounde I, a Dissertation entitled: **"The Impact of Collaborative Teaching on Students Performance in Higher Education Institutions"**, in partial fulfilment of the requirements for the award of a Master's Degree in Curriculum Development and Evaluation from the University of Yaounde I.

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DECLARATION

I, **AFANWI Ethelbert MUGRI**, do hereby declare that this Dissertation is my original work and that it has not been submitted and will not be submitted for any academic award in any other Universities for a similar or any other degree award.

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Signature

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Date

DEDICATION

To

my Lovely Mother

Mme BIH NEBA Pamela

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ABSTRACT

The study sought the impact of Collaborative teaching on students performance in Higher Education Institutions. The study was guided by four research questions and hypotheses. The researcher employed the use of the descriptive survey research design frequency, percentage, mean and standard deviation. Data was collected using Likert Scale; strongly agree, Agree, Disagree and Strongly Disagree. A sample size of 326 respondents were chosen from 5 state Universities in Cameroon using the Krejcie and Morgan table (1970) to determine the sample size. A self-administered and online questionnaire was used to collect information from respondents. The collected data were analyzed by Statistical Product Service Solution (SPSS). Correlation, coefficient and ANOVA was used to test the various hypotheses and to show the relationship between collaborative teaching and Students performance. Regression was also used in the case of brainstorming to predict its level of significance students' performance. The finding of the study revealed collaborative teaching has positive contribution on Students Performance. The study established a positive relationship between collaborative teaching and students' performance. Collaborative teaching will increase students' performance if well used.

Keywords: Collaborative Teaching, Teachers Teamwork, Brainstorming, Students' performance.

RESUME

L'étude a examiné l'impact de L'enseignement Collaboratif sur la Performance des Etudiants dans les Etablissements D'enseignements Supérieur. L'étude a été guidée par quatre questions de recherche et hypothèses. Le chercheur a utilisé la fréquence, le pourcentage, la moyenne et l'écart-type de la conception de la recherche par enquête descriptive. Les données ont été recueillies à l'aide de l'échelle de Likert ; Tout à fait d'accord, D'accord, en désaccord et fortement en désaccord. Un échantillon de 326 répondants a été choisi parmi 5 universités d'État au Cameroun en utilisant le tableau krejcie et Morgan (1970) pour déterminer la taille de l'échantillon. Un questionnaire auto-administré et en ligne a été utilisé pour recueillir des renseignements auprès des répondants. Les données recueillies ont été analysées par Statistical Product Service Solution (SPSS). La corrélation, le coefficient et l'ANOVA ont été utilisés pour tester les différentes hypothèses et pour montrer la relation entre l'enseignement collaboratif et la performance des étudiants. La régression a également été utilisée dans le cas du brainstorming pour prédire son niveau de signification de la performance des élèves. L'étude a établi une relation positive entre l'enseignement collaboratif et la performance des étudiants. L'enseignement collaboratif augmentera la performance des élèves s'il est bien utilisé.

Mots-clés : Enseignement collaboratif, Travail pédagogie, Brainstorming, Performance des élèves.

LIST OF ABREVIATIONS AND ACRONYMS

CTL: Collaborative Teaching and learning

DV: Dependent Variable

Ho1: Null Hypotheses 1

Ho2: Null Hypotheses 2

Ho3: Null Hypotheses 3

Ho4: Null Hypotheses 4

IV: Independent Variable

LBA: Learner Based Approach

LCA: Learner-Centered Approach

OBA: Objective Based Approach

RQ1: Research Question 1

RQ2: Research Question 2

RQ3: Research Question 3

RQ4: Research Question 4

SBA: Student Based Approach

SCED: Science of Education

SDG: Sustainable Development Goal

SO1 : Specific Objective 1

SO2: Specific Objective 2

SO3: Specific Objective 3

SO4: Specific Objective 4

SP: Students Performance

U.Dla: University of Douala

UB: University of Buea

UBa: University of Bamenda

UNESCO: United Nations Education, Scientific and Cultural Organization

UYI: University of Yaounde I

UYII: University of Yaounde II

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CHAPTER ONE: INTRODUCTION

Higher Education worldwide has been challenged to respond to demands placed on the sector by modern imperatives like Globalization and massification of education due to influx of the people aiming to advance their educational portfolio (Healey et al., 2014). Most recently the Covid 19 pandemic, which has greatly affected the sector in a fast-changing world and society where education has become an issue of collective concern, development and sustainability, many world nations through education hope to change and transform their societies into interactive and cohesive ones (Kapur, 2019). As such, many education stakeholders and policy makers now turn to methods or strategies and follow curricular trends that focused on sustainable education, peace and social cohesion. In a way to achieving these goals, visions and curricular reforms to transform the human society has been put in place with renewed zeal to move the agenda of education forward.

Collaborative Learning is often linked to the term cooperative learning. The idea of collaborative learning involves two or more individuals working together to accomplish a task or produce a product in a particular way (Gunter et al., 2007). Lev Vygotsky's (1962) social theories promoted collaborative learning. He argued that learning stems from the exchange of ideas and interactions. The collaborative practices movement began to surface recently in schools because of the Efforts were made to address the learning needs of students with disabilities through special education and general education collaborative practices. Debates about inclusion appeared in the 1980s through the 1990s and served as a motivating factor of teacher collaboration (Pugach, Blanton, and Correa, 2011).

The integrated approach compelled both general and special education teachers to work cooperatively with one another for the purpose of providing students with disabilities a quality education in the least restrictive environment. The value in collaboration evolved in settings from just focusing on students with disabilities, to focusing on providing all students with engaging and innovative learning opportunities. Recent research has also suggested that teacher collaboration has positive outcomes for teachers and students. (Goddard and Goddard, 2010) discovered from their research that teachers reported improved attitudes towards teaching, teacher efficacy, and understanding of student learning. Teachers discussed having a shared sense of responsibility (Williams, 2010).

Engaging learners and teachers concurrently is arguably one of the most important issues facing higher education in the 21st century (Healey et al., 2014). It is important to reflect and distill the current context, underlying factors, and principles for future work on Collaborative Teaching. This term, broadly defined by (Smith and MacGregor1992) as the cooperative use of various approaches in education by teachers and students, has long been associated with a low-threat and comfortable learning environment for students (Pattanpichet, 2011).

Collaborative teaching frameworks have been developed and discussed in various papers over time. (Häkkinen et al. 2017) broadly construct collaborative teaching as the use of social skills and the commitment to coordinated work with co-learners, and further breaks it down to 1) collaborating to learn; 2) learning to collaborate, and 3) learning to teach whilst applying collaborative learning approaches.

On the other hand, (Vygotsky 1978), in one of the initial iterations of Collaborative teaching, defined it as a construct of social constructivism, where he emphasized "the collaborative nature of learning by the construction of knowledge through social negotiation". A more modern definition of collaborative teaching involves teachers working as teams to discuss and problematize real-life situations. To illustrate this, the instructor or tutor start by engaging in understanding and mastering the processes linked to the intended learning outcomes in order to succeed in authentic contexts as well as from the education perspective (Schalkwyk, 2015).

Collaborative teaching which commonly takes the form of group work in our Cameroonian schools and classrooms is a successful teaching strategy where in teachers of different level of abilities are put in small groups to work on assigned tasks in order to foster understanding of the subject (Stephen, 1992)".

UNESCO (1996) says quality education enhances the development of all attributes and skills of people so that they can achieve their potentials as human beings and members of the society. This means education is the base of both personal and community developments. Quality in education empowers citizens and helps them contribute their maximum to social and economic development of their communities. Hence, quality education should be able to lay the foundation for change and equally maintain the quality now. A democratic and collaborative setting is essential for real life. This is because it enables learners and teachers to acquire knowledge and

social skills that are necessary for interaction both in the classroom and in their environment out of the classroom setting.

Despite the fact that the curriculum is well organized and filled with numerous experiences (Leke, 2012), it cannot be materialized if there are no prominent or projecting and noble teaching methods in the pedagogic process. Given that the world's needs are evolving, so the teaching approaches is moving from the traditional content based or objective base approach (focusing on coverage of the content), to competent based approach (paying due attention to mastery of skills).

In Cameroon, particularly massification of higher education has led to the rapid expansion in the sector with the promise of quality output (Makoge, 2017). An investigation of these higher education communities may provide a description to what extent professional teachers collaborate which has an impact on the performances of students. In as much as more has been written concerning teachers collaboration especially in the mainstream education system, little or nothing has been found on how we can promote these teaching methods in the Cameroon context. Therefore, the objective of this dissertation is to investigate to what extent the different teaching methods in teachers collaboration affect the learners positively or negatively in order to better promote these methods in our higher education institutions. As a researcher in curricula and evaluation, the researcher has as objective to improve on the pedagogic practices in Cameroon higher education institutions.

The quality of didactics can influence the quality of education. This is a theory concerned with social practices geared towards design, implementation and evaluation of teaching and learning programs (Camilloni, 2007). It is equally concerned with designing teaching and learning situations and the orientation and support of students learning; 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, 2007), as such if well planned learners performances will be improved as well as the quality of education.

As far as education is concern, a variety of researches have been performed or carried out in various domains involving collaborative teaching and students' performance for decades. This has acted as a stimulus to find out which teaching method is best suitable for students in higher education institutions and how they perform when exposed to these different methods. This chapter

will emphasize on background, statement of problem, purpose of the study, research questions, and significance of the study and operational definition of terms.

Background of study

The concept of collaboration has long existed through human history as expressed through the African proverbs like "one hand cannot tie a bundle" "two heads are better than one". This only implies that collaboration has long been existing. The idea that a single hand cannot tie a bundle or that two heads are better than one, gives us the impression that results or outputs are best when handled by more than one persons, for individuals do cheap in their various contributions to better the situation at hand. Moreover, collaboration characterizes the life style of Africans to whom Communal life style has always been their ways of living.

Collaborative teaching can be traced as far back as the 18th century when it was being used by Joseph Lancaster and Andrew Bell as a teaching and instructional method for English. Equally (Johnson and Holubec 1994, Johnson et al., 1998) say, Collaborative teaching was introduced in the United States through the opening of a Lancastrian in New York in 1806. In the early 19th century, the use of collaborative teaching in classrooms was seen to promote educational goals, which consist of the Americanization of the different student boys as well as effectively teaching a mixed grade class. Later in the 19 century, proponents of cooperating learning such as Colonel Francis Parker came up; he suggested a link between cooperative learning and democratic education, he equally advocated that cooperative learning be used in public schools. American education was greatly influenced through his method of structuring cooperative groups. In the 20th century Dewey developed parker's link between cooperative learning and democracy and made cooperative learning to be implemented and used in schools through his project method of instruction Dewey (1924). To Dewey, a democratic and cooperative setting was essential for real life.

According to (Jacobs et al., 2000) Collaborative teaching dates as far back as 100 years even though little or no research was carried out on it until 1960 to contemporary day that much importance has been accorded to it based on the many studies carried on it. Moreover, Philosophers and psychologists in the 1930s and 40's like John Dewey, Kurt Lewin, and Morton Deuts equally played a great role in influencing the use of Collaborative teaching and learning in today's society. To this, Dewey believed that it was very important for the learners to acquire knowledge and social

skills which they can use out of the classroom room as well as in their environment in their environment.

History equally holds that Prior to World War 2, (Allport et al., 1932) established Collaborative teaching and learning when they discovered that learners output was more efficient and effective in terms of quantity and quality when they worked in groups as compared to the overall productivity of those who work individually. It was not until 1937 that May and Doob found out that those who work together to achieve share goals, were more successful in the outcome than those who work individually or strive independently (May and Doob, 1937). Psychologists and sociologist such as Deutsch and Lewins equally contributed towards cooperative learning. Deutsch's contribution to cooperative learning was that of positive social interdependence, the idea that the student is responsible for contributing to group knowledge (Deutsch, 1962).

In addition to the above, (Montagu, 1965) says in the mid-1960, Collaborative teaching and learning was not widely known; it was greatly ignored by educators; that which was commonly used in elementary, secondary as well as the universities was competitive and individualistic learning. Cultural resistance to Collaborative teaching and learning was based on social Darwinism, with its premise that students must be taught to survive in a "dog-eat-dog" world, and the myth of "rugged individualism" underlying the use of individualistic learning. Thus competition dominated educational and was challenged by B.F Skinner's work on individualist learning, programmed learning, and behaviour modification. However, with the changes in educational thoughts and practices, Collaborative teaching is gaining acceptance and preferred as an instructional procedure at all levels of education, in every subject area and age group.

In this age of high accountability, and high-stakes testing, extensive pressure is placed on the classroom teacher. Under pressure from shrinking budgets and government demands for accountability, today's school administrator needs compelling data which reflects that every program in the school has a positive impact on student learning (Lange et al. 2003). Teaching and learning in a modern classroom is no longer an act of transferring knowledge. The act of teaching has become a multidisciplinary enterprise to develop critical thinking, interaction, and collaboration among both teachers and learners (Nelson, 1994). Given these multidisciplinary

changes in curriculum and its relative learning objectives, the need to collaborate in order to create learning environments has gained momentum in this decade or so.

In the higher education sector collaboration among teachers, seem to be a less effective medium of educating the students because at times teachers whom are in charge of the same course tend to collaborate less (Nelson, 1994). Each individual taking a different approach, which may sometimes be, different from that of his/her colleague whom are both in charge of the course at times proves problematic as students may get confused or derailed in the process. It is therefore imperative to investigate to what extent collaboration impacts their effectiveness in delivering lectures that will reflect in the results of their students' performance

In order for people to participate meaningfully in Collaboration, there is the need to equip them with necessary lifelong or process skills such as communication, team skills, tolerance, decision making as well as leadership skills (Nwafor, 2012).

Statement of the research problem

Students' Performance is an important focus for this inquiry, specifically, how collaborative teaching in higher education institutions impact students' performance. During the course of the research, the researcher observed that the government of Cameroon has made several commitments towards promoting education, which is fully expressed through her goals on sustainable development, which puts competence building at the front of education in Cameroon at all levels (Education and Training Sector Strategy Paper, 2013-2020). Over the last decades, Cameroon has embarked on major curricular and pedagogic reforms with the educational system to meet the changing times. However, in most cases the laws are made without taking into consideration the training capacities of the teachers, infrastructures, classroom sizes in relation to the student/teacher ratio and most importantly instructional materials and resources (Teachers Union in their ETUCE Publication Quality in Education, 2002). As it has been noticed, not all methods of teaching build skills, aptitude and values in the learner's lifelong studies. Currently, research exists on teacher collaboration benefits, challenges, and the roles of educators in the collaboration process as they work with each other and students. Effective teacher collaboration occurs when a group works together, experiments with new procedures, and establishes the work that is critical to students' performance improvement (Camilloni, 2007). It is therefore important to see if the existing educational curriculum is able to respond to the changing context and growth

of learners especially if the methods used in transmitting knowledge, skills and aptitude are worth noted. Equally, to see if the methods of transmitting this knowledge suit the context, if the teachers are well trained to meet up this expectation. Thus, giving reasons for a more specific and productive method of teaching that will suit them during learning. Therefore, the researcher still thought whether or not teachers' teamwork, brainstorming, teachers mentoring and teacher's communication has an impact on students' performance. Thus, the research topic: The Impact of Collaborative Teaching on Students' Performance in Higher Education Institutions.

Objectives of the study

This section is sub-divided into the general and the specific objectives.

General research objective

To access the different collaborative teaching methods used by teachers and their impacts on students' performance in in higher education institutions in Cameroon

Specific objectives

The study is aimed at;

SO1: To verify the effect of Teachers teamwork on the student performance s in higher education institutions.

SO2: To examine the influences of Brainstorming on students' performance in higher education institutions in higher education institutions.

SO3: To ascertain the influence of teachers mentoring on students' performance in higher education institutions.

SO4: To verify the effect of teachers' communication on students' performance in higher education institutions.

Research question

These questions state the relationship that exists between variables (independent and dependent variables) and in most cases reflect the objectives of the study. The research generally sets out to answer the following questions:

Main research question

This is the questioning of the theme under study and it states that:

To what extent does collaborative teaching methods in higher education institutions impact students' performance?

Specific research questions

The specific research questions were derived from the general research questions using the content analysis method. The main questions are based on collaborative teaching methods from which aspects such as Teachers teamwork, brainstorming, teachers mentoring and teacher communication were obtained.

RQ1: To What extent does Teachers teamwork influence students' performance in higher education institutions?

RQ2: To what degree does the perception of brainstorming influence students' performance in higher education institutions?

RQ3: To what extent does teacher mentoring impact students' performance in higher education institutions?

RQ4: To what magnitude does teachers' communication influence students' performance in higher education institutions?

Hypothesis

Conceptual (general) hypotheses of the study

H0-There is no statistically significant relationship between collaborative teaching and students' performance in higher education institutions.

Specific hypothesis

H0-There is no statistically significant relationship between teachers teamwork and students' performance.

H0- There is no statistically significant link between brainstorming and students' performance.

H0- There is no statistically significant relationship between teacher mentoring and students' performance

H0-There is no statistically significant relationship between teachers communication and students' performance.

Significance of study

To the government, this study will be of a great significance in that it will enhance various avenues, methods and techniques in improving the teacher/learning process in order to augment the quality of education.

Teachers may benefit from this study as the application of its findings may result in the amelioration of the result of their students. It will also help them to be flexible enough and to know which method of teaching is to be applied following the learners. It will also help them develop their professional life.

To future researchers, especially those whose focus is on teaching methods and collaborative teaching, this study will be beneficial to them especially to those in the faculty of education. This will help them to comprehend what brainstorming, Teachers teamwork, teachers' communication, teacher mentoring and resources available to teachers is about.

This action research may contribute to knowledge and reader's knowledge about how teachers in work in collaborative group settings. The study will also add to existing literature and information on this topic

Delimitations of study

To delimit a research work, the researcher specifies the restrictions and the limitations he imposes on the study (Amin, 2005). This simply means that the scope is aimed at defining the boundaries

This study on the impacts of collaborative teaching on students' performance in higher education institutions. A representative of some selected State Universities was used for our findings. These findings were based on questionnaire and Observation carried out mostly on the accessible population of the research**.**

This research falls in the domain of psycho-pedagogy because it deals with the teaching methods, strategies and techniques in the teaching/learning process. It is within a precise framework as it is a write-up that upon defense gives way to obtaining of a master's degree in education**.**

Only state owned higher education institutions in Cameroon were sampled therefore the results may not be generalized to other countries

The study focuses only on students and teachers of higher education institutions and cannot apply to students and teachers in other levels of education

The study is being limited due to the time of the year it was carried out which consequently did not involve extensive observations of group meetings.

Operational definition of terms

It is always important to give the denotation meaning of the concepts through the definition of that same concept by other authors to the contextual definition as used in this study. The concepts in this study to be defined consist of Collaborative teaching and teaching method and any other concept used in this research work.

Collaborative Teaching

Collaborative teaching is a system that can be highly effective if used strategically and vigilantly. One of the most important components for setting up a collaborative teaching system is teacher personality and beliefs. Pairing teachers based off on skill level, experience, and competence is no longer enough to ensure the model is effective and efficient. Both educators who will be teaching with one another must share the same beliefs towards not only the process, but towards each other's collaborative work in separating the responsibility in the classroom equally so both take ownership of the work to whom they must commit. After the pairing process of teachers in collaborative teaching takes place, it is highly essential for those respective teachers to receive adequate and rigorous preparation and professional development to ensure that both teachers understand their respective roles and responsibilities before, during, and after instruction.

Collaborative teaching is used with increasing frequency in many educational systems and is often seen as an appropriate response to the challenges of individualized schooling in heterogeneous groups (Kliegl and Weaver 2014; Liston, Moolenaar, Sleegers, and Daly 2012).

Teachers Effectiveness

Teachers Effectiveness has been a matter of concern not only for the parents and students but also for the policy makers, researchers, and educationists. Drawing from the "self-efficacy" theory (Bandura, 1977).

There is a paucity of research on what constitutes effective and meaningful professional development. (Bull and Buechler, 1997) and (Desimone, 2009) have outlined effective professional development qualities. These qualities include: (a) be individualized and school based, (b) utilizes coaching and other follow up procedures, (c) engages in collaboration, and (d) embeds practices into the daily lives of teachers.

Collaborative Models

There are several collaborative models among which education organizations may Choose. Whatever collaborative model is used, school leaders must have established a comprehensive collaborative plan ideally, in cooperation with the teachers that aligns with the culture of the school, Country and the needs of the teachers and students

(McCarthy, Brennan, and Vecchiarello, 2011) suggested these steps for fostering a collaborative relationship: 1) Defining roles and responsibilities; 2) Establishing a shared vision; 3) Establishing a collaborative strategic plan; 4) Assess and adjust the plan. Collaborative learning facilitates intrinsic learning from its participants (Williams, 2010). (Brodesky, Gross, Tigueand and Palmer's, 2007) collaborative model for teachers fostered problem solving through 1) Deepening the understanding of both content and students; 2) Aligning strategies with students' needs and content goals; 3) Implementing strategies with students and then reflect on their effectiveness; 4) Collaborating and planning lesson and assessments.

Brainstorming

The term Brainstorming is used and popularized by Alex Faickney Obsorn in 1953 through the book *Applied Imagination*. In this book Obsorn presented the Brainstorming method and effective rules for brainstorming session.

According to Webster's new World College Dictionary "Brainstorming is the unrestrained offering of ideas or suggestions by all members of a committee, conference, etc. in an effort to find a solution to a problem, generate fresh ideas, etc. Agnes Michael (Ed.)

Teaching methods

It is a double notion comprising of teaching and method. Teaching is the profession of educating people. According to (Schlechty, 2004), teaching is an art of inducing students to behave in ways that are assumed to lead learning, including attempts to induce students to so behave.

(Smith, 2018). Defines teaching as the process of attending to people's needs, experiences and feelings and intervening so that they learn particular things, and go beyond the given. These interventions commonly take the form of questioning, listening, explaining some phenomenon, demonstrating a skill or process, testing understanding and capacity, and facilitating learning activities (such as note taking, discussion, assignment writing, simulation and practice).

To this, we can stand that teaching is an art of transferring knowledge to the learner through the teacher-learner interaction using some activities or procedures especially in pedagogic situations to enhance learning.

Etymology, from middle French "methode", from latin "methodus", the process by which a task is completed; a way of doing something (followed by the adposition of, to or for before the purpose of the process). Method is a manner or mode of procedure, especially an orderly, logical, or systematic way of instruction, inquiry, investigation, experiment, presentation etc.

According to (Hoque 2016), teaching method refers to the general principles, pedagogy and management strategies used for classroom instructions.

Teaching methods to (kistner 2015) refers to "the structure, system, strategies, techniques, procedures and processes that a teacher employs during instruction".

Teachers Teamwork, (group work)

(Yasemin Gödek**,** 2016). Group work is one of the teaching strategies used by teachers who attempt to make their teaching more effective while Collaborative work is an important aspect of group work.

In addition, as stipulated by (Rance-Roney, 2010) who describes group work as a classroom practice where "students work in teams to construct knowledge and accomplish tasks through collaborative interaction." Sometimes teachers use groups to work on short activities in an informal way.

Collaborative teaching is an educational approach to teaching that involves groups of teachers working together to solve a problem, complete a task or create a product (Marjan Laal, 2012).

According to the above definition the research understood that Teachers Teamwork is simply defined as more than one Teacher working together to complete a task or assignment or program.

CHAPTER TWO: LITERATURE REVIEW

Collaborative teaching and Students' performance is not really a new area of study in research (Anyi, 2019), so in this part of the research work. I will be looking at what other authors have written in relation to collaborative teaching and others, such as brainstorming, Teacher mentoring, Teacher teamwork and teachers communication Then go further to elaborate theories related to this study. As concern the literature review, the thematic method has been used which was derived from the content analysis approach. This chapter is presented in two sections; the first section consists of the reviews on related literature and the second section consist the major theories. The literature review in this chapter covers various aspects of collaborative teaching and students' performance on different studies carried out by different researchers and major theories such as The Social Learning Development by lev Vygotsky, The Social Interdependence Theory 1945 by lewins, The Socio cognitive learning theory (1982), The educational experience theory and The social constructivism theory by lev Vygotsky 1962

Collaborative teaching fosters teachers and learner's engagement in the teaching and learning process. Talking about engagement, (Anyi, 2019) says engagement is a terminology with inconsistent meaning based on the various definitions put forward by different authors. Notwithstanding, some definition contrast the positive outcome of engagement, with the negative results of disengagement as seen in Ogbu (2009) and (Anyi, 2019) To the above authors, most of the definitions concerning students engagement has to do with the exhibition of positive conduct, efforts and participation as cited by (Mark, 200: Williams, 2003) in (Anyi, 2019). Implying that Collaborative teaching is a kind of teaching method that enhances teachers and learners' engagement as the learners work to accomplish group goals; through interaction, positive conducts are encouraged.

CONCEPTUAL AND EMPIRICAL REVIEW

This section present, examines, and discusses the writings, views of diverse authors and publications with respect to Collaborative Teaching and Students performance. Collaborative teaching is examined from the perspectives types, purposes, its influences and challenges in its implementation. These concepts are considered preliminary because they give an understanding to the concept and work to be discussed in proceeding chapters**.**

Brainstorming

Creativity is not born on its own. Brainstorming was used more than 60 years ago in the effort to help group generate ideas. Osborn's aim was not purely the generation of thoughts or ideas, but to inspire everyone to better apply their imagination to challenges and opportunities. Einstein again, provides importance for imagination in that brainstorming is useful to solve managerial problems raised by improvement and variations of technological changes. It also helps in research to find out solution. He brought forth some steps which needs to be applied in a brainstorming session as follows;

- Select the group,
- Define the roles,
- Explain the rules,
- Start the discussion,
- Record the ideas,
- Encourage the Ideas and lastly,
- End on the wild ideas.

Undeniably, brainstorming is a creative problem-solving tool to be use by every one for solving their problem. (Kumbhar, 2018). (Wilson, 2020) presented ten effective team-brainstorming techniques, which are;

- Brain writing,
- Rapid ideation.
- Figure storming,
- eidetic image method,
- online brainstorming aka brain netting,
    - Round-robin brainstorming,
    - Stepladder technique,
    - Mind mapping,
    - Star bursting, and
    - Change of scenery.

Brainstorming typically has three steps: idea capture, discussion and critique, and selection. Brainstorm means using the brain to storm a creative problem and to do so in commando fashion, with each stormier audaciously attacking the same objective. Brainstorming is a group activity to generate a large number of ideas in order to find out the solution of a problem. It is very useful technique in all fields like business, industry, social organizations, education, Politics etc. (Raj1 & Saxena, 2015).

(Unin and Bearing, 2016) conducted a study on Brainstorming as a way to approach student-centered learning in ESL classroom. The purpose of the study was to explore the brainstorming activities used and how brainstorming was employed to promote SCL (student centered learning). The sample consisted of 164 male and 157 female students. The data were collected through questionnaires, interview schedules and classroom observations during the brainstorming sessions. The findings were obtained as follows:

(i) Brainstorming activities using words lists, words mapping and pictures were generally utilized in the speaking tasks and

(ii) Brainstorming contributed to increase in students‟ motivation, confidence and participation as reflected by the positive behavior of the students during classroom observations.

(Zarif and Matten, 2013) studied the role of using Brainstorming on student learning outcomes during teaching at middle level. Sample was consisted of 25 students of a middle school. They reported that Brainstorming was helpful for improving learning outcomes at middle level.

(SIM and POP, 2012) explained the mind mapping and brainstorming as methods of teaching business concepts in English as a foreign language. The investigators suggested that these two techniques have a wide range of usage: from reading books and figuring out main ideas and concepts, to business meeting, planning compositions, sorting out family problems, expanding a topic to be studied.

(Maitah et al., 2011) accomplished the study to reveal the effectiveness of the training program that was based on the effectiveness to teach the introduction to the special education course to the students in the department of educational sciences in the middle University

faculties to develop the critical thinking. The sample consisted of 70 students divided into two groups, experimental group that included 35 students had learned using brainstorming and a control group consisting of 35 students learned in the usual way. The results as obtained by the researchers attributed that the brainstorming method required learners to call their previous experiences and conducted different mental skills and intellect, as knowledge acquisition skills, social skills and organizational skills, administrative and collaborative activities. All of which earn students who were learning a different analytical skills, particularly critical thinking, while there was no opportunities to those who learned by the usual way. Questionnaires, Interviews and observation schedule were used for data collection.

Randomized block (RB) design was used in this study. Each block (group) comprises of 6 subjects (individuals) and each block was subjected to three different types of treatments (minimal instructions, Brainstorming and debate conditions) and each treatment appeared equal number of times in each block. However, Debate conditions stimulated the groups significantly to generate more number of ideas, including new ideas (group creativity) than did under Minimal instructions condition. Further, he reported that Creativity can be encouraged within work groups through autonomy in the work, encouragement of creativity, mutual openness to ideas, constructive challenge to new ideas, and shared goals and commitments.

(Litchfield, 2009) conducted an experimental study by treating brainstorming rules as assigned goals and compared their effectiveness to that of quantity goals as interventions to improve the number of ideas generated by individuals controlling for goal commitment. The researcher found that brainstorming rules alone did not convey an advantage over even a vague quantity goal presented alone for enhancing the number of ideas generated in two common tasks. The researcher revealed that specific, difficult goals were only partially effective on their own, as expected when goal commitment was moderate and reported that brainstorming rules improve ideas quantity only when these combined with a specific, difficult quantity goal.

Some previous studies in the discipline of education have suggested that BS interventions can facilitate the idea-generation process by ensuring the selection of the most appropriate

combinations of ideas. Various Brainstorming (BS) techniques have been proposed specifically to develop individuals' creativity and productivity during idea-generation sessions. Nevertheless, the available knowledge about the potential of certain BS techniques seems very limited in higher education. Thus, a review of previous studies on some BS types such as the traditional brainstorming (TBS), nominal brainstorming (NBS), and electronic brainstorming (EBS) was conducted. Finally, when all these BS techniques are combined, more quality idea perception, quality idea satisfaction, and high performance will be recorded. (Al-Samarraie and Hurmuzan, 2018).

According to UNICEF, Brainstorming is a quick and easy way to generate novel ideas for problem solving and innovation. As the name suggests, Brainstorming is meant to stimulate or excite the brain into thinking about issues in a new way. It encourages people to arrest conventional, logical thinking and embrace spontaneity, originality, and imagination.

Table 2.1: How to carry out brainstorming in class

Objectives	**Preliminary steps**	**Leading the discussion or debate**
-Compile the original ideas to feed the discussion or respond to a question -Encourage spontaneity	- Inform the students that you want to collect as many ideas as possible from them. - Give the following instructions • Be spontaneous (avoid evaluating them with others) • Be receptive to the comment of others. Don't contradict or mock others • Add new ideas to those given by others	- Clearly formulate a question and repeat it if necessary. - Take down, all contributions - If the exercise seems to lag, restate the question to stimulate new responses - At the end of the brainstorming exercise summaries the information and give a general response/answer

Source: MINESEC: Inspectorate of pedagogy for the social sciences (syllabus, 2014)

Table 2.2: Dealing with difficulties in carrying out brainstorming in class

Difficulties	Remediation
The Students answers are unrelated to the topic - The students lack knowledge of the topic and therefore reluctant to share ideas	- Redefine the topic more clearly before resuming - Provide same guiding responses to stimulate reflection and participation.

Source: MINESEC: Inspectorate of pedagogy for the social sciences (syllabus, 2014)

Teachers effectiveness

Teachers Effectiveness has been a matter of concern not only for the parents and students but also for the policy makers, researchers, and educationists. Drawing from the "self-efficacy" theory (Bandura, 1977).

There is a paucity of research on what constitutes effective and meaningful professional development. (Bull and Buechler 1997) and (Desimone, 2009) have outlined effective professional development qualities. These qualities include: (a) be individualized and school based, (b) utilizes coaching and other follow up procedures, (c) engages in collaboration, and (d) embeds practices into the daily lives of teachers.

Some researchers perceive teacher efficacy as a benefit of teacher teamwork. Collaboration allows teachers to use a collection of ideas, strategies and experiences in their individual classrooms. Williams (2010) stated that collaboration builds self-efficacy by allowing teachers to exert competency of their professional lives. Self-efficacy is defined as belief in one's capabilities to implement a course of action and manage situations (Bandura, 1995). Effective teacher collaboration allows teachers to reflect on their instructional practices and become more confident in their professional abilities (Williams, 2010).

Collaborative techniques

Collaborative teaching and learning exists when students work together to accomplish shared learning goals. Each student can then achieve his or her learning goal if and only if the other group members achieve theirs. In the past three decades, modern cooperative learning has become a widely used instructional procedure in preschool through graduate school levels, in all subject

areas, in all aspects of instruction and learning, in nontraditional as well as traditional learning situations, and even in after-school and non-school educational programs (Harati, 2012)..

There is broad dissemination of cooperative learning through teacher preparation programs, in-service professional development, and practitioner publications. The use of cooperative learning so pervades education that it is difficult to find textbooks on instructional methods, teachers' journals, or instructional materials that do not mention and utilize it. While a variety of different ways of operationalizing cooperative learning have been implemented in schools and colleges, there has been no comprehensive review of the research evidence validating the cooperative learning methods. The purpose of this review, therefore, is to examine the empirical support validating the effectiveness of the different methods of cooperative learning. In order to do so, it is first helpful to discuss why cooperative learning is so widely used (Harati, 2012).

The wide spread use of cooperative learning is due to multiple factors. Three of the most important are that cooperative learning is clearly based on theory, validated by research, and operationalized into clear procedures educators can use. In psychology, where cooperation has received the most intense study, cooperative learning has its roots in social interdependence, cognitive-developmental, and behavioral learning theories. It is rare that an instructional procedure is central to such a wide range of social science theories. Cooperative learning is more elaborate than group work activity (Harati, 2012).

Cooperative learning can be incorporated into your classroom management system. If you train your students to work effectively in groups, the results can be a very productive and fun learning environment. The research on cooperative efforts, furthermore, has unusual breath, that is, it has focused on a wide variety of diverse outcomes. Over the past 100 years researchers have focused on such diverse outcomes as achievement, higher-level reasoning, retention, time on task, transfer of learning, achievement motivation, intrinsic motivation, continuing motivation, social and cognitive development, moral reasoning, perspective-taking, interpersonal attraction, social support, friendships, reduction of stereotypes and prejudice, valuing differences, psychological health, self-esteem, social competencies, internalization of values, the quality of the learning environment, and many other outcomes (Harati, 2012)..

There may be no other instructional strategy that simultaneously achieves such diverse outcomes. The diverse and positive outcomes that simultaneously result from cooperative efforts have sparked numerous research studies on cooperative learning focused on preventing and treating a wide variety of social problems such as diversity (racism, sexism, inclusion of handicapped), antisocial behavior (delinquency, drug abuse, bullying, violence, incivility), lack of prosocial values and egocentrism, alienation and loneliness, psychological pathology, low self-esteem, and many more. For preventing and alleviating many of the social problems related to children, adolescents, and young adults, cooperative learning is the instructional method of choice (Harati, 2012).

Benefits of Collaboration

A review of several related literatures suggests that teacher collaboration may, in fact, enhance learning for both teachers and students (Williams, 2010). When teachers have opportunities to collaborate professionally, they build upon their distinctive experiences, pedagogies, and content (Goddard and Goddard, 2007). (Pounder, 1998) concluded that teachers who work on teams report a greater skill variety and knowledge of student performance, which, in turn, improves student outcomes. A study conducted by (Goddard and Goddard, 2007) found that 47 schools in a large urban school district were positively influenced by teacher collaboration. This study provided evidence of a direct link between teacher collaboration for school improvement and student achievement. Another study by (Goddard, et al, 2010) found a direct effect of instructional leadership in teacher collaboration on teacher and student learning.

Collaboration amongst teachers can be formal or informal. For instance, inclusion requires general education teachers to work collaboratively with special education teachers to provide specified learning accommodations for students with disabilities. Some departmentalized teachers work on teams to integrate the curriculum for students. Many schools have also developed support teams for teachers to identify and address students' learning needs. Teacher collaboration can even be demonstrated when teachers are discussing lesson strategies or student's needs during planning time. Many opportunities are available for teacher collaboration; yet, it is one of the least researched areas within the education field. (Goddard and Goddard 2007) claimed that their study on teacher collaboration and student achievement was the first study to empirically link the two

variables. For the purpose of this study, teacher collaboration is investigated in relation to students' performance.

Challenges with Teachers Teamwork (group work)

One of the biggest challenges to teacher Teamwork is time. Scheduling and time allotted for formal collaboration are restricted. The schools' leaders have the responsibility to work cooperatively with teachers to maximize collective expertise (Goddard, Goddard & Miller, 2010).

As mentioned in this study, school leaders are key to successful implementation of collaborative models. When school leaders model how to prioritize collaboration, it is more likely to take place. There are also inherent challenges with Teamwork. Take for instance the various personalities, perspectives, and beliefs that teachers bring to the table. These diverse elements can create a negative social interdependence within the school if not managed effectively (Johnson & Johnson, 2009). Negative social interdependence results from the opposition and hindrance of individual's goals in the group (Johnson & Johnson. 2009).

Teaching method

The teaching methods (teacher-centered versus student-centered) is a very good place to start because these methods are usually seen as opposed to each other, though they can be seen as complementary. Direct instruction is used to help children acquire knowledge and action sequences (e.g. learning to write the alphabet). While Indirect instruction, which involves inquiry-based, problem-solving, and project-based learning, is used to enable children's understanding of the physical, social, and psychological world in which they live. In addition to different goals, the two methods derive from different theories about learning and employ different practices. The No Child Left behind Act of 2001 (NCLB) recognize accountability actions including annual assessment of learners in all the school subjects and in the technical areas such as sciences. The teacher centered teaching methods that do not accommodate all learners, (Habulezi, Kebotlositswe, Molao, & Mphuting 2016), are counterproductive and detrimental to learners 'performances. Teachers are assets, rich resources of information and support. Therefore, they need to be responsive, creative, accommodative and inclusive in their routine facilitation of classroom activities for the benefit of all learners.

The method or practice that a teacher chooses depends on the goal for a particular group of students. Teachers have choices not only about teaching methods but also about how they group

students for instruction. A teacher's decision about grouping is determined by a lesson's goal or objective. For example, if a lesson involves every child in the class having information that is not easily accessible and requires interpretation, the teacher will probably decide to construct a lecture followed by discussion, including questions, for the whole class. Therefore, lecture, demonstration, discussion, questioning, cooperative learning, the teacher-student and student-teacher interactive methods should be used (Sohail, 2012). Based on this assertion, (Landberg, Kruger and Swart, 2016) advise that teachers should encourage critical thinking, argumentation, reflection and action on the part of learners in the learning situation. In addition, (Rose and Meyer, 2002), brought out three principles of universal design of learning, which are multiple means of representation, multiple means of action and expression, and multiple means of engagement. They hold great potential to establish truly accessible learning environments for all that can improve learners' performance.

(Sohail, 2012), in his course outline, presented different methods of teaching to student teachers stipulating that, both the teacher-centered and students-centered methods necessitate both lower-order thinking (Students are given specific knowledge that ranges from facts to complex concepts. Whereby the knowledge is conveyed through a text, lecture, worksheet, or other direct instructional activities) and Higher-order thinking which requires students to manipulate information and ideas in ways that transform their meaning and implications and this transformation occurs when students combine facts and ideas in order to synthesize, generalize, explain, hypothesize, or arrive at some conclusion or interpretation. Therefore, each lesson starts with experience that requires lower-order thinking to assure that children have the knowledge they will use to form generalizations and solve problems.

(Åsa Hirsh, Claes Nilholm, Henrik Roman, Eva Forsberg & Daniel Sundberg, 2020) , discussed issues with relevance to the tension between contextuality and generalization, which recurrently are identified over time in research reviews of teaching methods. The 75 most cited reviews on teaching methods listed in the Web of Science from 1980 to 2017 were analyzed. Since our interest is the claims made in each article about the teaching method under study, the analysis concerned the abstract, results, discussion, conclusion, and implication parts of each review. Three main issues, cutting across the reviews over time, were identified:

1) The abundance of moderating factors,

2) The need for highly qualified teachers, and

3) The research-practice gap.

It is argued that the three issues reflect tensions in original research. The implications of these findings are discussed in the article. One main conclusion was that such issues ought to be more explicitly attended to and elaborated in both primary and secondary level research. The importance of viewing validity as a multidimensional concept, including internal, external, and ecological aspects, is underlined. Further, ideas from realistic reviewing were used to discuss a contextually bound approach to causality.

(Dignath, 2016) looks at micro teaching in terms of self-regulation learning (SRL). Self-regulation learners are those who set themselves goals plan action to pursue these goals, monitor their learning and finally evaluate their learning process. The effectiveness of microteaching depends on a teacher's competence expressed through the prediction of teachers, self-report, attitude, knowledge and self-efficiency. She insists on the fact that to promote microteaching, the teacher trainer needs to use two means;

- Directly by providing knowledge and skills (teaching learners required strategies),
- Indirectly by arranging the environment a constructive manner so that learners can show case their learning that is by providing them with situations in which they can take over responsibility for their learning. This means that microteaching requires the guidance of the teacher directly and indirectly.

(Ramesh, 2012) says it is a teaching technique that provides teacher an opportunity to perk up their teaching skills by improving the various skills hence the promotion of real-time teaching experience. To him, the core skills of microteaching such as presentation and reinforcement skills help the novice teacher to learn the art of teaching at ease and to the maximum extend. He goes on to explain the various phases of microteaching, its implementation and impact. It emphasizes on the need for using micro teaching frequently and efficiently, with minimum available resource in teaching education. In most cases, when it is used, it makes the training process and instructional experience to be attained. This way, it allows learning each skill to the maximum extent as there is a chance of listening, observing, analyzing and practicing. Regarding the phases, there are as follows:

a. knowledge acquisition phase whereby the trainer receives training on the components of teaching through lectures, illustration, demonstration, from experts
b. Interactive skill acquisition phase, characterized by feedback and setting. The teacher programs a micro lesson for practicing the demonstrated skills where valuable criticisms are made so as to enable the presenter ameliorate or modify his/her teaching,
c. Transferring phase; make use of mastered skills in normal classroom situation and integration of the different skills practiced.

(Nina Kowalczyk, 2011), conducted a systematic literature review to identify teaching methods that demonstrate a positive effect on the development of students' critical thinking skills and to identify how these teaching strategies can best translate to radiologic science educational programs. A comprehensive literature search was conducted resulting in an assessment of 59 full reports. Nineteen of the 59 reports met inclusion criteria and were reviewed based on the level of evidence presented. Inclusion criteria included studies conducted in the past 10 years on sample sizes of 20 or more individuals demonstrating use of specific teaching interventions for 5 to 36 months in postsecondary health-related educational programs. The majority of the research focused on problem-based learning (PBL) requiring standardized small-group activities. Six of the 19 studies focused on PBL and demonstrated significant differences in student critical thinking scores. In conclusion, PBL, as described in the nursing literature, is an effective teaching method that should be used in radiation science education.

Teacher Response to Collaboration

In a similar study, teachers reported a sense of shared responsibility for students learning during teacher collaboration (Williams, 2010). When teachers work collaboratively with each other, they share experiences and innovative strategies; during collaborative discussions, teachers are given a voice in curricular implementation and variety of skills to support student-learning needs.

Teacher collaboration is a systematic process that allows teachers to analyze and improve instructional practices and student learning outcomes (Williams, 2010). (Melnick and Witner, 1999) concluded from their study that teachers believed strongly in teacher collaboration and they often made time to collaborate after school hours. Professional learning opportunities for teachers encourage active involvement in the learning community.

Increased professional learning is due to the understanding that when teachers work together, they express various perspectives, experiences, and reflect on their teaching practices in an effort to increase professional growth (Williams, 2010).

Teachers' perceptions of collaboration are important. The way teachers perceive collaboration can determine its efficiency. The culture of the school usually influences teachers' collaborative attitudes and behaviors (Sawyer and Rimm-Kaufman, 2007). The school leaders play a key role in modeling the attitudes and behaviors that promote collaboration.

School Leadership and Collaboration

School leaders are responsible for initiating and implementing the school's plan. Research implies that school leaders affect teachers' practices (Goddard et al., 2010). School leaders are essential in collaboration settings. Related research suggests that school leaders have an indirect impact on student learning outcomes through initiated professional development opportunities for teachers (Goddard et al 2010 & Williams, 2010). Many school leaders are encouraged to provide professional development for teachers in response to improving the organization (Williams, 2010).

Some research has empirically linked school leaders to effective teacher collaborative practices. A study conducted by Goddard, Goddard, and Miller (2010) found a significant direct effect of instructional leadership and collaborative practices. Their study suggested that when school leaders provided instructional leadership within their schools, higher rates of teacher collaboration occurs. A study by Sawyer and Rimm-Kaufman (2007) suggested that administrators are essential in establishing a collaborative culture within the school. Administrators, in turn, model how to prioritize collaboration and actively engage in this behavior. Goddard, Goddard, and Miller (2010) studied how influential school leaders are in collaborative practices. Their study concluded that there was a significant direct effect of school leadership on teacher

Accountability in Collaboration

During effective collaborative practices, teachers are individually responsible for the goals of the group. Positive Social Interdependence theory (Johnson and Johnson, 2009) suggests that responsibility forces an increase in group member's motivation. The act of the members pulling their own weight to improve the contribution to the entire group is essential. Individual accountability should be assessed and compared to the standard of performance for the group (Johnson and Johnson, 2009). Effective collaboration produces an increase in shared and common

goals. (Williams, 2010) argued that teachers develop internal accountability first and this is later developed into external measures of accountability, such as production of work, reflective practices, and goal accomplishment.

Collaboration and Teacher Efficacy

Some researchers perceive teacher efficacy as a benefit of teacher collaboration. Collaboration allows teachers to use a collection of ideas, strategies and experiences in their individual classrooms. Williams (2010) stated that collaboration builds self-efficacy by allowing teachers to exert competency of their professional lives. Self-efficacy is defined as belief in one's capabilities to implement a course of action and manage situations (Bandura, 1995). Effective teacher collaboration allows teachers to reflect on their instructional practices and become more confident in their professional abilities (Williams, 2010).

Challenges with Collaboration

One of the biggest challenges to teacher collaboration is time. Scheduling and time allotted for formal collaboration are restricted. The schools' leaders have the responsibility to work cooperatively with teachers to maximize collective expertise (Goddard, Goddard & Miller, 2010). As mentioned previously in this study, school leaders are key to successful implementation of collaborative models. When school leaders model how to prioritize collaboration, it is more likely to take place.

There are also inherent challenges with collaboration. Take for instance the various personalities, perspectives, and beliefs that teachers bring to the table. These diverse elements can create a negative social interdependence within the school if not managed effectively (Johnson & Johnson, 2009). Negative social interdependence results from the opposition and hindrance of individual's goals in the group (Johnson & Johnson, 2009).

Impact of Teacher Collaboration on Student Achievement

Studies have also revealed that teacher collaboration positively influences student behavior. (Goddard and Goddard, 2007) empirically linked teacher collaboration for school improvement to student achievement on high-stakes assessments. (Pounder, 1998) found that schools that included teacher teams report fewer behavior issues than school without teacher teams. Lower incidences of student misbehavior provide more opportunities for all students to learn (Goddard and Goddard, 2007). With less time devoted to handling behavior problems,

teachers are able to maximize instructional time, thus enhancing student achievement. Collaboration helps teachers remain focused on the shared vision and mission of the learning community (Williams, 2010).

Consistent collaboration on professional practices results in reflective thinking, improved instructional strategies, and student achievement. Thus, collaboration helps build trusting relationships and promotes a positive learning environment, and a positive learning environment has a positive influence on student achievement (Williams, 2010).

The literature expanded on teacher collaboration and the various areas that are influenced by this behavior. Teacher collaboration is a behavior that has been explored by several researchers (Goddard & Goddard, 2007; Pounder, 1998; Williams, 2010).

This study incorporated the perspectives of teachers in regard to their learning and development. By exploring the emerging themes from the teacher responses, teacher collaboration is examined through the lens of the participants that are mostly involved in this practice, the teachers.

Influence of Informal Cooperative Learning

Using cooperative learning does not stops the teacher from lecturing, making use of video tapes, film shows as well as give demonstrations; these teaching methods can be effectively used with informal cooperative learning in which learners work together to achieve a joint learning goal in temporary ad-hoc groups, which lasts from a few minutes to one class period. Film projections as well as demonstrations could be used here to captivate learners' attention and also set a learning conducive mood, as well as set expectations as to what will be covered within a class session.

Informal cooperative learning helps teachers ensure that students do the intellectual work of organizing, explaining, summarizing, and integrating material into existing conceptual structures during direct teaching. Informal cooperative learning groups are often organized to enable students engage in a three- to five-minutes focused discussion before and after a lecture and two- to three-minutes turn-to-your-partner discussions throughout a lecture.

Influence of Cooperative Base Groups

Not all types of cooperative group temporary last for a short period of time. Cooperative base groups are long-term, heterogeneous groups with stable membership that can last even for a year or till when members graduate. Learners are provided with permanent, committed relationships that allow members to give needed support, encouragement, assistance to consistently work hard in school as well as make academic progress. Johnson et al. and (1992); Johnson et al. (1991) reiterate the fact that this long term groups enable the learners to develop cognitively and socially. Base groups meet formally each day in elementary school and twice a week in secondary school (or whenever the class meets).

Informally, members interact every day within and between classes, discussing assignments and helping each other with homework. The uses of base groups tend to improve attendance, personalize the required work and the school experience, and also improve the quality and quantity of learning. The larger the class or school, the more complex and difficult the subject matter; the more important it is to have base groups. Base groups are also helpful in structuring home room, when a teacher meets with a number of advices.

Challenges in the Implementation of Cooperative Learning

According to (Khon, 1992) and in (Makoge, 2017), teachers are reluctant in the implementation of cooperative learning in the classroom, because it poses some problems to them such as; the control channel of communication and equally its arrangement on curriculum organization. In addition to this, (Gillies, 2008) and (Makoge, 2017), says teachers may find difficulties in implementing cooperative learning in their classrooms due to the lack of understanding how the pedagogic practice works. To him, studies have shown that learners will perform better, in classes where teachers have been trained on how to establish cooperative learning activities in their curricula, and when students are given the opportunity to participate regular in these activities; unlike those in schools where teachers have not been trained.

Moreover, (Gillies, 2008) and (Makoge, 2017), says one of the challenges of cooperative learning is it reliance on positive group dynamic to function at its highest efficiency, conflicts amongst group members will always affect their ability to work together, especially if members

are still young and have no conflict resolution skills. Equally mismatch personalities can also lead to unsatisfactory cooperative learning even when there is no conflict. What is more, cooperative learning can bring uneven workloads and evaluation because at times, more advanced learners do take up the project for the sake of trying to finished up in time rather than helping the slow learners. What is more, indolent students might deliberately abandoned work to the advanced learners and other group members.

Weaknesses of Cooperative Learning

According to Kagan (1999) in Makoge (2017), despite the non-exhaustive list of strengths, cooperative learning has some short comings that hinder its application in many situations. However, some of these weaknesses may be overcome with proper planning and preparation. Here are some of the weaknesses he advanced:

- Lack of proper instructions and guidance may lead to unsocial behaviours like all members talking at the same time, some members not participating, some members trying to dominate others as well as imposing their views or some members can be ignored.
- Lack of supervision may lead to lots of noise making and unnecessary discussion rather than the topic to be learnt, which will only make cooperative a waste of time.
- A learner who did his share of work honestly and would deserve a very good grade otherwise may be under graded for work not done by others in the group.
- Bad experience working in a group may leave a bad impression about team work on students and this may negatively affect their working life in future.
- Consistent use of cooperative learning may cause learners to be dependent on each other and may negatively influence them when required to work individually.
- Consensus becomes difficult especially when it comes to matters that involve emotions.
- It is a time consuming strategy both for preparation and implementation. Therefore, the teacher may not have enough time to complete his syllabus.

Knowledge construction

Knowledge construction is the building of a strong conceptual frame work by the learners through teacher's help who clarifies and asses' prior knowledge. The teacher equally enhances a

social environment favourable for active learning activities which enable learners to build new knowledge (Ambrose, et.al, 2010). Even though an active social classroom is required for knowledge construction, care must be taken to ensure that learners are constructing just the right knowledge for bad company corrupts good one. The idea of an active social classroom takes us back to cooperative learning which reiterates that better learning takes place when learners work together in groups and exchange as well as build up ideas. The importance of learners constructing knowledge to enhanced academic quality is emphasized by Jean Piaget, Jerome Bruner and Lev Vygotsky in their various explanations of knowledge construction.

Group Competition

Collaborative Teaching and Learning can also be enhanced through group competition. According to Free. Dictionary.com (2012) competition deals with a test in skills and abilities. Competition is a conquest wherein learners perceive that they will be rewarded based on comparison with other learners or better still with past performances. (Verhoeff, 1997), says if competition is well organized; it challenges learners to put in their best. In other words, competition encourages motivation to learning. Human beings do not act in isolation; their actions are mostly influenced by others or the environment as they interact. This explains why classroom interaction is an important feature that enhances learner's motivation (Fortress learning, 2011).

(Goody and Brophy 2008) say when every learner gets the chance to win in competition, it makes competition appropriate. They insist on team approach to competition rather than individual competition, when team competition is used, it reduces the fact that same individuals might always win and the same losers might always lose and reduces embarrassment to the losers. What is more, team-based approach increases cooperation within members of a team, and brings about unity amongst team members as they work together for a common goal; which is to be better than the other team they are competing with. (Nichols, 2009) is in favour that competitions be used in schools.

Nevertheless, cooperative activities or learning tends to make the learners over depended on each other such that, if care is not taken they might be affected in future as they may not be able to perform or carry out activities individually. Group competition can enhance pedagogic quality,

judging from the fact that it motivates the learners to learn and put in their very best in trying to win the prize, it wakes even the very slow learners to sit up to contribute to team's so that their team can win the sacred prize set for the competition.

How to structure healthy competition

(Vockell, 2011) holds that, for completion to be healthy, it must offer opportunity to all the learners to have good chances of winning; this can be done through the use of many different activities. Ask different questions to different learners with different abilities, arrange students in to team, introduced elements of chance in to the competition. More, (Vockell 2011) says for competition to be healthy, learners should compete against themselves rather than against other students. Evaluating learners on the basis of what they have acquired personally gives them the opportunity to succeed. With this, even the weak students who are always disadvantaged are opportune to improve on their knowledge and skills as they compete against themselves. Also for competition to be healthy, it should be combined with cooperative environment. Let learners work in teams and compete against other teams. When competition is appropriately balanced with cooperation, it enhances students learning and enables them to succeed in their academic both in concert with other learners in the group and also on an individual basis within the team (Vockell, 2011).

Managing Competition in a Learning Environment

Although many reasons have been advanced against the use of competition in school such as; competition having a negative effect on learning, since learners tend to focused on the goals to be attained at the end rather than the process itself (Lam et al., 2001). (Verhoeff, 1997) says competition if well-organized have a lot of advantages in the classroom because it pushes the learners to put in their best; thus serves as a motivating factor to students' learning. It is in the same light that (Lawrence, 2004) supports that competition brings about active learning and motivation on the part of the learners. Team competition is less harmful for learners and enhances the improvement of leaning skills of learners. Learners prefer anonymous competition rather than face to face competition. With group competition, learners can compete anonymously whereas

with individual competition, learners do compete face to face which might not always be good because of the negative emotions as well as the stress that comes with it (Yu et al., 2002).

Moreover, for competition to be effective, the activities under which the team or group are subjected to, should be short and learners should be focused on the learning process and not the outcome. This explains why prizes given to the team that won the competition should just be symbolic or less important in order to make learners more intrinsically motivated than to be driven by the outcome. If that which is won is important, learners will turn to strive for the outcome or getting the reward and less attention will be paid to the quality of their effort. Thus competition should not make the learners hold on to the outcome or reward but to acquire the process (Shindler, 2007). In addition to the above, to make competition effective in the teaching and learning process, the goal or objective of the competition should be clearly stated in the process rather than the results of the different groups or team. When goals are clear, winning or losing will be of less importance to the teams or members as compared to learning and improvement during competition. Symbolic prizes could serve as prerequisite so that valuable prizes should not be set which might easily cause the learners to focus on it (Shindler, 2007).

In all, Group competition gives learners the opportunity to work collaboratively with other group members to win the prize. To this, individual accountability sets in, for group members try to do their best in accomplishing their own portion in the general task; implying that everyone is at work and there is no free ride. Every group member puts in their best to the completion of team's goal so as to win the trophy, thus competition pushes the learners to work hard and bring out the best in accomplishing tasks in order to win the prize hence influencing acquisition of knowledge, skills and abilities which in turn will influence their performances and classroom assessm

THEORETICAL PERSPECTIVE

This section focuses on theories used in the work, according to (Mbua, 2003), a theory is a systematic and a deductive manner of thinking about the reality in order to better understand and describe such reality; it implies facts, models laws or principles about a phenomenon. To Luma (1983) a theory is "a related assumption or conceptions fields in some way to the real world of unknown properties or behaviours which can be subjected to experimentation and revision as well as reserve to guide in the search for more truth hither to unknown".

The following theories were used in this study:

- The Social Learning Development by lev Vygotsky
- The Social Interdependence Theory 1945 by lewins
- The Socio cognitive learning theory (1982)
- The educational experience theory by Ridley 2011
- The social constructivism theory by lev Vygotsky 1962

The social learning development by lev vygotsky 1962

The seminal work of Lev Vygotsky 1962 suggested that we learn how to interact and communicate from others. Although his theory (Social Development Theory) is primarily based on how educators should create classroom environments to maximize learning for students, it can be used to maximize learning for teachers as well. (Vygotsky, 1962) implied that collaborative or cooperative dialogue helps individuals internalize information and apply it in real-life settings. Social Development Theory helps in understanding how others learn in social settings. When teachers collaborate, they are creating a social environment that allows them to learn from other teachers. Collaboration fosters creativity and integration on specific topics (Goddard &Goddard, 2007). (Sawyer & Rimm-Kaufman, 2007) declared that the culture of school's influence teachers' collaborative attitudes and perceptions. The school's social processes determine the level of teacher collaboration. For instance, teachers with the appropriate resources and allotted time are more likely to collaborate with one another. Therefore, the role of school administrators is integral in fostering a culture that encourages collaborative relationships.

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 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. Vygotsky theories lay emphasis on the role of social interaction in cognitive development (Vygotsky, 1978). The community plays a vital role in the process of 'making meaning' in this theory, Vygotsky (1978) considered the role played by culture and the society, language and interaction are very important in enhancing understanding of how human beings learn.

Using his socio-cultural approach in the study of children, he asserted that language, thoughts, reasoning and the development of individual is because of culture and social interaction with other (especially parents and teacher). Studying the growth of children in their environment he notices that what happens in the social environment such as dialogue, action and activities help children learn, develop and grow. This explains the fact that in cooperative learning students interact with each other in the same group to acquire and practice the elements of a subject matter to solve problem, complete a task or achieve a goal. One of the most important principle invoke in Vygotsky (1978) work, is the zone of proximal development.

Every school has a different cultural makeup, and Social Learning Theory suggests that learning to interact with others through that culture will enhance the learning communities within the school. (Vygotsky, 1962) contended that knowledge construction stems from cultural settings. Creating an environment where directed and guided interactions exist will consequently lead to innovative ideas. Vygotsky recognized that learning takes place in social contexts and encouraged educators to create social learning settings that maximize student learning and promote a positive environment. Therefore, the sharing of pedagogical knowledge and experiences will help to foster a collaborative community of learners. Creating an environment where directed and guided interactions exist will consequently lead to innovative ideas. Vygotsky recognized that learning takes place in social contexts and encouraged educators to create social learning settings that maximize student learning and promote a positive environment.

Moreover, Vygotsky (1962) states through this cultural lens, we:

1. Develop learning communities

2. Create community of learners

3. Support collaborative learning

4. Have discussion-based learning.

The social interdependence theory 1945 by lewins

According to (Johnson and Johnson, 2005) is based on the fact that, individual's goals can be accomplished or achieved through action of others. (Slavin, 2011) says this perspective is based on the fact that the learners or group members help each other learn taking into consideration that they care about their group and its members and they derive self-identity benefit from group membership. In this light, (Johnson and Johnson, 2005) see this as a strong relationship between cooperative learning and social interdependence theory. According to (Deutch, 1949), (Johnson, 1970) and (Johnson and Johnson, 1989) social independence can further, be divided in to two parts, namely: positive cooperation and negative competition.

Positive interdependence according to (Deutsch, 1949) it is when individuals perceive they can only attain their goals if the individuals whom they are cooperatively linked also reach or attain their goals; that is to say the promote each other's effort to attained goals. Hence, cooperative learning, taking in to consideration those individual goals can be accomplished through the action of others (Johnson and Johnson, 2005). This idea is further reinforced through (Slavin, 2011) who says group members derive self-identity benefit from group membership.

In the vein of Vygotsky's work, (Johnson and Johnson, 2009) constructed Social Interdependence Theory. Social Learning theory provided the foundation for Cooperative Learning Theory (Johnson & Johnson, 2009). Social interdependence is when the outcomes are affected by the individual's own or others' actions (Johnson & Johnson,1989). (Johnson and Johnson, 2009) distinguished two types on social interdependence. Positive Social Interdependence is when the actions of individuals promote and achieve common goals, and Negative Social Interdependence is when the actions of individuals hinder or obstruct the achievement of other's goals. Positive interdependence promotes individual contributions to the

overall goal. Through positive interdependence, teachers are accountable and responsible for the common goals of the school and group. The influence of responsibility is increased when there is group and individual accountability (Johnson & Johnson, 2009). Teacher collaboration can elicit a shared responsibility for student learning goals. Teachers that participate in collaborative professional learning realize benefits from a sharing of guidance and expertise; thus, establishing a positive interdependence among the individuals in a school (Williams, 2010). Teacher collaboration transforms teachers into resources for one another. Establishing a community of learners also fosters a positive learning community and, as a result, instructional practices are improved. Teacher learning is key to education reform efforts:

Teacher collaboration has been linked to enhanced teacher learning and higher student achievement (Goddard &Goddard, 2007). (Leonard William Dobbs, 1937) was another social theorist that supported cooperative and collaborative learning. He stated that learners who are operating together through common goals are more likely to be successful than those who work autonomously. (Dobbs, 1937) developed five basic principles that guide cooperative and collaborative action:

1. Interpersonal and collaborative skills

2. Face-to-face interaction

3. Beneficial interdependence

4. Individual responsibility

5. Group interaction processing

The socio cognitive learning theory (1982)

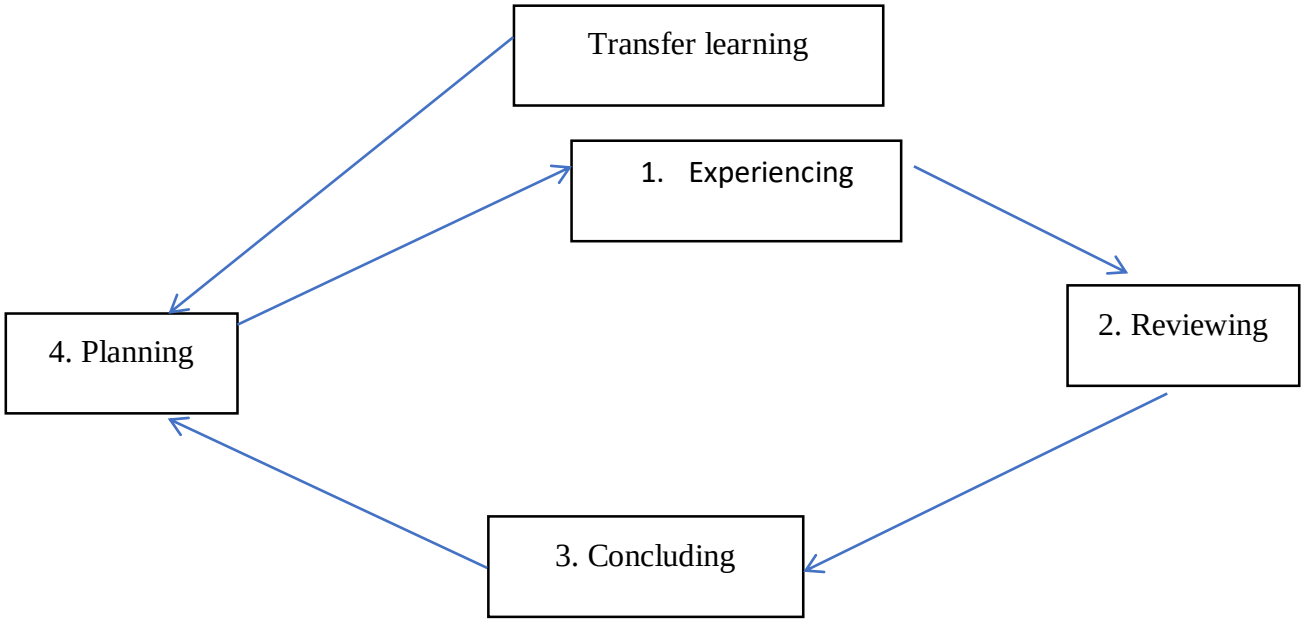
This theory holds that portions of the individual knowledge acquisition can be directly related to observing others within the context of social interaction, experiences and major outside influences. The theoretical foundation is based on four primary human capabilities, which are; symbolizing, self-regulation, self-reflection, and vicarious learning. With symbolizing, it means people are affected by not only direct experiences but also indirect events. With self-regulation, individual regulate their own intentions and behavior by themselves. By self-reflection, individuals evaluate their thoughts and actions by themselves and lastly by vicarious learning, learners by

observing others actions and its consequences, individuals can gain insight into their own activities. Here, people learn by observing others within the environment, with behavior and cognition acting as the primary factor. This theory states that, when people observe a model performing a behavior and the consequence of this behavior, they remember the sequence of the events and used this information to guide subsequent behaviors. Social learning theory emphasizes a shift away from solitary studying and passive listening and toward collaboration with peers. Teachers are encouraged to create and understand their own learning within a social situation associated with CTL. The social context of collaborative learning also often emulates what students can expect in a future work environment.

The educational experience theory of ridley (2011)

This theory is an expansion of Dewey's pragmatic theory of learning by doing which states that a child learns faster by carrying out or doing what the teacher does. (Ridley, 2011) proposes this new educational theory, which highlights the aspects of experience. To him, education is based on educational experiences and as such, powerful educational experiences are as a result of two fundamental principles which are continuity and interaction. Continuity here is when the past and the present influence experiences. He combines these two principles stating that one's present experiences are a direct result of how their previous experiences interact and influences present situation. As a solution, he talks about experiential education based on the idea that learning occurs through experience and requires hands-on activities that directly relate the learner's life. In experiential education, learning occurs through actually doing something and the reflecting the learning from the process. It combines active learning (participation and interaction) with concrete experience and reflection. To Ridley, learning is complex with classroom situations especially with the learning experiences. The experiences must involve the learner situation such as group work taken into consideration. This implies that a teacher's past experience influences her involvement in the teaching process. He summarizes his theory in the diagram below.

Figure 2.1: Explanatory diagram of the new educational theory



Source: Ridley (2011:105)

The above diagram explains that learning can only be transferred after a careful planning of activities and learning experiences. At each stage of the pedagogic process, there must be a review of activities whereby students are called to apply their acquired knowledge to resolve other situations, which takes place mostly in the form of group work or practical exercises.

The theory takes into consideration one of the teaching method which is group work mentioned by the theorist (microteaching). Again, a teacher who acquired adequate knowledge in the aspects of pedagogy will find it easier to apply this knowledge in the process of knowledge impartation. Teachers who are involved in practical experiences in teaching have the opportunity of collaborating (interacting) with learners. Thus, the learner also will be enrooted into it. These theories enable us to identify some difficulties linked with teaching methods and competence building.

The social constructivism theory by lev Vygotsky 1962

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 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. Vygotsky theories lay emphasis on the role of social interaction in cognitive development (Vygotsky, 1978). The community plays a vital role in the process of 'making meaning' in this theory, (Vygotsky, 1978) considered the role played by culture and the society, language and interaction are very important in enhancing understanding of how human beings learn.

Using his socio-cultural approach in the study of children, he asserted that language, thoughts, reasoning and the development of individual is as a result of culture and social interaction with other (especially parents and teacher). Studying the growth of children in their environment he notices that what happens in the social environment such as dialogue, action and activities help children learn, develop and grow. This explains the fact that in cooperative learning students interact with each other in the same group to acquire and practice the elements of a subject matter to solve problem, complete a task or achieve a goal. One of the most important principle invoke in (Vygotsky, 1978) work, is the zone of proximal development.

Zone of Proximal Development relates the difference between what the learners can achieve independently and that which can be achieved with the help of skilled partners. Thus cognitive development of learners greatly depends on social interaction, hence the place of cooperative learning. More the example of (Shaffers, 1996) of the little girl who could not solve the jigsaw puzzle by herself and would have taken her a lot of time to do so, thanks to her father she was able to do so and acquire skills at the end of the day on how to solve jigsaw puzzle. To (Vygotsky, 1978) the Zone of Proximal Development should be the area where the most sensitive guidance or instruction should be given in order to allow the learners to developed skills they will use individually, through this, they will develop higher mental functions.

Peer interaction is an important way of developing skills and strategies; teachers should use cooperative learning exercises to enable less competent children developed through the help of skilful peers within the Zone of Proximal Development. Meaning that, tasks which are difficult to be mastered alone by the learners at the actual development level can be learnt through guidance and assistance from adults, more skilled learners or more knowledgeable learners at the Zone of

Proximal Development, which captures children cognitive skills that are in the process of maturing and the skills can only be honed with assistance of more skilled persons. Looking at (Vygotsky, 1972) Zone of Proximal Development, attention is placed on the fact that when learners work in team or small groups the weaker students benefit from the more knowledgeable ones. Hence through collaboration or interaction, learner's cognitive skills that are in the process of maturing can be honed.

This explains why (Vygotsky, 1972) further explains that the upper limit in the Zone of Proximal Development can only be fruitful through social interactive support from peers and teachers. (Vygotsky, 1972) in his theory states that cognitive development comes from social interaction, from guided learning within the zone of proximal development as the learners and partners or group members construct knowledge. In this light, one can say that cooperative learning enhances cognitive development, thus when there is collaboration, learner's learner and cross over to their zone of proximal development through ideas and interactions from other intelligent group members through interaction and discussions.

(Vygotsky, 1978), states that cognition comes from guided learning. This is equally true drawn from the fact that cooperative learning is guided by the teacher or facilitator in order to orientate the work of learners in their small teams or groups. If the knowledge is not guided learners may easily go out of topic or the desired work expected of them. (Vygotsky, 1978) illustrates that much important learning of a child occurs through social interaction with skilful tutor, this imply the need of collaboration or cooperative dialogue in which the tutor or teacher provides verbal instruction to the learners and provides guidance in order to model the learner's behaviour. Learners are able to model their own performance from instruction given by parents or teachers. (Shaffer, 1996) equally supports this idea through his example of a young girl who is given her first jigsaw.

We notice here that on her first attempt she behaved poorly to solve the puzzle, but after the farther demonstrated to her some basic strategies like finding the edge piece as well as providing a couple of piece for the child to put it together alone, the child became competent and worked independently. Thus (Vygotsky, 1978) is simply reiterating the fact that collaboration or cooperative learning enhances better understanding, hence cognitive develop under teachers,

parents, peers and higher intelligent abilities guidance. Hence interaction with peers is an effective way of developing skills and strategies. Teachers should use cooperative learning exercises to give opportunity to less competent children to develop with help from more skilful peers - within the zone of proximal development thus influencing learners' performances and classroom assessment.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter shows a systematic presentation of the methodology used in carrying out this work and presenting its results. A mixed methods study was used. It is a research intentionally combining or integrating quantitative and qualitative approaches as components of the research. The use of these approaches can occur at different points in the research process. (Caruth, 2013; Creswell, 2011; Ponce, 2011; Teddlie & Tashakkori, 2009; Greene, 2007). When the researcher combines or integrates quantitative and qualitative approaches in the design of mixed study, what it does is create a third research model that allows using these two in an articulated and harmonic manner (Caruth et al). The researcher used the mixed methods research since the complexity of the research problem cannot be addressed from the unique perspective of a quantitative or qualitative study because the contemporary society has evolved and has become more complex. The researcher used the explanatory design of the sequential phase where quantitative analysis gets a depth understanding from the qualitative analysis (Ponce, 2013). According to Ponce and Pagán-Maldonado, (2015), three types of data analysis are used; analysis of quantitative data, qualitative data analysis and analysis of mixed data. And the researcher here used the complementing data. It means using quantitative and qualitative data to complement when presenting the findings.

After elaborating the literature review and theoretical framework, it is therefore convenient to envisage the various strategies that permit the proving of the research hypothesis. Here, we are going to determine the research designs, area of study, population of the study, (sampling techniques, sampling) and the instrument for the data collection.

Research design

Research design refers to the overall plan or strategy by which questions and answer or hypotheses are tested. (Reid, 1981). This study made use of both qualitative and quantitative approach. This approach was used because there was a need to study the standardized data, collaboration from students' perspective, and the actual reflection of their views on their performance. This method equally provided stronger evidence that confirmed results and allowed the researcher to use the strength of one method to cancel the weaknesses inherent in the other method. In this way, the researcher can base knowledge claims on realistic grounds. The

implementation of a mixed method research enables the researcher to gather multiple data in a way that combines results to have complementing advantages and no overlapping disadvantages (Johnson and Christenson, 2004). The research design is a format, which specifies how data related to a given phenomenon should be collected and analyzed. It provides a procedural outline for the conduct of a given investigation.

Quantitative research involves the collection of data, which is numerical in nature to explain, predict as well as control the phenomenon under study, data collected is statistically analysed. In quantitative research designs, there is the collection of data to test hypothesis or answer issues concerning the subject under investigation. Quantitative research is used to describe current conditions or investigate the relationship including cause-and-effect relationships. Quantitative research tries to control many variables at the same time, thus makes use of research strategies like random sampling, random assignment, treatment groups, standardised instruments and the equalizing of conditions of groups to be compared (Amin, 2005). As a quantitative instrument, this research design employs questionnaires.

While qualitative design is diverse and use in studying multiple realities found in a complex field situation. (Amin, 2005) says qualitative research gives room for understanding the way things are and why they are the way, they are. They can be achieved through discussions, intensive and extensive interviews and observations. Qualitative research enhances understanding of social activity view from the perspectives of the researcher or participants. Qualitative research is based on observable and empirical experiences that are observable and requires accurate observation and interaction with respondents in the environment. Qualitative research data is one that is descriptive in nature; implying that they are expressed in non-numerical terms.

Area of study

This work was carried out in the state universities in the Republic of Cameroon which are located in the Center, south west, North West, and Littoral regions of Cameroon.

This study is carried out in five (4) out of the ten (10) regions of Cameroon. This include the Centre (Yaounde), North West (Bamenda), South West (Buea) and littoral region (Douala). Cameroon is a country in central Africa, situated in the bay of East Atlantic Ocean called the Bight of Biafra (World Population Review, 2019). It consists of 10 regions, 360 subdivisions with

headquarters in Yaoundé. Cameroon is bounded to the West and North by Nigeria, to the Northeast by Chad, to the East by Central African Republic, and to the south by the Republic of Congo Gabon and Equatorial Guinea. It is often referred to as Africa in miniature due to its cultural and geological diversity. It is a country with a land surface of 475,442 square kilometres and an estimated population of about 25.88million inhabitants according to current population census (World Population Review, 2019). The official languages are English and French, which owe their origins from Britain and France (former colonial masters respectively).

Cameroon is made up of ten (10) regions headed by governors, fifty-eight divisions (58) headed by presidentially appointed divisional officers and Three hundred and sixty (360) subdivisions headed by sub divisional officers. Yaoundé is the headquarters and political capital of Cameroon and Douala as the economic. Yaoundé the political capital of Cameroon has a population of about1.299, 369 and a surface area of 180 square - metres. This study is carried out in the regional headquarters of the selected regions. This is because all state universities are located in the regional headquarters therefore the choices of the universities of Yaounde I, Yaounde II, Bamenda, Buea, and Douala.

Population of the study

The population of a study defines the limit within which the research findings are applicable. It also serves in bringing together the persons concern with the objectives of the study. Our population here consists of all the university students in the Republic of Cameroon.

The targeted population

The results of the research will be applied in this population. Our target population as to this study consists of all the State University Postgraduate (level 4 and above) students of State universities in the Republic of Cameroon.

Accessible population

This is that population that is at the reach of the researcher. Our Accessible Population of this study consists of the group we want to draw our sample (working population) from 2000 students, who were drawn from five (5) state universities (universities of Yaounde I, Yaounde II, Buea, Bamenda and, Douala) from four regions of Cameroon (Center, south west, North West, and Littoral).

Sampling and sampling techniques

The choices are drawn from the simple random sampling technique. This technique is one in which each and every member of the population has an equal and independent chance of being selected when we apply the nominal scale (NS). The researcher here, choose five state universities in Cameroon with a sample of three hundred and twenty-two (322) students drawn from the accessible population of two thousand (2000) students. In using this technique, there is less sampling error given that it is the easiest probabilistic sampling technique in terms of conceptualization and application. This sampling was found representative according to krejcie and morgan (1970). Therefore, from this finding result this method can be generalized. Due to the vast and varied nature of this population, certain criteria for the selection were define which were;

1. The students must be fully enrolled in at least one of the universities mentioned above, and must be a regular student.
2. The students must be post Graduate students in the various universities

Table 3.1: sample of the study

N°	University	Number of Students
1.	University of Yaoundé I	85
2.	University Of Yaounde II	80
3.	University Of Buea	45
4.	University Of Bamenda	55
5.	University Of Douala	35
	TOTAL	**300**

The instrument of data collection

The instrument used for the collection of data for this study was a questionnaire, which was used to collect data from Students on their perception of their teachers' collaboration.

Presentation of questionnaire

The questionnaires was addressed to the randomly selected students of the five selected state universities in Cameroon. This consisted of the;

- Preamble
- Sociodemographic data
- The items of the research hypothesis.

The questionnaire comprises of three (3) main parts: preamble, Sociodemographic data and the student's opinion (items)

The introduction carries the research topic and proposes ways of filling the questionnaires. The bio data of the questionnaire comprises five aspects (Age of student, Gender, faculty name and institutions's name). The third part is based on the Four Hypothesis and dependent variables that make up the 22 items with five sections.

- Teachers teamwork (5 Statements)
- Brainstorming (5 Statements)
- Teacher mentoring (5 Statements)
- Teachers' communication (5 Statements)
- Students performance (2 Statement)

We used the liked scale questionnaire with options:

- Strongly Agree,
- Agree,
- Strongly Disagree
- Disagree.

The items in the questionnaires were framed in a short, precise and straight-to-the-point manner to reduce the risk of misunderstanding between the researcher and the sample. The statements are organized according to the main themes. As per the indicators, the researcher made use of the Nominal measurement scale since the modalities are less than five. The administration was done in the month of May and June 2022. A total of 322 questionnaires were administered but

the same students prove very tough despite the efforts of the researcher there was a return of 300 making a total loss of 22 questionnaire.

Validity of the instruments

Validity is the ability of an instrument to measure the effectiveness and the object of the study it is meant for. There are several types of validity but for the purpose of this study, we shall dwell on internal and external validity.

Internal validity

This looks at the coherency in the construction of the questionnaires while considering the link between the question, objectives, hypothesis and their indicators. As such, making it a process of verification, questioning and theorization. The construction of our questionnaire followed this type for its validity is seen in the neutrality of the items; the language was adjusted after piloting

External validity

This is based on the relationship between the research problem and the population of study. Its aim was to determine if the instrument of measurement really corresponded to the population and also the projection of the general results in relation to the representatives. This questionnaire went through many stages during its construction.

Face validity

After the construction of the questionnaire, the supervisor of the study critically examined the items checking its appropriateness and pointing out errors. All necessary corrections were made and face validity was ensured.

Content validity

To ensure the content validity of the questionnaire, the supervisor of the study critically examined the items and corrects them in function of the research objectives. After making necessary corrections, he then confirmed the relevance of the items to the objectives of the study. This process and exercise gave the instruments its content validity.

Reliability of the research instruments

According to (Vogt, 2007), Reliability is defined as the consistency of either measurement or design to give the same conclusions if used at different times. The first step in

ensuring reliability was to provide the variables under study with clear operational definitions. Internal consistency was then measured by internal reliability of consistency (Sekeran, 2009) as well as split-half reliability using Cronbach's alpha. If α (Cronbach alpha) value is computed to be 0.7 and above, then the instrument is considered satisfactory (Cronbach, 1951; Sekeran and Bougie, 2010), using results from the pretested questionnaire a reliability coefficient of 0.943 was obtained which is reliable for this study.

Piloting

In order to ensure meaningful reliability, internal consistency and validity of the survey instruments used, a test must first be tried on respondents mostly on those that are not going to be part of the sample population. The act is called piloting. It involves editing the questionnaire on instructions that need simplifying to suit the subject's abilities to respond in line with the desired objectives of the study instruments. A pilot core purpose is to increase the reliability, validity and practicability of the questionnaire. Therefore, after construction, the instrument was tested on twenty (20) students not included in the sample groups in order to check its reliability. The questionnaire of the study made use of a Likert scale hence suitability for reliability analysis. Likert scale enabled easier analysis as it minimized doubt on the type of response given.

Methods of data collection

This study used both primary and secondary data collection methods to get information from respondents.

Primary Data Collection

The researcher used primary methods of data collection to collect data from the field using questionnaire**.** Structured questionnaires were used to obtain information from the students of the selected universities. Technical words, ambiguous phrases and those that affect the respondent's emotional states were avoided. Equally, based on the essentials of a good research instruments, the different copies were prepared and organized in a simple and straightforward manner.

Secondary data collection method

The researcher used different documents to access accurate and reliable data. The documents included; personal profiles, policies (laws) and regulations, books, articles, journals and in published dissertations.

Procedure of administering the instruments of data collection

The researcher carried out a self-delivery and Online method in the collection of data using google forms. Firstly, the researcher obtained a written authorization from the Dean of studies of the Faculty of Education of the University of Yaounde 1, which gave the go ahead to visit the schools. The researcher proceeded to the schools and personally administered the questionnaire except for the case of the universities of Bamenda and Douala where a third party administered the questionnaire and there was the use of an online questionnaire using Google Forms. In some schools, the process took weeks. The preamble of the instruments was assured the respondents that the information needed from them was to be treated confidentially and only used for research purposes. This enabled the researcher to create a good relationship with respondents before administering the instruments.

Statistical methods and technique of data analysis.

This is the process of systematically applying statistical and logical techniques to describe, summarize and compare data (Amin, 2004). Methods of data analysis refer to the way the hypotheses are tested using the data collected from the research study. (Gay, 1996), states that, the data analysis method chosen for the study should reflect the type of data, particularly concepts, variables and hypotheses being verified. The analysis was done in this section with respect to the different hypotheses. This data collected was analyzed using the IBM Statistical Product for Service Solution (S.P.S.S) template version 25 for the interpretation of results and recommendations. The data collected was entered into a computer, and cleaned. Descriptive statistics was used because it provided us with an overall picture of the characteristic of the population. This overall picture is presented through frequencies, percentages and charts scores and standard deviation concerning inferential statistics, Pearson correlation index, ANOVA and Regression was used to test research hypotheses.

Ethical values

To ensure ethical conduct in this research work, the researcher testifies that any documents or words not produced by him was backed by references to prevent the act of plagiarism. In addition, in order to have the corporate willingness of all the respondents, they were informed about the study and giving a briefing on the research purpose and an assurance of treating the information provided by respondents confidentially and for academic purposes only as stipulated in the preamble of the questionnaire. This enabled the respondent to corporate with minimum risk. Again, the researcher avoided the fabrication of data, privacy was maintained and secrecy of respondents was ensured.

CHAPTER FOUR: RESEARCH FINDINGS

This chapter presents the research findings and analysis. The study investigates the impact of different collaborative teaching methods on students' performance in higher education institutions. The data were collected through questionnaire. Findings were presented to respond to the four specific objectives of this study. The study sought to provide answers to four specific objectives:

(i) To verify the effect of Teachers teamwork on the student performance s in higher education institutions.

(ii) To examine the influences of Brainstorming on students' performance in higher education institutions in higher education institutions.

(iii) To ascertain the influence of teachers mentoring on students' performance in higher education institutions.

(iv) To verify the effect of teacher's communication on students' performance in higher education institutions.

Demographic characteristics of participants

The Demographic characteristics of participants in this study includes the Gender, Age group, Name of Institution and Name of Faculty.

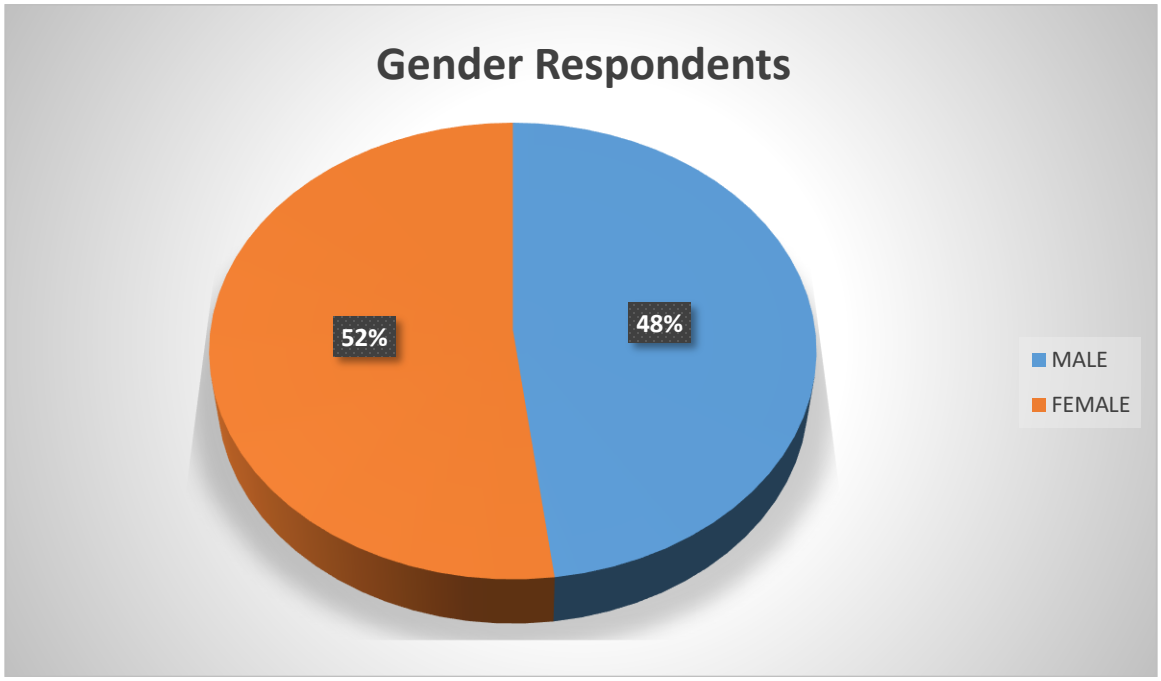
Gender of respondent

The gender for this study included male and female postgraduate students of the selected state universities of the republic of Cameroon.

Table 4.1: Gender of respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	144	48.0	48.0	48.0
Female	156	52.0	52.0	100.0
Total	300	100.0	100.0	

Figure 4.1: Gender of Respondents



Source: Field Data (2022)

The pie chart above representing gender distribution shows female constituted a bigger number of respondents (52.0%) as compared to (48.0%) for male respondents. This shows that majority of the respondents of the questionnaire were female.

Age Group

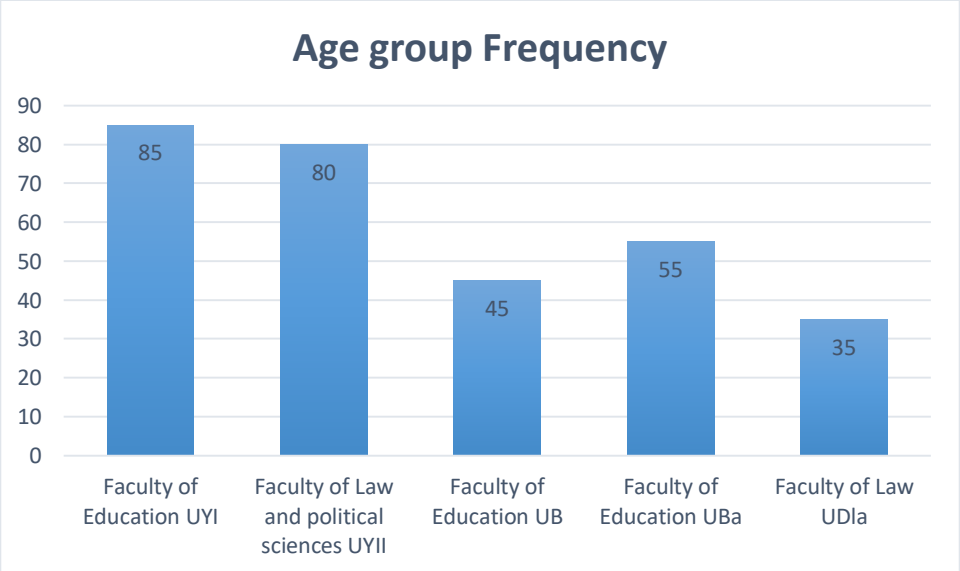
The respondents were grouped into five age groups. That is first group (10-15years), Second group (16 -20 years), third group (21-25years), fourth group (26-30years) and the fifth group (31+ years).

Table 4.2: Age Group

	Frequency	Percent	Valid Percent	Cumulative Percent
16-20	7	2.3	2.3	2.3
21-25	107	35.7	35.7	38.0
26-30	120	40.0	40.0	78.0
31+	66	22.0	22.0	100.0
Total	300	100.0	100.0	

Source: Field data ,2022

Figure 4.2: Age Group frequency



Source: Field Data (2022)

Name of Institution

In relation to the institutions involved in the research 28.3% of the respondents came from the University of Yaounde I, 26.7% from the University of Yaounde II, 15.0% from the University

of Buea, 18.3% from the University of Bamenda and 11.7% from the University of Douala. The frequency table below shows a majority of respondents came from the University of Yaoundé and a minority from the University of Douala.

Institution

Table 4.3: Institutions

	Frequency	Percent	Valid Percent	Cumulative Percent
University of Yaounde I	85	28.3	28.3	28.3
University of Yaounde II	80	26.7	26.7	55.0
University of Buea	45	15.0	15.0	70.0
University of Bamenda	55	18.3	18.3	88.3
University of Douala	35	11.7	11.7	100.0
Total	300	100.0	100.0	

Source: Field data, 2022

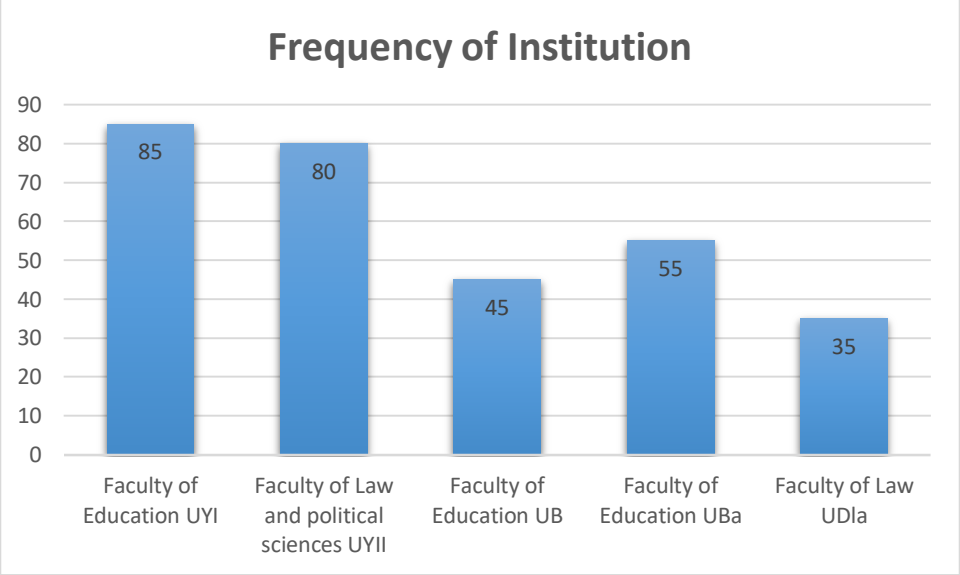


Figure 4.3: Frequency of Institution
Source: Field Data 2022

Name of Faculty

The frequency table below show 28.3% of the respondents came from the Faculty of Education of the University of Yaounde I, 26.7% from the Faculty of Law and political sciences

of the University of Yaounde II, 15.0% from the Faculty of Education of the University of Buea, 18.3% from the Faculty of Education of the University of Bamenda and 11.7% from the Faculty of Law of the University of Douala.

Table 4.4: Faculty

	Frequency	Percent	Valid Percent	Cumulative Percent
Faculty of Education UYI	85	28.3	28.3	28.3
Faculty of Law and political sciences UYII	80	26.7	26.7	55.0
Faculty of Education UB	45	15.0	15.0	70.0
Faculty of Education UBa	55	18.3	18.3	88.3
Faculty of Law UDla	35	11.7	11.7	100.0
Total	300	100.0	100.0	

Source: Field data, 2022

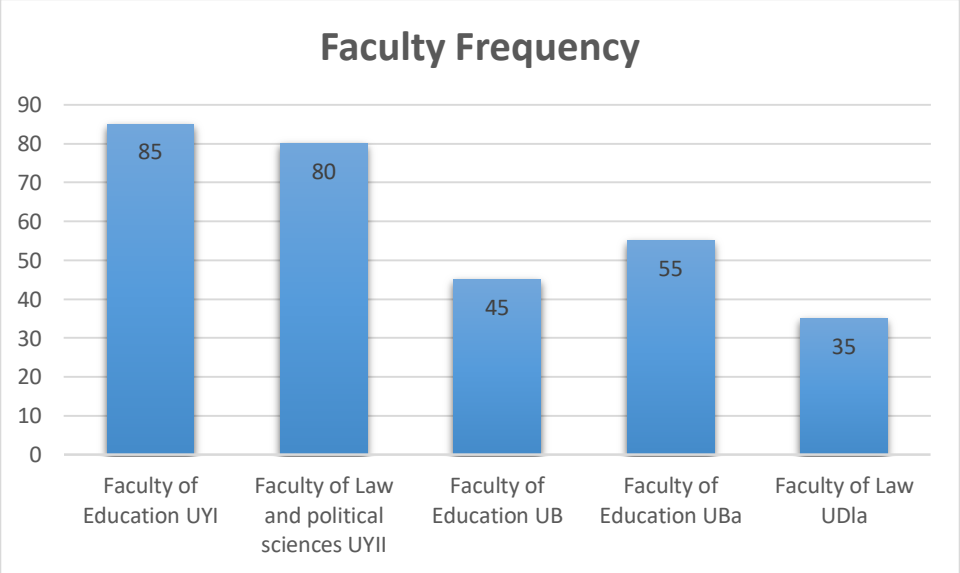


Figure 4.4: Faculty Frequency

Source: Field Data 2022

Presentation of findings

This study had four specific objectives to answer: (i) To verify the effect of Teachers teamwork on the student performance s in higher education institutions. (ii) To appraise the influences of Brainstorming on students' performance in higher education institutions in higher education institutions. (iii) To investigate the influence of teachers mentoring on students' performance in higher education institutions. (iv) To determine the effect of teachers'

communication on students' performance in higher education institutions. For each Objective, the frequencies, percentages, weighted mean, and standard deviation was used to present and analyse data and appropriately reporting findings following objectives.

Objective One

To verify the effect of Teachers teamwork on the student performance s in higher education institutions.

The indicators of teachers' teamwork were presented in a five item statement. The responses were presented in a Likert scale of 1-4 (Strongly Agree, Agree, Disagree, and Strongly Disagree). The respondents were asked to rate their level of agreement or disagreement. The results are illustrated in Table 4.5 below.

Table 4.5: Verifying the effect of Teachers teamwork on the student performance s in higher education institutions.

	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=300					
		F(%)	F(%)	F(%)	F(%)		
1	Using lesson plans hand-in-hand with colleagues is more productive	165(55.0)	108(36.0)	16(5.3)	11(3.7)	3.42	.756
2	Teamwork aid teachers' cooperation	83(27.7)	161(53.7)	30(10.0)	26(8.7)	3.00	.851
3	Making use of peer-group tutoring facilitates teaching	111(37.0)	135(45.0)	33(11.0)	21(7.0)	3.12	.864
4	Team members are to actively participate in every group session	106(35.3)	160(53.3)	30(10.0)	4(1.3)	3.22	.675
5	Team members share information in every team	117(39.0)	122(40.7)	44(14.7)	17(5.7)	3.13	.865
	Overall total					**3.17**	**.084**

Source: Field data, 2022

From Table 4.5 above we observe most of the respondents fell in the category of those who strongly agreed and agreed that teacher's teamwork as a teaching method affects students' performance. Using lesson plans hand-in-hand with colleagues is more productive (55.0%: mean =3.42) strongly agreed with the statement. Teamwork aid teachers' cooperation (53.7%: mean = 3.00) agreed; for Making use of peer-group tutoring facilitates teaching (45%: mean = 3.12) agreed; Team members are to actively participate in every group session (53.3%: mean =3.22) agreed; Team members share information in every team (40.7%: mean =3.13) agreed.

On the other hand, some respondents strongly disagreed and disagreed that teacher's teamwork as a teaching method affects students' performance. For Using lesson plans hand-in-hand with colleagues is more productive (5.3%: mean =3.42) Disagreed with the statement. Teamwork aid teachers' cooperation (10.0%: mean = 3.00) Disagreed; for Making use of peer-group tutoring facilitates teaching (11.0%: mean = 3.12) agreed; Team members are to actively participate in every group session (10.0%: mean =3.22) agreed; Team members share information in every team (14.7%: mean =3.13).

As a result, the overall average mean of responses was 3.17 (SD =2.749) on teacher's teamwork as a teaching method affects students' performance in Higher Education Institutions. The overall average mean fell in the range of high mean. This indicated that many of the respondents agreed that teacher's teamwork as a teaching method affects students' performance in Higher Education Institutions.

Objective Two

To examine the influence of Brainstorming on students' performance in higher education institutions in higher education institutions.

The indicators of Brainstorming were presented in a five item statement. The responses were presented in a Likert scale of 1-4 (Strongly Agree, Agree, Disagree, and Strongly Disagree). The respondents were asked to rate their level of agreement or disagreement. The results are illustrated in Table 4.6 below.

Table 4.6: Appraising the influences of Brainstorming on students' performance in higher education institutions in higher education institutions.

	Statement	Strongly Agree	Agree	Disagree	Strongly Disag	Mean	Standard Deviation
		Frequency and Percentage; N=108					
		F(%)	F(%)	F(%)	F(%)		
1	Group work requires ethics	162(54.0)	80(26.7)	32(10.7)	26(8.7)	3.2600	.96376
2	Teachers are more productive when they collectively reflect over classroom problems	122(40.7)	113(37.7)	45(15.0)	20(6.7)	3.0733	.81044
3	Group work provide opportunity for everyone to share their ideas	122(40.7)	113(37.7)	45(15.0)	20(6.7)	3.1233	.90046
4	Brainstorming creates an atmosphere of inclusivity	105(35.0)	139(46.3)	41(13.7)	15(5.0)	3.1133	.82224
5	Brainstorming has a clear outcome	106(35.3)	102(34.0)	70(23.3)	22(7.3)	2.9733	.93927
	Overall total					**3.10864**	**.068**

Source: Field data, 2022

From Table 4.5 above we observe most of the respondents fell in the category of those who strongly agreed and agreed that Brainstorming influences students' performance. Group work requires ethics (54.0%: mean =3.26) strongly agreed with the statement. Teachers are more productive when they collectively reflect over classroom problems (40.7%: mean = 3.07) strongly

agreed; for Group work provide opportunity for everyone to share their ideas (40.7%%: mean = 3.1233) strongly agreed; Brainstorming creates an atmosphere of inclusivity (46.3%: mean =3.1133) agreed; Brainstorming has a clear outcome (35.3%: mean =2.97) strongly agreed to the statement.

However, some respondents strongly disagreed and disagreed that Brainstorming influences students' performance. Group work requires ethics (10.7%: mean =3.26) disagreed with the statement. Teachers are more productive when they collectively reflect over classroom problems (15.0%: mean = 3.07) disagreed; for Group work provide opportunity for everyone to share their ideas (15.0%: mean = 3.1233) disagreed; Brainstorming creates an atmosphere of inclusivity (13.7%: mean =3.1133) disagreed; Brainstorming has a clear outcome (23.3%: mean =2.97) disagreed to the statement.

As a result, the overall average mean of responses was 3.10864(SD =.068) on if brainstorming affects students' performance in Higher Education Institutions. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed that brainstorming affects students' performance in Higher Education Institutions.

Objective Three

To ascertain the influence of teachers mentoring on students' performance in higher education institutions.

Statements representing teachers mentoring were presented in a five item statement. The responses were presented in a Likert scale of 1-4 (Strongly Agree, Agree, Disagree, and Strongly Disagree). The respondents were asked to rate their level of agreement or disagreement. The results are illustrated in Table 4.7 below.

Table 4.7: Investigating the influence of teachers mentoring on students' performance in higher education institutions.

	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=300					
		F(%)	F(%)	F(%)	F(%)		
1	Self-motivation improves learning	136(45.3)	106(35.3)	36(12.0)	22(7.3)	3.1867	.91357
2	Self-discipline improves learning	126(42.0)	121(40.3)	24(8.0)	29(9.7)	3.1467	.93169
3	Giving increased support to students facilitates learning	138(46.0)	87(29.0)	43(14.3)	32(10.7)	3.1033	1.01130
4	Students need support and encouragement	137(45.7)	84(28.0)	44(14.7)	35(11.7)	3.0767	1.03329
5	Mentoring methods need to be based on individual needs	116(38.7)	109(36.3)	55(18.3)	20(6.7)	3.0700	.91354
	Overall total					**3.11668**	**.0572**

Source: Field data, 2022

From Table 4.7 above we observe most of the respondents fell in the category of those who strongly agreed and agreed that teachers mentoring influence students' performance. Self-motivation improves learning (45.3%: mean =3.1867) strongly agreed with the statement. Self-discipline improves learning (42.00%: mean =3.1467) strongly agreed; Giving increased support to students facilitates learning (46.0%: mean = 3.1033) strongly agreed; Students need support and encouragement (45.7%: mean =3.0767) strongly agreed; Mentoring methods need to be based on individual needs (38.7%: mean =3.0700) strongly agreed.

On the other hand, some respondents strongly disagreed and disagreed that teachers mentoring influence students' performance. Self-motivation improves learning (12.0%: mean

=3.1867) disagreed with the statement. Self-discipline improves learning (9.7%: mean =3.1467) strongly disagreed; Giving increased support to students facilitates learning (14.3%: mean = 3.1033) disagreed; Students need support and encouragement (14.7%: mean =3.0767) disagreed; Mentoring methods need to be based on individual needs (18.3%: mean =3.0700) disagreed.

As a result, the overall average mean of responses was 3.11668(SD =.0572) on if teachers mentoring affects students' performance in Higher Education Institutions. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed that teacher's mentoring affects students' performance in Higher Education Institutions.

Objective Four

To verify the effect of teacher's communication on students' performance in higher education institutions.

Statements representing teachers' communication were presented in a five item statement. The responses were presented in a Likert scale of 1-4 (Strongly Agree, Agree, Disagree, and Strongly Disagree). The respondents were asked to rate their level of agreement or disagreement. The results are illustrated in Table 4.7below.

Table 4.8: Determining the effect of teacher's communication on students' performance in higher education institutions

	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=300					
		F(%)	F(%)	F(%)	F(%)		
1	When given clear instructions students know when and how work is to be done	167(55.7)	100(33.3)	31(10.3)	2(.7)	3.4400	.70336
2	Feedback received from colleagues and students improve your teaching method	109(36.3)	132(44.0)	37(12.3)	22(7.3)	3.0933	.87970
3	Asking questions requires students to think of ways or steps to solve them	117(39.0)	114(38.0)	39(13.0)	30(10.0)	3.0600	.95889
4	Encouragement promotes students to participate more in class	105(35.0)	130(43.3)	43(14.3)	22(7.3)	3.0600	.88639
5	Being understanding and friendly opens students positively towards the lesson	118(39.3)	110(36.7)	42(14.0)	30(10.0)	3.0533	.96623
	Overall total					**3.14132**	**.1059**

Source: Field data, 2022

From Table 4.7 above we observe most of the respondents fell in the category of those who strongly agreed and agreed that teachers' communication affects students' performance. When given clear instructions students know when and how work is to be done (55.7%: mean =3.4400) strongly agreed with the statement. Feedback received from colleagues and students improve your teaching method (44.0%: mean =3.0933) agreed; Asking questions requires students to think of ways or steps to solve them (39.0%: mean = 3.0600) strongly agreed; Encouragement promotes students to participate more in class (43.3%: mean =3.0600) agreed; Being understanding and friendly opens students positively towards the lesson (39.3%: mean =3.0533) strongly agreed.

On the other hand, some respondents strongly disagreed and disagreed that teacher's communication affects students' performance. When given clear instructions students know when and how work is to be done (55.7%: mean =3.4400) strongly agreed with the statement. Feedback received from colleagues and students improve your teaching method (44.0%: mean =3.0933) agreed; Asking questions requires students to think of ways or steps to solve them (39.0%: mean = 3.0600) strongly agreed; Encouragement promotes students to participate more in class (43.3%: mean =3.0600) agreed; Being understanding and friendly opens students positively towards the lesson (39.3%: mean =3.0533) strongly agreed.

As a result, the overall average mean of responses was 3.14132(SD =.1059) on how teacher's communication affects students' performance in Higher Education Institutions. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed that teacher's communication affects students' performance in Higher Education Institutions.

Table 4.9: Students Performance (Dependent Variable)

	Statement	A+ to A-	B+ to B-	C+ to C-	D+ to E	F	Mean	Standard Deviation
		Frequency and Percentage; N=300						
		F(%)	F(%)	F(%)		F(%)		
1	In what range was your grade in Research methodology Course?	126(42.0)	88(29.3)	75(25.0)	9(3.0)	2(.7)	1.9100	.91908
2	In what range was your grade in Psychology Course?	90(30.0)	93(31.0)	91(30.3)	7(2.3)	19(6.3)	2.2400	1.10141
	Overall total						**2.075**	**.1289**

Source: Field data, 2022

From table 4.7 above it is observed that a majority of respondents indicated their grade for research methodology fell within the range of A+ to A- (42.0%; mean 9100). For In what range was your grade in Psychology Course (31.0%; mean=2.2400) indicated their grade fell within the range of B+ to B-.

As a result, the overall average mean of responses was 2.075 (SD = .1289) on students' performance.

Pearson's Correlation analysis

It is applied to determine the direction and degree of relationship between two variables; X (Collaborative Teaching) and Y (students' performance). When both variables are measured at ordinary level of measurement (Amin, ibd). Pearson's correlation can be obtained using the following formula

It is usually applied to test for statistical significance where the calculated value is compared with the critical value in Pearson's correlation table with number of paired ranks. Alternatively, decision is made whether to confirm or deny the hypothesis based on comparing the sig. (2-tailed with a (alpha) =0.05.

To test the previously established hypotheses with the help of correlation analyses, the researcher produced scattergrams of the relationships between the different IVs, namely, teachers' teamwork, brainstorming, teachers mentoring and teachers' communication, towards student's academic performance. Looking at the scatterplots, it can be detected that the relationship between the different IVs and the DV in all cases have a Positive Correlation meaning as one variable increased the other also increased.

Table 4.10: Correlations among variables

	Teacher's Teamwork	Brainstorming	Teacher's Mentoring	Teachers Communication	Students' performance
Teacher's Teamwork					
Brainstorming	.830**				
Teacher's Mentoring	.732**	.800**			
Teachers Communication	.722**	.811**	.476**		
Students' performance	.754**	.883**	.6031**	.854**	
Mean	3.17	3.10864	3.11668	3.14132	3.075

Standard Deviation	.084	.068	.0572	.1059	.1289
N	300	300	300	300	300

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

Hypothesis H_0-1

This hypothesis states that there is no statistically significant relationship between teachers' teamwork and students' performance in higher education Institutions.

Table 4.11: Model Summary[b] for teachers teamwork

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.045[a]	.002	-.001	.78937

a. Predictors: (Constant), Teachers Teamwork

b. Dependent Variable: Students performance

Table 4.12: ANOVA[a] for teachers teamwork

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.376	1	.376	.104	.638[b]
	Residual	185.686	298	.623		
	Total	186.063	299			

a. Dependent Variable: Students' performance

b. Predictors: (Constant), Teachers Teamwork

Table 4.13: Coefficients[a] for teachers teamwork

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.272	.258		8.808	.000
	Teachers Teamwork	-.062	.080	-.045	-.777	.638

a. Dependent Variable: Students Performance

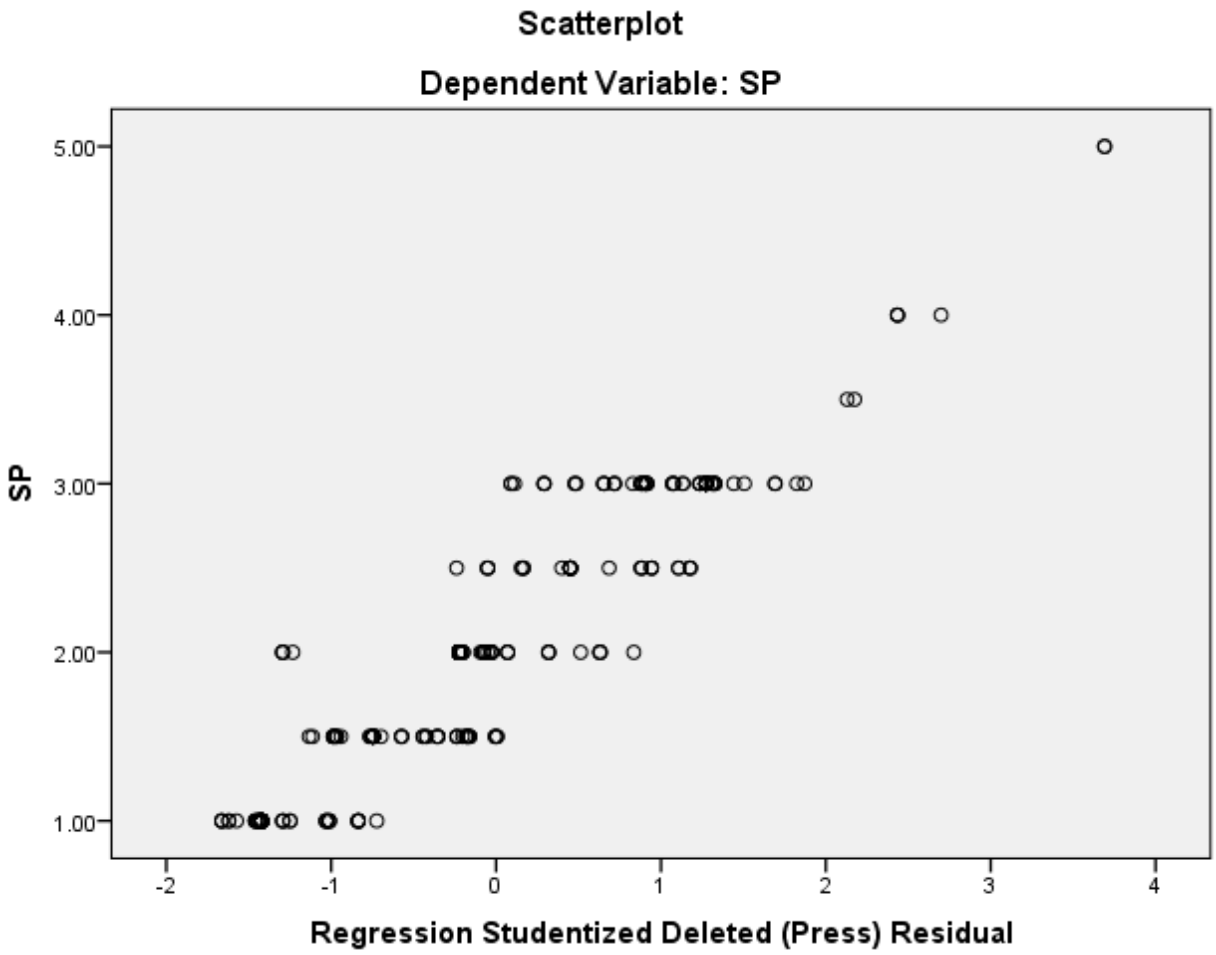


Figure 4.4: scatterplot for Teachers Teamwork

Teacher teamwork had a Strong positive correlation with students' performance. Students' performance. As it was noticed from the scatterplot that as teachers' teamwork increased students' performance also increased approximately. The null hypothesis is rejected, and alternative hypothesis accepted.

Hypothesis H_0-2

This hypothesis states that there is no statistically significant link between brainstorming and students' performance in higher education institutions.

Table 4.14: Model Summary[b] for Brainstorming

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.354[a]	.125	.122	6.26321

a. Predictors: (Constant), Brainstorming
Source: IBM SPSS Data Output

The following table is the F test. The null hypotheses for the F test stated that there is no statistically significant effect of Brainstorming on students' performance. Thus, it can be stated as R^2=125, with F (1,267) = 38.270, p=.000. The degree of freedom (Df) 1.267 and the f of 38.270 is seen with a probability of P= 000. This test is highly significant as the researcher assumed that there is a statistically significant effect of Brainstorming on students performance

Table 4.15: ANOVA[a] for Brainstorming

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1501.239	1	1501.239	38.270	.000[b]
	Residual	10473.809	298	39.228		
	Total	11975.048	299			

a. Dependent Variable: Students Performance
b. Predictors: (Constant), Brainstorming

The regression results showed a statistically significant relationship between brainstorming teaching method and students' performance. ($t = 6.186$, $p < 0.000$). The slope coefficient for Brainstorming teaching method was 0.354 thus, students' performance increases by a factor of 0.354 for each brainstorming session.

The constant or the intercept in terms of students' performance is 25.379 this tells us that When the brainstorming teaching method is zero, competence building is 25. 379 this really makes sense when we are predicting the level of competence as far as brainstorming teaching method is concerned. Interpreting how Brainstorming teaching method affects students' performance, .588 is the slope or rise over the run for each unit of increase in competence. Moving to significant level, it is .000 meaning that brainstorming increases students' performance in higher education institutions.

The beta weighting (ß) is 'the amount of standard deviation unit of change in the dependent variable for each standard deviation unit of change in the independent variable'. Here the standardized beta weighting is .354, i.e. it is statistically significant (ρ=0.000 in the 'Sig.' column); this means that for every standard deviation unit change in the independent variable ('Brainstorming') there is .354 of a unit rise in the dependent variable ('Students Performance').

Table 4.16: Coefficients[a] for Brainstorming

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.945	.216		9.003	.000
	Brainstorming	.042	.068	.036	.616	.538

a. Dependent Variable: Students performance

Figure 4.5: Scatterplot of Brainstorming

Brainstorming had a strong positive correlation with students' performance. students' performance. As it was noticed from the scatterplot that as Brainstorming increased students' performance also increased approximately. The null hypothesis is rejected, and alternative hypothesis accepted.

Hypothesis H_0-3

This hypothesis states that there is no statistically significant relationship between teacher mentoring and students' performance in higher education institutions.

Table 4.17: Model Summary[b] for Teachers mentoring

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.016[a]	.000	-.003	.79008

a. Predictors: (Constant), Teachers Mentoring
b. Dependent Variable: Students Performance

Table 4.18: Coefficients[a] for Teachers Mentoring

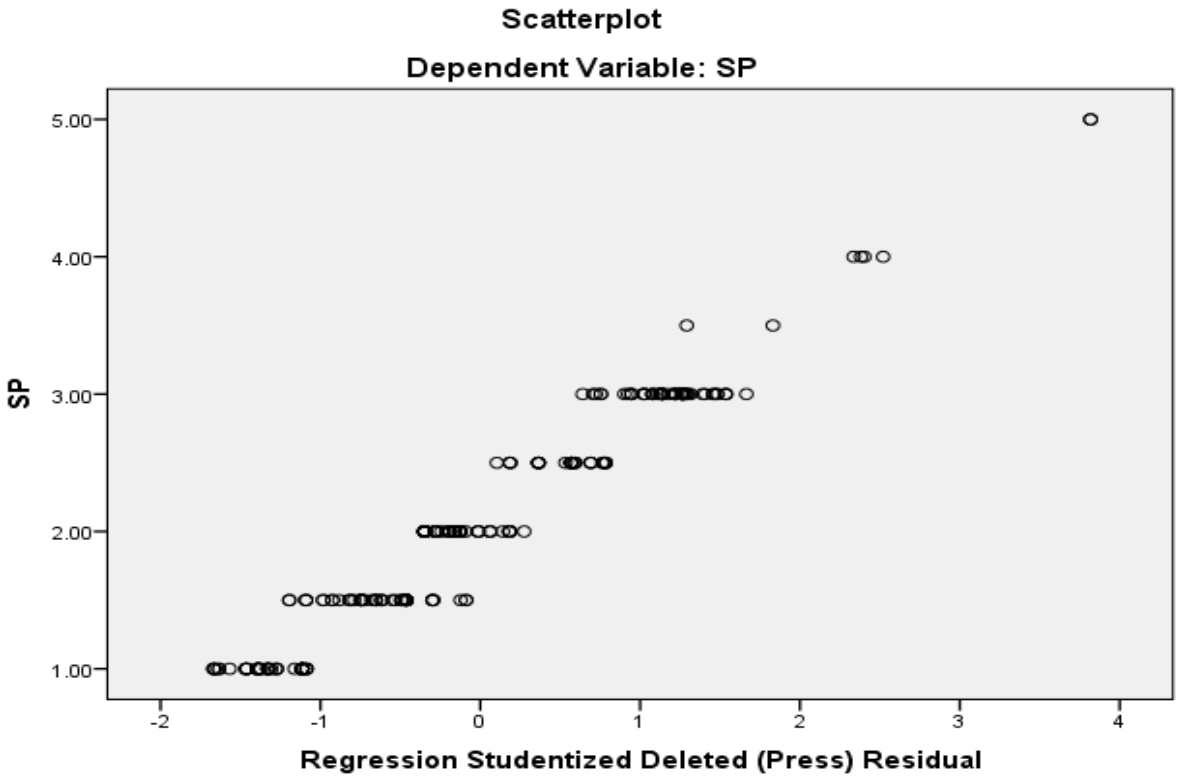
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.127	.198		10.727	.000
	Teacher Mentoring	-.017	.062	-.016	-.269	.788

a. Dependent Variable: Students Performance

Table 4.19: ANOVA[a] for Teacher Mentoring

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.045	1	.045	.072	.788[b]
	Residual	186.017	298	.624		
	Total	186.063	299			

a. Dependent Variable: Students Performance
b. Predictors: (Constant), Teachers Mentoring



Teacher Mentoring has a strong positive correlation with students' performance. Students' performance. As it was noticed from the scatterplot that as teachers' mentoring increased students' performance also increased approximately. The null hypothesis is rejected, and alternative hypothesis accepted.

Hypothesis H_0-4

There is no statistically significant relationship between teachers communication and students' performance

Table 4.20: Model Summary[b] for Teachers Communication

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.025[a]	.001	-.003	.78992

a. Predictors: (Constant), Teachers Communication

b. Dependent Variable: Students Performance

Table 4.21: Coefficients[a] for Teachers Communication

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.168	.216		10.037	.000
	Teachers Communication	-.030	.067	-.025	-.439	.661

a. Dependent Variable: Students Performance

Table 4.22: ANOVA[a] for Teachers Communication

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.120	1	.120	.193	.661[b]
	Residual	185.942	298	.624		
	Total	186.063	299			

a. Dependent Variable: Students performance

b. Predictors: (Constant), Teachers Communication

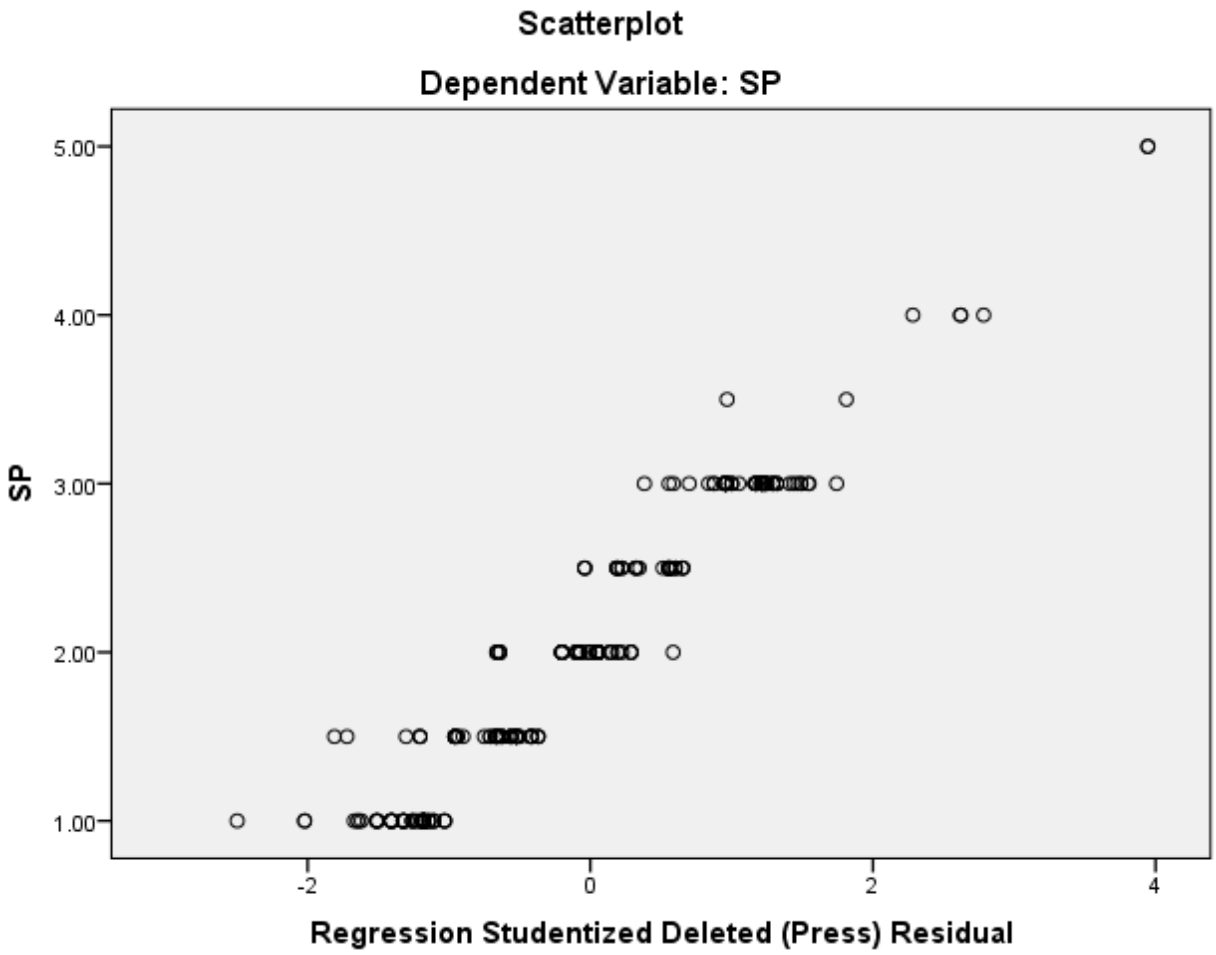


Figure 4.7: Scatterplot of Teachers Communication

Teachers Communication had a strong positive correlation with students' performance. As it was noticed from the scatterplot that as teachers' teachers' communication increased students' performance also increased approximately. The null hypothesis is rejected, and alternative hypothesis accepted.

Table 4.23: Summary Results of Research Objectives aligned with theoretical framework.

	Objectives	Mean	Standard deviation	Remark	Theoretical framework
1	To verify the effect of Teachers teamwork students' performance in higher education institutions.	3.17	.084	Agreed	The Social Learning Development by lev Vygotsky 1962
2	To examine the influence of Brainstorming on students' performance in higher education institutions.	3.10864	.068	Strongly Agreed	The Social Interdependence Theory 1945 by lewins and The Socio cognitive learning theory (1982)
3	To ascertain the influence of teachers mentoring on students' performance in higher education institutions	3.11668	.0572	Strongly Agreed	The educational experience theory
4	To verify the effect of teachers communication on students' performance in higher education institutions	3.14132	.1059	Strongly Agreed	The social constructivism by lev Vygotsky 1962

Source: Field data, 2022

CHAPTER FIVE: DISCUSSIONS

This chapter presents the conclusions and recommendations drawn from the findings of this study. The main purpose of this study is to investigate the different collaborative teaching methods used by teachers and their impacts on students' performance in in higher education institutions in Cameroon.

Discussions

The main objective was to investigate the different collaborative teaching methods used by teachers and their impacts on students' performance in in higher education institutions in Cameroon. The study was guided by one main objective and four specific objectives and subsequently answered four questions. The objectives were: (i) To verify the effect of Teachers teamwork on the student performance s in higher education institutions. (ii) To appraise the influences of Brainstorming on students' performance in higher education institutions in higher education institutions. (iii) To investigate the influence of teachers mentoring on students' performance in higher education institutions. (iv) To determine the effect of teachers' communication on students' performance in higher education institutions.

The findings of the study revealed that Teachers teamwork, Brainstorming, Teachers mentoring and teachers' communication had a positive correlation to students' performance in higher education institutions in Cameroon. Another finding of this research was related to the fact that most participants did not strongly agree on the fact that teachers' teamwork influences students' performance in higher education institutions.

Group work according to Galton and Williamson (1992) citing Franchini is serving the stated learning goals and disciplinary thinking goals of a course. As a body, the aims of working in collaboration or in small groups include the development of intellectual understanding, abilities, and skills such as planning, management, leadership and peer report. The idea of collaborative work can easily be integrated in the teaching learning process.

Collaborative work is a teaching method that ensured interaction between the learners-learners and learners-teachers participation in the classroom. Being a student-centered approach, it encourages cooperation and team work. In most cases, being a classroom practice, students

construct knowledge and accomplish tasks through collaborative interaction. it is advantageous in the sense that it engages students with others who may have different sets of social skills.

Theoretically, collaborative or group work teaching method fall in the line with Bandura's social cognitive theory that has as basic principles observation, imitation and modeling. Students observed their teacher carry out the pedagogic act. These same learners then work in collaboration in small groups and at the end of the activity or lesson; they do a presentation of their work. They observe their teachers and during a micro teaching session, the students imitate their teachers. As such they learn by doing. Also, this hypothesis ties with the new educational theory. Educational experiences are characterized by continuity and interaction.

This explain that teachers who get involved in practical activities such as group work, demonstration in teaching, give the learners the opportunity of collaborating (interacting) with other learners. Also, Problem-Centered Learning model fits this method**.** This style of learning activity requires students to work in teams to progress through a network of interconnected problems that lead to a relevant conclusion. This collaborative teaching and learning approach helps students to see the usefulness of certain skills because they are connected to a real-life problem-solving situation. Conclusively, the correlation between the variables is statistically significant

Looking at the brainstorming, the researcher observed that the relationship between brainstorming teaching method and students' performance shows a weak positive relationship; R (.354), with the R square of .125 (12.5%). This indicates the degree of impact brainstorming has on students' performance. Brainstorming is equally highly predictive of students' performance as noticed from this data, the constant or the intercept in terms of competence building is 25.379 this tells us that when the brainstorming is zero, competence building is 25. 379 this really makes sense when we are predicting the level of students' performance as far as brainstorming is concerned

Notwithstanding these results, the researcher went further to present the result in relation to the theories used. The brainstorming teaching method goes in line with the social cognitive learning theory of Bandura 1986 whose theoretical foundation is based on four primary human capabilities which are; symbolizing, self-regulation, self-reflection, and vicarious learning and also with the operant conditioning theory of B.F Skinner (1948) where the consequences of a response determine the probability of it being repeated. Therefore, the learners are able to perform self-

reflection and as the process continue, and insinuated by the teachers, they are likely to produce the same result and more according to Skinner

Contribution to knowledge.

This study provides an inside on the contributions of collaborative teaching on students' performance in higher education institutions in that it shed further light on ways by which teachers can manage both collaborative teaching and learning both in and out of the classroom and elaborated on the advantages of the different methods to make the teachers be able to select a strategy that will suit their situation.

The study confirmed the relationship that exists between collaborative teaching methods and students' performance in higher education institutions in Cameroon. It also added to existing literature on the subject matter specifically in the Cameroonian context where literature is scares

Limitations of the Study

The empirical results reported herein should be consider in the light of some limitations as Only state owned higher education institutions in Cameroon were sampled therefore the results may not be generalized to other countries.

This study on the impacts of collaborative teaching on students' performance in higher education institutions. A representative of some selected State Universities was used for our findings. These findings were based on questionnaire and Observation carried out mostly on the accessible population of the research**.**

This research falls in the domain of psycho-pedagogy because it deals with the teaching methods, strategies and techniques in the teaching/learning process. It is within a precise framework as it is a write-up that upon defense gives way to obtaining of a master's degree in education**.**

The study focuses only on students and teachers of higher education institutions and cannot apply to students and teachers in other levels of education

The study is be limited due to the time of the year it was carried out which consequently did not involve extensive observations of group meetings.

Suggested Areas for Further Research

1. From the findings of this research, we suggest that a comparative study should be carried out between private and public higher education institutions on the types of collaborative programs they run within their faculties.
2. Follow up of collaboration within the higher education
3. Comparative study on public and private institutions on the implementation of collaborative teaching

Suggestions

Beginning with the state or government, stakeholders that plan, elaborate and develop educational policies, carry out policy orientation and ensure the strict implementation. The researcher saw that competences are implied in all aspects of an individual's life time as stated in the law of orientation and sustainable development goal number 4 and diversity.

In another aspect, teachers in higher education really need to re-evaluate themselves in the aspects of teaching methods and strategies as to what concerns competences building in order to be more efficient and qualified. Teachers should often be recycled through seminars and workshops with appropriate teaching methods laying emphasis on brainstorming, group work and building projects with evaluative measures put in place to ensure its applicability. The state should also ensure the elaboration of harmonized manuals that will help in facilitating the work of both teachers and learners nationwide. Thus, a qualified, skilled and competent teacher renders the quality of education more efficient and effective. Thus, producing able and capable learners.

Again, the government in collaboration with stakeholder should support schools with enough funds and facilities to enable students and teachers to implement competence-based teaching and learning effectively.

Teacher-student's ratios should be emphasized at all levels of education to maximize teacher-student and student-student interactions.

CONCLUSION

Collaborative teaching and students' performance has received recognition in many education systems in recent years. It is adopted widely as a strategy toward improving quality of education. Therefore, efforts are needed to equip teachers with the necessary skills for effective implementation. Education is a process by which the personality of a child is developed. Thus, the education of tomorrow should be able to play its role more effectively by making the individual creative, innovative and effective. This is work deals with the modern teaching methods, techniques or strategies that are used in Education. These techniques are associated with teaching method **(**Brain Storming**,** collaboration or group work and communication). They may learn collaboratively, share information, exchange their learning experiences and work through cooperative activities in virtual learning communities (VIjayalakshmi. M, 2018).

This study was designed to found out if there exist a relationship between collaborative teaching and students' performance in higher education institution in Cameroon. This research study was carried out in partial fulfillment of the requirements for obtaining a master's degree in the faculty of education. This study falls within the field of curriculum and evaluation. The main research question stated "To what extent does collaborative teaching methods used by teachers in higher education institutions impact students' performance?"

The following research questions were derived after operationalizing the main question.

RQ1: To What extent does Teachers teamwork influence students' performance in higher education institutions?

RQ2: To what degree does the perception of brainstorming influence students' performance in higher education institutions?

RQ3: To what extent does teacher mentoring impact students' performance in higher education institutions?

RQ4: To what magnitude does teachers' communication influence students' performance in higher education institutions?

The conceptual hypothesis formulated at the beginning of the study was transformed into the general hypothesis of the study at the methodological framework which states that "There is

no significant relationship between collaborative teaching and students' performance in higher education institutions." Its operationalization generated to four working or research hypotheses as follows;

H0-There is no statistically significant relationship between teachers teamwork and students' performance.

H0- There is no statistically significant link between brainstorming and students' performance.

H0- There is no statistically significant relationship between teacher mentoring and students' performance

H0-There is no statistically significant relationship between teachers communication and students' performance.

On the theoretical bases of this study, the researcher used five main theories which were Bandura's social cognitive learning theory (1982) based on the principle of observation, imitation, modeling, and also based on four primary human capabilities which are; symbolizing, self-regulation, self-reflection, and vicarious learning. The Ridley's new educational theory of experience (2011) based on educational experiences and these powerful educational experiences are as a result of two fundamental principles which are continuity and interaction. The social constructivism theory by lev Vygotsky 1962, The Social Interdependence Theory 1945 by lewins and The Social Learning Development by lev Vygotsky

In the operational framework, the researcher operationalized the independent variable (IV) of the research hypotheses. Meanwhile on the methodological frame work a questionnaire was retained as the main instruments for the collection of data. The questionnaire was constructed following the nominal scale model with four indicators and was administered to a sample of 300 post graduate students from the selected universities. This made the research to have a mixed method in its analysis and the complementary approach of the sequential method in the mixed method research was used. The data underwent a descriptive and an inferential statistical analysis with the aid of the SPSS templates version 25. The results that were obtained where tabulated and also presented using pie and bar charts. The regression analysis was specifically based on the verification of the research hypothesis.

Interpretation and discussions of results were based on the research hypothesis and the theories of the study. The researcher found out that Teacher Teamwork, brainstorming, teacher mentoring and teacher communication are linked to students' performance. By these results, the researcher concludes that collaborative teaching has a positive relationship with students' performance

REFRENCES

Aljohani, M. (2017). Principles of "Constructivism" in Foreign Language Teaching. *Journal of Literature and Art Studies*, Vol. 7, No. 1, 97-107/2018.02.01

Al-Khatib, B. A. (2012). The effect of using brainstorming strategy in developing creative

AlMutairi, A. N. M. (2015). The Effect of Using Brainstorming Strategy in Developing Creative Problem Solving Skills among male Students in Kuwait: A Field Study on Saud Al-Kharji School in Kuwait City. Journal of Education and Practice, 6 (3).

Al-Samarraie, H. & Hurmuzan, S. (2018). A review of brainstorming techniques in higher American International Journal of Contemporary Research, 2 (10). Retrieved from

American Psychological Association. (2017). Guide for dissertation, thesis and project (6th ed.)

American Psychological Association. (2020). Publication manual of the American Psychological

Amin, M.E. (2005). Social Science Research. Concepts, Methodology and Analysis: Makerere University.

Amineh, R.J & Asl, H.D. (2015). Review of Constructivism and Social Constructivism. *Journal of Social Sciences, Literature and Languages*. Vol. 1(1), pp. 9-16, 30 April, 2015/ 2018.02.01

Amoush, K. H. (2015). The impact of employing brainstorming strategy on improving writing Analyzing educational processes. *International Journal of Leadership in and Behavioral Sciences*, 98, 1650-1657.

Anyi (2019) School Counselling as a function of students' Academic Engagement in Selected Secondary Schools in the North West Region-Cameroon. Vol 5 Issue 8, August 2019.

Asimov, E. G., & Shchukin, A. N. (2009). *New dictionary of methodological terms and Association* (7th ed.) https://doi.org/10.1037/000016 Augangabad. S.B.E.S.College of Science.

Bandura A. (1977). *Social Learning Theory*. Englewood cliff, NJ prentice Hall.

Bandura, A. (1977). *Social Learning Theory*. New York: General Learning Press.

Bell, S. (2010). *Project-based learning for the 21st century: Skills for the future*. The Clearing Brainstorming / Tools / UNICEF KE Toolbox Contributed equally to this work with: Islay Mactaggart, Hannah Kuper, G. V. S. Murthy, Joseph Oye, Sarah Polack

Burton, T., (2015), *Exploring the Impact of Teacher Collaboration on Teacher Learning and Development*. (Doctoral dissertation), University of South Carolina, Columbia, pp3-7.

Chi-Cheng, C. (2018). *An Assessment Tool Predicts Learning Effectiveness for Project-Based concepts: The theory and practice of language teaching*. Moscow: ICAR.

Cuellar; K., (2011). *The Effect of Collaborative Teaching on the General Education Student Population: A Case Study*. Unpublished Doctor of Education Dissertation, University of Houston, p4.

Darling-Hammond, L., Hyler, M. E., Gardner, M. (2017). Effective Teacher Professional Development. Palo Alto, CA: *Learning Policy Institute journal*.

Desai, N. (2015). *The Effects of Group Brainstorming on the Auditor's Search for Potential development in higher education: a literature review and framework proposal Development*.

Dizinger, V., (2015). *Professional and inter professional cooperation between teachers in the context of school stress and strain*. (Dissertation) University of Bielefeld Education, 7: 165-180. education. [https://infed.org/mobi/what-is-teaching/. Retrieved: 31st Mach 2021. Educational and Psychological Measurement, 30, 607-610.

Fonkeng, E.G. & Chaffi (2012). *Precis de methodologie derecherche en sciences sociales ERNWACA Cameroon*

Fonkeng, G.E. (2010). *The History of Education in Cameroon*: 1844-2010. Moda Publisher from http://americanenglish.state.gov/files/ae/resource_files/10-48-1-d.pdf

Goddard, Y. L., & Goddard, R. D. (2007). *A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools*. Teacher College Record, 109(4)

Gopkumar, V. (2010). *Group creativity in brainstorming under conflict situations in the context Hammill Institute on Disabilities*. retrieved; http://www.sagepublications.com.

Hedda, M. & Lisa M. A. (2008). *Collaboration to Promote Social Competence for Students with* Helsinki, Finland Hong, Huang and Qiu.

Hosam, A. & Shuhaila, H. (2018). Thinking skills and creativity: a review of brainstorming House**,** *A Journal of Educational Strategies, Issues and Ideas* **83(**2), 39- 43.

https:// statistics.Laerd.com. linear regression in SPSS statistics. Procedueres…

https://doi.org/10.1080/00098650903505415.

https://www.scribbr.com.

Hyde, T. (2008). Better Brainstorming: Achieving the impossible. Retrieved 25 Oct. 2011 from IDEO, IDE, Heifer International, ICRW. Human-Centered Design Toolkit. 2009 (2nd Edition). *International Journal of Whole Schooling*, (2014).

J.Bruner, W. James, J. Dewey, J. Piaget and L.S. Vygotsky (2016). *Learning and Teaching: Theories, Approaches and Models 2nd edition by Celal Akdeniz*, Hasan Bacanlı, Engin Baysen et al,.

Jenna, W. (2020 February 11). *10 effective team brainstorming techniques*. WeWork HQ,

Jennifer, M. (2016). Introduction: Group Work. University of Oregon. *Journal of Education and Practice*, 6(35), 88–92.

Johnson, D.W. and Johnson, R. (1999). *Learning together and alone: Cooperative, competitive, and individualistic learning (5th Edition).* Boston: Allyn & Bacon.

Johnson, D.W., and Johnson, R. (1989). *Cooperative and competition: Theory and research*. Edina, MN: Interaction Book Company.

Johnson, D.W., and Johnson, R.T. (1984). Circles of Learning. Washington, DC: Assoc. Supervision and Curriculum Dev. *Journal of Education and Practice*, 6(35), 88–92.

Joyce, B. R., & Calhoun, E. (1996). *Creating Learning Experiences: The Role of Instructional*

Kapur, R. (2019). *Improving Quality and Efficiency of Education*. 2-6 retrieved from https//www. Researchgate.net/publication/333660908-improving-Quality-and-Efficiency-of Education

Kliegl, J., and Weaver K., (2014). *Teaching Teamwork through Co-teaching in the Business Classroom, Business and Communication Quarterly*, pp8-9.

Krejcie, V. & Morgan, D.W. (1970). Determining the sample size for research activities.

Kumbhar, K. N, (2018). *Brainstorming technique: Innovative Quality Management Tool for*

Law No 2004/022 of 22 July 2004 to lay down the rules governing the organization and functioning of private education in Cameroon.

Law No 98/004 of 14th April 1998 lays down guidelines for education in Cameroon

Little, J. W., (1990). The Persistence of Privacy; Teachers College Record 91 (journal), pp509–536.

Maija, A. Outi, H. (2019). project-based learning (PBL) in practice: active teachers views of its

Makoge, N.Y. (2017). *Constructive Cooperative Learning and classroom productivity: Case of Government Bilingual teacher Training College*, Yaounde. Unpublished Masters Thesis, Faculty of Education, University of Yaounde 1.

McCarthy, P., Brennan, L. and Vecchiarello, K., (2011), Parent -School Communication in the Inclusive Classroom: A Comprehensive Model of Collaboration in Education. (*International Journal of Humanities and Social Science*), pp102-108.

Mcleod, S.A. (2018, january, 21). Skinner-operant conditioning. Simply psychology. https://www.simplypsychology.org/conditioning.htmlAffiliation: International Centre for Evidence in Disability, London School of Hygiene & Tropical Medicine, London, United Kingdom http://orcid.org/0000-0001-6287-0384

mild disabilities in the General Classroom: A Structure for Providing Social Support.

Misstatements and Assessment of Fraud Risk in the Presence of Pressures and

Moolenaar, N., Sleegers P., and Daly A., (2012), teaming up: Linking Collaboration Networks, Collective Efficacy, and Student Achievement, Teaching and Teacher Education (Journal), pp251–262.

Oben, N. W. (2018). "The effect of cooperative learning strategies and attitudes on Performances in secondary school mathematics in the south west region of the republic of Cameroon". International Journal of Trend in scientific Research and Development (ijtsrd), Volume-3, issue-1, pp. 225-240, http://www.ijtsrd.com/papers/ijtsrd18970.pdf

Pallant, (2005). SPSS Survival manual: a step by step guide to Data analysis Using IBM SPSS. Pearson Education, Inc.

Ponce and Pagán-Maldonado, (2015) Mixed Methods Research in Education: Capturing the Complexity of the Profession International Journal of Educational Excellence, (2015) Vol. 1, No. 1, 111-135. ISSN 2373-5929.

Rabeeh Harati(2012). Collaboration teaching and its role on education performance and students achievement,European Journal of Experimental Biology, 2012, 2 (6):2182-2187.

Rance-Roney, J.A. (2010). Reconceptualizing interactional groups: Grouping schemes for

Reed, D. K., and Groth C., (2009), Academic Teams Promote Cross-curricular Applications that Improve Learning Outcomes, (Middle School Journal), pp12–19.

Rocca, C. La, Margottini, M. and Capobianco, R. (2014) Collaborative Learning in Higher Education. Open Journal of Social Sciences, 2, 61-66. http://dx.doi.org/10.4236/jss.2014.22009

Rodrigo, L. et al (2017). Connecting competences and pedagogical approaches for sustainable Sajedi, S.P. (2014). Collaborative summary writing and EFL students' L2 development. Social

Skinner, B.F. (1948). Superstion of the pigeon. Journal of Experimental Psychology

Smith, M.K. (2018). What is teaching?' in the encyclopedia of pedagogy and informal

Stephanie, K. & Kathleen, M. O. (2010) .The theory and application of contextualized teaching

Tabachnick & Fidell, (2007). Standard multiple regression. Boston: Pearson Education, Inc.

Tabachnick, Babara & Fidell Linda.S, (2007). Using multivariate statistics, fifth edition. Boston:

Tambo, I.L. (2012). Prinviples and methods of teaching. 2nd Edition, Cameroon: University of Buea.

Tanyi, E.M. (2009). Major theories of learning: the process of how and when we learn. Yaoundé: African publications.

techniques in higher education. centre for instructional technology & multimedia,

universiti sains malaysia, penang, malaysia at Science direct.

University, Kerala. Retrieved from http://shodhganga.inflibnet.ac.in

Villa, R., Thousand, J., & Nevin, A., (2013), A guide to co-teaching: New Lessons and Strategies to Facilitate Student Learning, (Corwin Press journal), pp44-50.

Wadge, & Kailas, N. (2010 August 30-31). Brainstorming: an Innovative Technique paper

Winfrey, E.C. (1999). Kirkpatrick's Four Levels of Evaluation. In B. Hoffman (Ed.), Encyclopedia of Educational Technology.Retrieved October 8, 2009.

www.ccsenet.org/ies International Education Studies Vol. 8, No.

Yasemin, G. (2016). Research on group work and collaborative work and its implications for

Zajkov. O and Mitrevski B. (2013). Project-based learning: dilemmas and questions * E-mail: islay.mactaggart@lshtm.ac.uk

APPENDIX

Authorization letter

Questionnaire

Krejcie and Morgan Table for Sample population

Authorization letter

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
****
UNIVERSITE DE YAOUNDE I
****
FACULTE DES SCIENCES DE L'EDUCATION
****
DEPARTEMENT DE CURRICULA ET EVALUATION
****

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
****
UNIVERSITY OF YAOUNDE I
****
FACULTY OF EDUCATION
****
DEPARTEMENT OF CURRICULUM AND EVALUATION
****

The Dean

N° _____/21/UY1/FSE/VDSSE

AUTHORISATION FOR RESEARCH

I the undersigned, **Professor BELA Cyrille Bienvenu,** Dean of the Faculty of Education, University of Yaoundé I, hereby certify that **AFANWI Ethelbert Mugri,** Matricule **20V3107,** is a student in Masters II in the Faculty of Education, Department: *CURRICULUM AND EVALUATION*, Specialty: *DEVELOPER AND EVALUATOR OF CURRICULUM.*

The concerned is carrying out a research work in view of preparing a Master's Degree, under the supervision of **Pr. NDI Julius Nsami.** His work is titled « *The impact of collaborative teaching on students' performance in Higher Education Institutions* ».

I would be grateful if you provide her with every information that can be helpful in the realization of his research work.

This Authorization is to serve the concerned for whatever purpose it is intended for.

Done in Yaoundé..... 15 DEC 2021

For the Dean, by order

Le Vice-Doyen
BELA Auguste OWONO-KOUMA

Questionnaire

REPUBLIQUE DU CAMEROUN
******
UNIVERSITE DE YAOUNDE I
******
FACULTTES DES SCIENCES DE L'EDUCATION
******
DEPARTEMENT DE CURRICULA ET EVALUATION

REPUBLIC OF CAMEROON
******
THE UNIVERSITY OF YAOUNDE I
******
THE FACULTY OF EDUCATION
******
DEPARTMENT OF CURRICULA AND EVALUATIONS

STUDENTS QUESTIONNAIRE

Dear Student,

I am AFANWI ETHELBERT MUGRI, a Masters II student at the Faculty of Education of in University of Yaoundé 1 in the Department of Curriculum and Evaluation, Specialized in Curriculum Development and Evaluation. My research topic is "**The Impact of Collaborative Teaching on Students' Performance in Higher Education Institutions".** I plead to take some of your time to answer this questionnaire, whose main objective is to investigate the different collaborative teaching methods used by teachers and their impacts on students' performance in higher education institutions in Cameroon.

NB: Your responses to this questionnaire shall be kept confidential and used for research purposes ONLY.

SECTION A: Sociodemographic data

Tick the right box

Gender: Male ☐ Female ☐

Age group: 10-15yrs ☐ 16-20yrs ☐ 21-25yrs ☐ 26-30yrs ☐ 31yrs+ ☐

Name of Institution_____

Name of Faculty_____

SA= Strongly Agree **A**= Agree **D**=Disagree **SD**= Strongly Disagree

SECTION B: The impact of teachers' teamwork on students' performance

No	Items	SA	A	D	SD
1	Using lesson plans hand-in-hand with colleagues is more productive				
2	Teamwork aid teachers' cooperation				
3	Making use of peer-group tutoring facilitates teaching				
4	Team members are to actively participate in every group session				
5	Team members share information in every team				

SECTION C: The impact of brainstorming on students' performance

No	Items	SA	A	D	SD
6	Group work requires ethics				
7	Teachers are more productive when they collectively reflect over classroom problems				
8	Group work provide opportunity for everyone to share their ideas				
9	Brainstorming creates an atmosphere of inclusivity				
10	Brainstorming has a clear outcome				

SECTION D: The impact of teacher mentoring on students' performance

No	Items	SA	A	D	SD
11	Self-motivation improves learning				
12	Self-discipline improves learning				
13	Giving increased support to students facilitates learning				
14	Students need support and encouragement				
15	Mentoring methods need to be based on individual needs				

SECTION E: The impact of teachers' communication on students' performance

No	Items	SA	A	D	SD
16	When given clear instructions students know when and how work is to be done				
17	Feedback received from colleagues and students improve your teaching method				
18	Asking questions requires students to think of ways or steps to solve them				
19	Encouragement promotes students to participate more in class				
20	Being understanding and friendly opens students positively towards the lesson				

SECTION F: Students' performance

In what range was your grade in Research methodology Course?

A+ - A- ☐

B+ - B- ☐

C+ - C- ☐

D+ - E ☐

F ☐

In what range was your grade in Psychology Course?

A+ - A- ☐

B+ - B- ☐

C+ - C- ☐

D+ - E ☐

F ☐

THANK YOU FOR RESPONDING TO THIS QUESTIONNAIRE

Appendix 2: Krejcie and Morgan Table for Sample population

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586