JAQMER journal of action qualitative & mixed methods research
Volume , Issue , 20
Journal of Action Qualitative & Mixed Methods Research (JAQMER)

Insights into college students' perceptions of cooperative learning in college classrooms: A mixed methods approach

George Atta*

To cite this article:

George, A. (2025). Insights into college students' perceptions of cooperative learning in college classrooms: A mixed methods approach. *Journal Action Qualitative & Mixed Methods Research,* Volume 4 (Issue 2), 52-69 [Online] www.jaqmeronline.com DOI: 10.5281/zenodo.17143013

Article Info: *Received: April 7th, 2025* *Revised: July 28th, 2025* *Accepted: August 11th, 2025*

Abstract. This mixed-methods study aimed to investigate college students' perceptions of cooperative learning (CL) and its relationship with their academic success and social development. The study employed a convergent mixed-method design. One hundred twenty-two (122) college students were sampled for the quantitative phase of the study, while seven participated in the qualitative section. The qualitative analysis revealed that students benefit immensely from cooperative learning (CL), as it improves their academic success, fosters friendships, enhances critical thinking skills, and promotes positive interdependence. Additionally, students develop the social skills necessary for their future careers. Both the qualitative and quantitative analyses revealed that the role of instructors is crucial in affecting students' attitudes toward CL. Students develop positive attitudes toward CL if instructors effectively discharge their roles to maximize learning. Failure on the part of instructors to discharge their expected roles leads students to develop negative attitudes toward CL.

Keywords: Cooperative learning, collaborative learning, interdependence, instructors, constructivist

Introduction

There has been a dramatic change in student composition in colleges and universities over the past 40 years (Naz & Murad, 2017). This results from students with different ethnic, racial, cultural, socioeconomic backgrounds, physical abilities, sexual orientations, ages, religious beliefs, political beliefs, and learning styles (Naz & Murad, 2017). This kind of diversity in classrooms calls for new discussion and pedagogy if all students are to achieve their goals in education. The primary question is, what pedagogy type (s) will be appropriate for instructors to help everyone learn effectively and efficiently in this modern age of technology and artificial intelligence? Also, recent research in teaching and learning supports constructivist philosophy and is very popular among educators worldwide (Rudhumbu, 2024; Nanor, Hanson, & Mahama, 2024). This perspective was advocated by Piaget (1896-1980), Dewey (1938/1964), and Vygotsky (1896-1934), representing a paradigm shift from teacher-centred instruction associated with behaviourism to a learner-centred approach that relates to cognitive theory (Gudinge, 2018). Constructivists believe learners construct their knowledge and understanding by interacting with their environment. Vygotsky (1978), the Russian psychologist's social constructivism perspective (socio-cultural theory), states that learning takes place in a context where the construction of understanding results from interacting with others in the social environments in which knowledge is to be applied (Gudinge, 2018; Nanor et al., 2024; Rudhumbu, 2024). The constructivist paradigm empowers the learner in the teaching and learning process. The role of the teacher is to engage learners to discover knowledge and allow them to reflect upon what is learnt. Again, the world has become a global village where goods and services are moved. Individuals can take up any job appointment anywhere at any time. In the workplace, businesses stress performance because jobs and tasks have been integrated. Collaboration, teamwork, and interpersonal communication skills are

* University of Saskatchewan, Canada, georgeprinceatta@gmail.com, https://orcid.org/0009-0000-0182-0674

emphasized (Rudhumbu, 2024; Slavin, 1996). Cooperative learning is considered an instructional strategy to help students develop the necessary social skills to succeed in the world of work.

Historically, collaborative learning was used in elementary and high schools, thus compelling researchers to research it so much. Still, in the 1980s, it surfaced as a significantly higher education pedagogy (Cabrera et al., 2002). As such, collaborative learning (group projects) in undergraduate and graduate courses has recently gained popularity. For thirty years, research has dramatically increased about using cooperative learning at the university level (Rodger, Murray & Cummings, 2007; Nhan & Nhan, 2019; Ogalloh, Wamocho & Otube, 2018). It is regarded as one of the most extensively researched instructional strategies (Molla & Muche, 2018; Onwuebudzie & DaRos-Voseles, 2001).

Cooperative learning as an instructional strategy has its roots in the social interdependence theories of Morton Deutsch and Kurt Lewin (Onwuebudzie & DaRos, 2001). These theories and other studies have stated that social interdependence positively influences individual interaction in each situation, "which subsequently affects the outcomes of that interaction" (Onwuebudzie & DaRos, 2001, p.61). Positive goal interdependence occurs when learning is cooperative, and students see their success to be enhanced by the success of other students (Onwuebudzie & DaRos, 2001). On the other hand, negative interdependence is created in a competitive environment, and students tend to compete with one another and view their chances of success to be diminished by the success of their colleagues. In contrast, neutral interdependence occurs in an environment where students learn individually so that one student's success is independent of the other (Onwuebudzie & DaRos, 2001).

Many theories and methods, including constructivism (social learning theory) by John Dewey (1938), sociocultural theory by Vygotsky (1978), cognitive development theory by Jean Piaget (1936), Kohn's (1996) student-directed learning theory (SDLT), the humanistic approach, and theories on second language acquisition, have shaped and anchored the theoretical basis of the CL notion (Alhebaishi, 2019; Nannor et al., 2024; Rudhumbu, 2022/2024). CL emphasizes the core principles of the humanistic approach, including the importance of student autonomy and a supportive learning environment in the educational process. When students collaborate, they help each other, pay attention to one another, accept differences, and work together to solve problems (Alhebaishi, 2019; Nanor et al., 2024). This approach reduces anxiety and tension, thereby enhancing motivation. According to the sociocultural paradigm, learning occurs through interpersonal interactions and is seen as a social process rather than an individual one (Alhebaishi, 2019; Nanor et al., 2024). Dewey (1938) noted that individuals often learn new things and create meaning by engaging with peers in a safe environment and through personal experiences. Similarly, Piaget (1964) argued that social experiences, knowledge, language, norms, morality, and values are all gained through social contact (Alhebaishi, 2019; Nanor et al., 2024). Additionally, Vygotsky (1978), in his sociocultural and constructivist perspectives on learning, asserted that in a CL setting, students can share ideas and information to achieve common goals (Alhebaishi, 2019; Gudinge, 2018; Rudhumbu, 2024). He further stated that social interaction fosters a positive learning environment, thereby elevating the overall achievement of the group (Alhebaishi, 2019; Gudinge, 2018). Learners can negotiate meaning in a CL context by listening to one another, asking questions, sharing ideas, discussing problems, elaborating on concepts, and defending their positions. This environment facilitates a high level of comprehensible input and optimizes student conversation, which helps in learning (Alhebaishi, 2019). According to the theory, when learners interact socially, meaningful information is constructed. This theory is relevant to the study because it supports the basic idea that teachers, students, and facilitators need to acknowledge and value different points of view in the classroom without limiting social interaction. This fosters an environment where students can actively participate in constructing their knowledge, which leads to successful learning outcomes (Nanor et al., 2024). Also, Kohn's (1996) SDLT theory influences the current study when the five dimensions of CL are deployed successfully in colleges and universities (Rudhumbu, 2024). According to Kohn (1996), student-directed learning encourages students to learn and educates them to delegate duties and responsibilities to one another (Rudhumbu, 2024). To engage students in CL behaviour and foster a deeper comprehension of what they will be studying, the SDLT capitalizes on their curiosity and innate drive for competence (Lynch, 2018; Rudhumbu, 2024). According to Kohn's (1996) SDLT, lecturers

should employ a range of structured learning activities to ensure that students are completely engaged during CL. Students should be allowed to actively confront and question one another in their groups, share and discuss their ideas, and adopt their preferred group learning techniques through these learning activities (Rudhumbu, 2024). According to this theory, lecturers must design group learning exercises that are creative, open-ended, intellectually demanding, and require higher-order thinking skills to inspire students to learn (Kohn, 2021; Rudhumbu, 2024).

According to the Cooperative Learning Center at the University of Minnesota, cooperative learning involves relationships among students. Five elements must be satisfied: positive interdependence, individual accountability, interpersonal skills, face-to-face interaction, and processing out (Jones & Jones, 2008; Nanor et al., 2024). These elements have emerged as the essential pillars of cooperative learning outlined by Johnson and Johnson (1999) as an instructional strategy (Ait Hattani, 2024; Jones & Jones, 2008; Nanor et al., 2024; Rodger et al., 2007; Onwuebudzie & DaRos-Voseles, 2001; Ogalloh et al., 2018). First, face-to-face interaction pertains to situations where students actively engage with one another to contribute to group performance. Second, individual accountability requires participants to take responsibility for their portion of the work, ensuring that no single person or a few individuals are left to handle all tasks. Third, interpersonal skills are crucial for effective cooperative learning. Fourth, group processing encourages members to assess their goal achievement. It is more effective when instructors establish clear objectives, allow sufficient time for group work, and provide explicit expectations regarding group performance (Nanor et al., 2024; Rudhumbu, 2024). Fifth, positive interdependence arises when students cooperate, support, and help one another in the group to achieve success (Jones & Jones, 2008; Rudhumbu, 2024). In positive interdependence, students learn from the ideas and contributions of their group members such that "group members sink or swim together" (Jones & Jones, 2008, p. 66). This interdependence is fostered by establishing mutual learning goals, enabling students to learn the assigned material and ensuring that their peers do the same. In this study, the researcher examined college students' perceptions of CL and its relationship with their academic success and social development. Additionally, it investigated how instructors influence students' attitudes toward cooperative learning.

Campbell and Li (2006) examined Asian students' perceptions of collaborative learning concepts in the form of group work and group assignments. Twenty-two Asian students participated in one-hour individual semi-structured interviews. The study revealed that Asian students had high value for "classroom group discussions where they could interact with students from other cultures and backgrounds, improve their English language skills, enhance their cultural understandings and provide them with opportunities to make friends" (Campbell and Li, 2006, p.78). However, they expressed negative views about group assignments where marks were shared to determine the performance of the group. Factors that affected group dynamics included members' attitudes and willingness to cooperate and contribute as a team, the composition of the group, students' competing demands on students' time and attention, heterogeneity from the natural abilities of students, and the varying cultural values and beliefs held by group members (Campbell & Li, 2006, p.78). Most Asian students were frustrated with having to complete such compulsory group assignments.

A meta-analysis conducted by Johnson et al. (1998) using students who were 18 years and older found that the use of CL in the classroom enhanced "greater liking among students than does competing with others (effect size = 0.68) or working on one's own (effect size = 0.55)" (p.33). They contended that this was even pronounced among students from different ethnic, cultural, language, social class, ability, and gender groups. The result revealed that college students who engaged in cooperative learning perceived greater social support about academic and personal from both peers and instructors than students who worked competitively (effect size = 0.60) or individually (effect size = 0.51) (Johnson et al., 1998).

Jebson (2012) studied the impact of the cooperative learning approach on selected senior secondary schools in Adamawa State in Nigeria, with 120 students aged between 16-19 offering mathematics at senior secondary school two (SS 2). The study employed a quasi-experimental design where samples were grouped into A and B-experimental and control groups. The result indicated that the experimental

group (cooperative group) performed better than the control group. The implication is that the "cooperative learning approach has a significant effect on students' performance in secondary school mathematics" (Jebson, 2012, p.107). The study also revealed "that sex difference or gender has no significant influence on the performance of students in mathematics when taught using or not using cooperative learning approach ($p<0.05$)" (p.107).

Moore (2010) conducted a mixed-method study to examine students' perceptions relating to the use of cooperative exams in an introductory leadership class at Texas A&M University during the Fall 2009 semester. Participants were all students who enrolled in ALED 201 –Introduction to Leadership. Seventy participants were selected for the study. The study employed a concurrent design. The following results were outlined: (1) Many students (n=63, 98.4%) stated that there were advantages to the use of cooperative exams, while more than half (n=38, 59.4%) indicated that there were disadvantages to the use of cooperative exams; (2) Four broad themes were revealed through the qualitative analysis concerning the advantages of using cooperative exams, "the opportunity for discussion to increase understanding, the opportunity to increase the overall grade on the exam, the opportunity for collaboration and teamwork, and increased individual accountability" Moore, 2010, p.78). In a concurrent mixed method approach, Kupczynski et al. (2012) compared the effectiveness of online CL strategies in discussion forums with traditional online forums conducted at a Hispanic-serving institution with 56 participants, 35 females and 21 males. The quantitative results revealed no significant differences in students' success between CL and traditional formats. It was observed from the qualitative data that "students in the CL groups found more learning benefits than the traditional group" (Kupczynski et al., 2012, p.81).

Problem Statement

CL has been researched extensively. While studies on the benefits, implementation, and problems of cooperative learning (CL) have been conducted, limited studies have been conducted on college students' perceptions of CL and how it helps them achieve their learning outcomes. Also, instructors' roles in students' group learning or projects (CL) greatly influence students' attitudes. However, there are limited studies in this area. Chapman and Auken (2001) alluded to this: "While a litany of research has described group projects' implementation, benefits, and drawbacks, no empirical research has yet addressed the instructor's role and its ancillaries in influencing students' attitudes toward group work" (p.117). Therefore, more studies must be conducted to ascertain the positive and negative effects on students' learning. Again, there is limited research employing a mixed methods approach to study college students' perceptions of cooperative learning. The few mixed methods research studies that have been conducted have failed to mix data from both qualitative and quantitative sources. Burrows (2013) argued:

> Without mixing, the study becomes a multi-method study with qualitative and quantitative data analyzed to tell two distinct stories. By not including mixing, the primary concepts of a combined methodology and one that builds upon its parts to enhance its strength are lost (p. 38).

The study aims to explore college students' perceptions of CL as an instructional strategy, its effectiveness on their learning outcomes and social development, and the instructors' role in developing college students' attitudes towards CL.

The following research questions guided the study:

> (1) How effective do college or university students find cooperative learning regarding their learning outcomes?
>
> (2) What skills and attitudes do college/university students learn when they engage in cooperative learning?
>
> (3) How do college/university students perceive the instructors' role in cooperative learning?

(4) How do college students' perceptions regarding the role of instructors in cooperative learning impact their attitudes toward cooperative learning?

Methodology

Method and paradigm of research

This mixed-methods study with a convergent mixed design focused on data transformation. Mixed methods study integrates qualitative and quantitative approaches to provide a broader understanding within a single study (Creswell & Plano-Clark, 2017; Creswell & Plano-Clark, 2010; Şimşek & Buldukoğlu, 2024; Stupnisky et al., 2014). Using qualitative and quantitative methodologies in collecting and analyzing data helps compensate for each methodology's weaknesses rather than one method alone (Cohen, Manion & Morrison, 2018; Creswell & Plano-Clark, 2010). The convergent mixed design approach is a research method that collects data simultaneously, analyzes it individually, and compares the results from qualitative and quantitative databases. The qualitative component is in the discourse analysis pattern and is shaped by the interpretive paradigm, and the quantitative component is also in a descriptive survey design and is shaped (Gunbayi, 2020; Şimşek & Buldukoğlu, 2024) by the pragmatism paradigm.

Sampling

Seven students were sampled for one-on-one semi-structured interviews through a purposeful sampling approach in the quality phase of the study. The demographic characteristics of the participants were four males and three females, while in the quantitative phase of the study, a sample of one hundred twenty-two (N= 122) students participated based on a simple random sampling.

Data collection

The study was conducted in one large Midwestern university in the United States of America. In the qualitative phase of the study, seven students were sampled for interviews; each interview lasted approximately one hour, and all were recorded for transcription. The demographic characteristics of the participants were four males and three females. In the quantitative phase of the study, a paper and pencil survey was administered to a sample of one hundred twenty-two (N= 122) students to examine their perceptions of CL quantitatively. The survey took about 20 minutes to complete. The study adopted a survey instrument from Chapman and Auken (2001) for the quantitative phase. The instrument has been validated. Scale reliability was conducted to ensure the reliability of the instrument. Internal reliability was sufficient for all the scales (α = .83 to .91). The paper and pencil survey contained demographic variables to describe the sample. The survey contained 32 items created on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to measure the perceived benefits of cooperative learning, attitude toward cooperative learning, work and grade equity concerns, and perceived social skills learned in CL. The instructor's role in CL was measured with a five-point Likert scale (1 = never, 2 = not very often, 3 = sometimes, 4 = quite often, 5 = always) (See Table 2). Perceived benefits of cooperative learning were assessed with nine items, and participants responded to statements such as: "Cooperative learning enhances my communication skills" and "Cooperative learning prepares me to work in a company" on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The internal reliability was found to be sufficient (α = 0.91). Six items measured participants' attitudes toward cooperative learning with statements such as, "My attitude towards cooperative learning is positive" and "Working cooperatively with other students is desirable to me" on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The internal reliability was found to be sufficient (α = 0.88). Participants were asked to report on their experiences of how they felt working in CL groups. This was assessed with five items, and participants responded to statements such as, "I do the work of others in cooperative learning" and "I worry about my grade in cooperative learning" on a 5-point scale. The internal reliability was sufficient (α = 0.83). Perceived social skills learned in cooperative learning were assessed on a 5-point

Likert-type scale anchored by 1 = strongly disagree to 5 = strongly agree, which was used to measure participants' perceptions of the social skills they learn when they engaged in cooperative learning. Eight items were used, and participants responded to items such as, "I learn to respect the opinion of others in cooperative learning groups," and "Working cooperatively advances my interpersonal relationships with other students. Internal reliability was sufficient ($\alpha = 0.87$). The rate with which instructors discussed group management and evaluation methods with students in cooperative learning was measured on a 5-point frequency-of-use scale (1 = Never, 2 = not very often, 3 = sometimes, 4 = quite often, 5 = always). Five items were used, and participants responded to items such as "Instructors tie cooperative learning to course objectives" and "Instructors communicate the benefits of cooperative learning to students." Internal reliability was sufficient ($\alpha = 0.87$).

Ethics statement

On March 21st, 2024, the University of North Dakota's institutional review board (IRB) granted permission for the study with an assigned number UND-551. Written permissions were sought from instructors about involving their students in a study. When permissions were granted, students who decided to participate in the research were educated about the purpose of the study and the confidentiality of the data before filling out the data-collecting forms, and their signed and verbal consent was obtained. During the interviews, audio recordings were made with the students' agreement. All student information was collected and stored under the principle of confidentiality. When transcribing the interviews, codes were used instead of actual names.

Data analysis

In the qualitative phase of the study, an initial analysis started by transcribing all seven interviews into a Word document and then began with open coding by reading the transcripts line by line to identify codes or significant statements and highlighting and writing the codes in the margin of the transcripts. Thereafter, the codes/significant statements were transferred onto an Excel spreadsheet for categories or patterns and themes that emerged from the data to be developed. A phenomenological approach of inquiry with deductive, generative, and constructive was used to analyze the interviews (Onwuebudzie & DaRos-Voseles, 2001). A method of constant comparison (Glaser & Strauss, 1967) was used to categorize units that appeared the same in content (Onwuebudzie & DaRos-Voseles, 2001). To ensure that the codes, categories, and emerging themes were correct, the researcher gave the data sheet to two colleagues to check it. After that, we met to discuss the codes, categories, and emerging themes to agree on the themes. The following steps were taken to ensure the accuracy and trustworthiness of the study (Lincoln & Guba, 1985). First, the researcher transcribed the interviews verbatim and compared the transcripts to the original tape. This was done to ensure that the words of the participants were represented. Second, member checking was utilized, where the researcher returned the transcripts and the analysis to participants to verify if the findings accurately represented what they had shared. This procedure demonstrates to the participants that the researcher values their perceptions and contributions (Robson, 2002). Third, peer debriefing was conducted to compare the codes and the emerging themes from the one-on-one interview. All the names that appeared in the analysis are pseudonyms.

In the quantitative phase of the study, data were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics, such as frequencies and percentages, and inferential statistics, including logistic regression and correlation, were computed to describe participants' demographic and other sample characteristics.

Findings

The following themes emerged from the data concerning the effectiveness of cooperative learning on college students' learning outcomes in the qualitative phase of the study.

Positive interdependence

Positive interdependence has been dubbed as the first major requirement for an effective and successful CL activity among members of the group (Onwuebudzie & DaRos Voseles, 2001). Each member has a unique role to play in the group effort. In positive independence, members learn from the ideas and contributions of each member in such a way that "group members sink or swim together" (Jones & Jones, 2008, p. 66). Participants overwhelmingly noted that in CL, group members learn from each other since, in class, one might learn something better than others. John stated,

> *"If people come together, it is like the jigsaw. You put your pieces together to make up the whole. So cooperative learning is like you learn from me, and I learn from you and at the end, we all learn the same thing." Ben also reiterated, "If you get along in the group, you learn or help each other*."

John noted,

> *"Honestly speaking, I think collaborative learning is the best learning for me because if an assignment is given or a piece of work is given to do it as a group, I think there are certain things I might not know that other members of the group will know and there are equally certain things that some members will not know that I will know. So we are going to blend our knowledge. I will learn from the members of the group while they will also learn from me. Their vacuums will be filled by knowledge from me and my vacuums filled by the knowledge from them."*

Communication skills

Participants stressed that working cooperatively in learning groups helps develop their communication skills in groups, and how to talk in a group. Ben stated, "I think one of the skills is communicating with other people. Is kind of you learn when to talk in a group and when to listen?" Not only learning how to communicate but also how to communicate for members to better understand, since members may come from different cultural backgrounds. Dora noted, "We learn communication skills because you have to be able to communicate well for the other members to understand."

Advances in academic achievement

Participants stressed that engaging in cooperative learning advances their academic success as they learn from each other, and this can be translated into courses. Sarah stated, "So it advances your academic learning in the sense that the group members can help you to understand something you could not understand in class. I guess in a group we bring what we learn in class and try to discuss it even more." Also, participants stated that cooperative learning could either improve their grade (s) in courses or not, depending on the type of group in which they find themselves. If the group members are committed and have the same work ethic, then their learning outcomes/grades will improve. But if the group members are not committed enough, obviously, their grades or learning outcomes would be low. Ben emphasized,

> *"I think at times I feel like it has enhanced my grade because the group was good. It depends on the group. If there is a group where you get along and you collaborate and everybody does their part, it does help your grade. But if you are in a group where some people kind of pull back or they don't do anything or they don't listen to your suggestions, then it kind of hurts your grade."*

Better understanding

Cooperative learning also promotes a better understanding of content materials among students. Participants indicated that sometimes, in the classroom, some instructors explain in complex terms, and therefore, they find it difficult to understand. Also, in cooperative groups, some members may

understand things better than others in the classroom, and they can explain clearly to the understanding of members. John confirmed, "*You know, some instructors don't know how to explain things. So when we get into cooperative groups, some members of the group explain more lucidly and more clearly than some instructors, and there I am able to understand. Some members in cooperative learning groups simplify it to the understanding of each other."*

Learn about the culture of group members

Ansari (2006), citing Johnson and Johnson (2005), emphasized that the utilization of CL builds a culturally pluralistic society within the four walls of the school. Johnson and Johnson, 2005) stated:

> Cooperative learning promotes greater efforts to achieve, more positive relationships, and greater psychological health than do competitive and individualistic learning. These outcomes indicate that when cooperative learning is used the majority of the school day, diversity among students can be a potential source of creativity and productivity (p. 16).

Participants stressed that in cooperative learning, they just don't end up doing academic work, but are also able to socialize and learn from each other's culture, especially when the class is diverse. Dora had this to say, *"I get to know their culture better because of group work." Noah also posited, "We also learn about other people's culture."*

The world of work

Participants stated that CL helps to prepare them for the world of work. In the current job market, businesses in their advertisements for hiring stress that they want people who can work as a team player. The concept of cooperative learning prepares students when they work with other people to develop their skills. Sarah stressed,

> "*Right now, if you read most of the job descriptions, one keyword that runs through is a team player, be a team player. We work in groups and so just the idea of presenting yourself and trying to work with the group helps you to build your life. You know, when you go outside the school, you are going to work with a lot of people."*

Themes that emerged from the social skills learned when engaged in CL were:

Positive attitudes

Research has shown that engaging in CL by students "promotes more positive attitudes toward learning, the subject area, and the college experience than does competitive or individualistic learning" (Johnson et al., 1998, p. 34). The authors stressed that several social psychological theories also "predict that students' values, attitudes, and behavioral patterns are most effectively developed and changed in cooperative groups" (p.34). Participants emphasized that working cooperatively with other students instilled in them positive attitudes toward group members, the course assignment, and the promotion of their academic success. Dora confirmed,

> "*…and so the first one was a positive attitude, and students can have the right frame of mind to know that we can do it because we are in a group. There are people available who are ready to make up for our differences, and so we will be able to present a common front."*

Learn to respect the views of others

Participants demonstrated that in cooperative learning, they learn to respect the views and opinions of members. Noah stated, *"You also learn to accept other people's point of view because I am looking at it from a different angle, others will also look at it from a different angle. But at the end of the day, you must come to a compromise position. You must disagree to agree because you must present something*."

The following themes emerged from the perceived role of instructors:

Participants' views of instructors' roles in CL

Participants believed that the instructors should perform the role of facilitators if students were to enjoy the maximum benefits of cooperative learning. Doreen stated, *"From my perspective, I think the instructor should have facilitation responsibility. The instructor needs to explain the goal of this activity, explain responsibility, and what he/she wants us to do. First, explain the goal, explain the activity, and give more instructions about the activity*."

They also stressed that some instructors do not perform this role effectively. Ben noted, "*They assign the group and make you work. They are not facilitators. They just kind like trust that you would do your work."*

Supervision

Participants stressed that instructors should supervise students' work when working cooperatively. They noted that some instructors do that while others do not. Sarah confirmed, *"Yes, I think a few of them supervise. A few of them will visit from group to group and offer suggestions like, what about this line? Why don't you think about this line too? Some do, and some do not so much. Some put you into groups and go out and do other things."*

Explain the purpose or goal of the activity

Participants emphasized that instructors should explain the purpose and goal of the assignment. The type of skills and concepts they want students to achieve at the end of the assignment. What do you want students to achieve at the end of the class or assignment? They should give clear and specific guidelines on how to complete the project.

Themes that emerged on how instructors' roles influence students' attitudes toward cooperative learning were:

Good organization

Participants emphasized that some instructors could organize cooperative learning well, which positively influences their attitudes toward cooperative learning. On the other hand, some instructors don't organize and manage cooperative learning well, that had made them have a negative attitude toward cooperative learning. They expressed issues concerning group formation. Some tell students to form their groups, and they see students gravitating towards those they know, leaving others stranded. Some would tell them to form their groups and present them to them, and they ensure that every member has a group. John had this to say,

> "*They don't know how to do it. Some of them will just say, look for partners and do this. No supervision. Some will go and cloud somewhere, some will not have partners. That is not good management. But some say to get your group and present them to me. So, when students form groups and present them to him, he will make sure that everybody has a group and all groups are even and then he will say go and work. That is the best. So, I think those who behave like that are the best and those who say look for groups and do it, they don't know what they are doing."*

Also, Dora stressed, *"For those who manage it well, it makes me to enjoy it and to suck all the juices from it. Those who manage it poorly, it is just like a car."*

Clear guidelines

Giving clear guidelines or not by instructors during cooperative learning impacts students' attitudes both positively and negatively. Doreen stated,

> *"For all my experience, I remember exactly all the courses that we have used cooperative learning. All the instructors increased my motivation by giving more instruction during cooperative learning and more information and engaged the groups for three or four minutes. They are very helpful and supportive for students to have the confidence that they are on the right track. This has helped me to develop a good attitude towards cooperative learning."*

The theme that emerged from how instructors could design cooperative learning to build students' experience was to allow them to choose/select their members. They noted that this would not be feasible in the classroom. Noah had this to say,

> *"I was about to say that oftentimes, they have to allow us to choose group members but is not realistic because if you go to the corporate world you are not going to select people that you want to work with. But I believe that if you have the opportunity to select group members yourself or decide which group you want to belong to because you know them, and you know their schedule everything will work out well. But it becomes difficult when the group members are imposed on you or the instructor decides who you have to work with. Because like my class now one is in Canada, Maryland, and we have others from Washington DC, I mean all over the place, collaborating becomes difficult. So if instructors will allow us to decide our group members, even though it is not feasible, it is going to be difficult, but it will help us."*

In the quantitative phase of the study, participants were made up of 99 females and 23 males. The average age for undergraduates was 21.5, and that of graduates was 37.4. One was missing, and 93.4% spoke English as their first language. The participants represented 15 disciplines (mode = 79 teaching and learning), eighty-two percent (82%) were undergraduates, and 18% were graduates. On how often participants engaged in CL in their classes, 54.1% noted that they were quite often involved in CL, and 28.7% said sometimes. Forty-nine percent (49.2%) showed that they sometimes engaged in cooperative learning outside classes.

Correlations

Several significant correlations were found among the scales or variables. This has significant implications for the study (see Table 2).

Table 1.

Cooperative Learning: Descriptive statistics and correlations

Scales	1	2	3	4	5
1. Students attitude	-				
2. Instructors role	.411**	-			
3. Social benefits	.616**	.324**			
4. Perceived benefits	.805**	.346**	.724**		
5. Students grade.	.457**	.276**		.321**	
Range	8-30	9-30	8-30	10-40	8.27
M	22.31	17.82	22.69	31.33	16.00
SD	5.02	3.41	3.76	5.55	3.76
Skewness	67	.37	-.95	-.72	.36
Kurtosis	35	-.14	1.84	1.28	.47
Cronbach alpha	89	.83	.87	.91	.83

** p < .01 (2-tailed)

Significant positive correlations were recorded among the scales or variables. One of the correlations was a positive relationship between instructors' role in cooperative learning and students' attitudes towards CL, indicating that if instructors discharge their roles effectively, it positively influences students' attitudes toward cooperative learning. Failure on the part of instructors to perform their roles in cooperative learning may affect students' attitudes toward cooperative learning negatively. Another positive association was between perceived social skills learned during cooperative learning and students' attitudes toward cooperative learning, suggesting that students put to good use the social skills they learn when working with their colleagues. This might include respecting each other's views and showing good interpersonal relationships, among others. It also suggests that the possibility of students exhibiting these skills in the world of work in the future would be high. Also, perceived benefits of cooperative learning correlated positively with students' attitudes toward cooperative learning, showing that students would develop a love to work cooperatively with others because they derive enormous benefits from it. A bad attitude, on the other hand, means students derive little value when they work cooperatively with others. Again, there was a positive association between work and grade equity concerns and students' attitudes towards cooperative learning, suggesting that good grades influence students' attitudes to engage positively in cooperative learning and vice versa. Good grades in courses determine students' success in college, which might guarantee employment in future, and low grades determine failure in college. In addition, instructors' roles correlated positively with perceived social skills learned in cooperative learning. This demonstrates that the instructor's role- e.g., supervision, explanation of group dynamics, and communication of the benefits of cooperative learning to students develop their social skills to work with others. Furthermore, instructors' roles correlated significantly with the perceived benefits of cooperative learning. This suggests that instructors can help students to accrue the benefits of working cooperatively with other students. More so, there was a positive association between instructors' roles in cooperative learning and work and grade equity concerns in cooperative learning. This means that instructors explaining the benefits of cooperative learning and tying cooperation to course objectives can assist students in maximizing the benefits of working cooperatively. Work and grade equity concerns correlated positively with perceived social skills learned during cooperative learning, demonstrating that skills developed can help students do their fair share of the work to improve the quality of good grades. There was an association between work and grade equity concerns and the perceived benefits of cooperative learning. Surprisingly, there was no association between work and grade equity concerns and perceived benefits of cooperative learning.

Regression

Regression analysis was conducted to examine how well the independent variables or scales—perceived benefits of cooperative learning, work and grade equity concerns, perceived social skills learned in CL, and how instructors' role predicted attitude towards cooperative learning as the dependent variable (see Table 2).

Table 2.

Regression of attitude variables and cooperative learning scales

	Instructors' role	work and grade	Perceived benefits	Perceived social role
Attitudes	.10	.21	.64	.09

Note: Numbers in the table are standardized beta (β) coefficients.

The overall model with attitude towards cooperative learning as the dependent variable and perceived benefits of cooperative learning, work and grade equity concerns, perceived social skills learned in cooperative learning, and instructors' role as the independent variables was statistically significant ($R2 = .72$, $p < .001$). Work and grade equity concerns predicted significantly students' attitudes toward cooperative learning ($\beta = .21$, $p < .001$). Also, perceived benefits of cooperative learning predicted

significantly with students' attitudes toward the cooperative learning group (β = .64, p <.001). Surprisingly, the instructors' role (β = .10, p > .05) and perceived social skills learned in cooperative learning (β = .09, p> .05) failed to predict students' attitudes toward cooperative learning.

Mixing Data

The study employed a side-by-side comparison to merge the data in a summary table, as shown in Table 3 below.

Table 3.

Mixing of qualitative and quantitative data

Research questions	**Qualitative Results (One-on-one interview)/Themes**	**Quantitative Results (Survey)**
(1) How effective do students find cooperative learning in terms of their learning outcomes? (How cooperative learning promotes students learning outcomes (benefits).	• University students learn to develop communication skills in CL which promote their learning. • CL prepares students for the world of work. • College students learn to respect the views of others • CL promotes better understanding of content of courses.	(a) There are positive relationships between the benefits of CL and social development of university students. (b) There is positive relationship between benefits of CL and university students' attitudes towards CL.
(2) How does instructor's role influence college/university students' attitudes towards cooperative learning?	▪ The involvement of instructors: (a) Students develop positive attitude if instructors get involved in cooperative learning activities. • University students develop negative attitudes in cooperative learning if instructors don't get involved by explaining the nitty gritty of cooperative learning activities.	▪ There is a positive relationship between instructors' role and university students' attitudes towards cooperative learning activities (see correlation table (1).
(3) Relationship between instructor's role, perceived benefits of CL, students' attitudes, and social skills.	▪ Good management: If instructors supervise, give clear directions- students enjoy CL and enhance their learning outcomes (academic achievement).	▪ Instructors' role did not predict students' attitudes towards CL in the regression analysis. There is discrepancy between the qualitative and quantitative results.

Discussion

CL as an instructional strategy has been studied extensively due to its enormous benefits to students in college/university classrooms. This is demonstrated in both the qualitative and quantitative analyses in this study. Across topic areas and educational levels, much research has investigated how CL affects academic achievement. For instance, Johnson and Johnson's (2014) and Slavin's (2015) meta-analyses

have repeatedly shown how CL improves students' academic performance (Khan et al., 2024). Also, peer tutoring, active involvement, and critical thinking are all encouraged by cooperative learning, and these factors enhance student learning. Cooperative learning fosters the growth of higher-order cognitive abilities like metacognition and problem-solving, which improves conceptual comprehension and knowledge retention (Khan et al., 2024). Again, a study by Rudhumbu (2024) revealed that CL significantly and favourably affects university students' academic performance. The findings indicate that instructing students in CL under the following circumstances—individual accountability (IA), group processing (GP), promotive interaction (PI), also known as face-to-face interaction, positive interdependence (PDI), and social and interpersonal skills (SS)—significantly improves university students' academic performance (Rudhumbu, 2024). In addition, Nanor, Hanson, and Mahama's (2024) study found that the Students Team Achievement Division (STAD) cooperative learning paradigm considerably enhanced students' learning outcomes in hydrocarbon nomenclature. The STAD cooperative learning model was found to be a successful learning paradigm for raising student learning results. The STAD cooperative learning paradigm created an atmosphere that encouraged learners to actively participate, leading to the meaningful production of knowledge (Nanor, Hanson, & Mahama, 2024).

The results of the study demonstrated that students working cooperatively with others not only help them to achieve academic success but also imbibe in them the necessary social skills for the future world of work. Cooperative learning has been shown to improve students' social behaviours and interpersonal abilities in addition to their academic performance (Khan et al., 2024). Through the development of communication, cooperation, and conflict-resolution skills, collaborative activities create a welcoming and inclusive learning environment. In a study by Roseth, Johnson, and Johnson (2008), CL improves peer relationships and social engagement, which lowers social isolation and improves classroom dynamics. Cooperative learning also fosters empathy, perspective-taking, and respect for diversity, all of which assist in shaping well-rounded people who can function successfully in different social settings (Khan et al., 2024). Similarly, Lou et al. (2012) examined how cooperative learning affected students' capacity for empathy and perspective-taking and found that those who participated in cooperative learning activities significantly improved their social-emotional skills (Khan et al., 2024). Socio-cultural theory emphasizes the social nature of learning and how it happens through social interaction, stressing the importance of cooperative activities in promoting knowledge production and cultural mediation (Khan et al., 2024; Rudhumbu, 2024; Vygotsky, 1978).

Once again, the study showed that instructors play a crucial role in supporting students' academic success in CL. Their roles, especially effective management, supervision, explaining group dynamics and formation, providing clear guidelines, and discussing the benefits of CL in serving multiple learning objectives — whether when assigning work or not — influence students' attitudes either positively or negatively. This finding aligns with Chapman and Van Auken's (2001) study, which demonstrated that instructors significantly impact students' attitudes, perceived benefits, and concerns about fairness in work and grades related to group work, as confirmed by a path-analytic model. The study indicates that students are more likely to view group work positively if their instructors address group dynamics and employ techniques like peer assessments to evaluate each member's performance within their groups. Additionally, the results showed that the instructors' role and the development of social skills in CL did not predict students' attitudes toward CL. One possible reason for this could be that college or university students felt their instructors did not manage or supervise them effectively during CL activities and failed to provide clear instructions, which hindered the development of students' social skills. This is supported by the study of Chapman and Van Auken (2001), which confirms that instructors generally did not do enough to support their students' group experiences. This, in turn, influences students' attitudes toward CL.

The results further revealed that group formation in CL was critical in the qualitative phase, as students preferred to form their groups compared to instructors forming the groups. They believe forming their groups would help them to work effectively since they know themselves and have the same level of commitment. However, they expressed how unfeasible this might be in the classroom, where some

students might not have members to work with. A contribution of this study is the use of a mixed methods approach to study students' perceptions of cooperative learning and its relationship with their academic success to provide a better understanding in the literature since limited studies have been conducted using this approach, and failure to mix both the quantitative and qualitative data. As noted by Creswell and Plano Clark (2011) and Burrows (2013), researchers need to mix the two methods (qualitative and quantitative) instead of collecting data for both strands and keeping them separate throughout the study. Therefore, the mixing of data in this study demonstrates a unique contribution in this area. Also, the study confirms existing research.

Conclusion

The study was conducted to understand college students' perceptions regarding the impact of CL on their academic achievement and social development. It was observed that CL as an instructional strategy enhances the academic performance of students through higher-order thinking and problem-solving skills. Also, CL helps students develop the requisite 21st-century social skills and behaviours needed for the world of work. Again, group formation during the CL process is crucial, and college students prefer forming their groups instead of being formed by instructors. In addition, instructors play a critical role in shaping the attitudes of students positively during CL if they explain the group dynamics and provide vivid guidelines, group formation, and benefits and vice versa.

Recommendations

Since employers seek workers who demonstrate skills such as better understanding, friendliness, empathy, the ability to contribute to group efforts, communicate ideas effectively to justify their position, persuade others, and work well with people from diverse cultural backgrounds, students need to develop these skills through cooperative learning activities in college or university classrooms. Working effectively in a group is one of the most vital interpersonal skills a person can acquire, as it influences productivity, employability, and professional success. Therefore, there are strong reasons to teach students how to collaborate and foster positive attitudes towards the process. To achieve this, it is recommended that instructors effectively fulfill their roles to prepare students for the workplace by incorporating cooperative learning (CL) as an instructional strategy in their classrooms. It is also advised that future researchers consider using an exploratory sequential design to investigate how groups are formed in cooperative learning and how this impacts students' attitudes towards CL.

References

Afrida, A., Nwanya, F., & Omar, F. M. (2024). Think-pair-share type cooperative learning to improve chemistry learning outcomes on atomic structure material. *Indonesian Journal of Education Research, 5*(3), 92-99. DOI: 10.37251/ijoer.v5i3.991.

Ait Hattani, H. (2024). Investigating the role of cooperative learning in fostering Moroccan ESP students' learning attitudes. *Journal of English Language Teaching and Linguistics, 9* (1), 83-94. doi: http://dx.doi.org/10.21462/jeltl.v9.i1.1286

Alhebaishi, S. M. (2019). Investigation of cooperative learning techniques and attitudes in language learning classrooms. *International Journal of Applied Linguistics & English Literature*, *8* (2): 219-230. doi.org/10.7575/aiac.ijalel.v.8n.2p.219.

Burrows, T. J. (2013). *A preliminary rubric design to evaluate mixed methods research*. Dissertation submitted to the faculty of the virginia polytechnic institute and state university in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Campbell, J. & Li, M. (2006). Asian students' perceptions of group work and group assignments in a New Zealand tertiary. Retrieved from http://ro.ecu.edu.au/ceducom/64 on *February 7th, 2025.*

Chapman, K. J., & Van Auken, S. (2001). Creating positive group project experiences: An examination of the role of the instructor on students' perceptions of group projects. *Journal of Marketing Education, 23* (2), 117-127.

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). New York: Routledge.

Creswell, J.W., & Plano-Clark, V. L. (2010). *Designing and conducting mixed methodsresearch. 2nd ed*. Los Angeles: Sage.

Creswell, J.W., & Clark, V.L.P. (2017). *Designing and conducting mixed methods research*.3rd Edition: Sage Publications, Inc.

Felder, M., & Brent, R. (1996). Navigating the bumpy road to student-centred instruction. *College Teaching, 44* (2), 43-47.

Gudinge, J. (2018). *Cooperative learning: A teacher perspective*. Malmö University Children, Youth and Society. Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.diva-portal.org/smash/get/diva2:1493322/FULLTEXT01.pdf on February 7th, 2025.

Gunbayi, I. (2018). Developing a qualitative research manuscript based on systematic curriculum and instructional development. *European Journal of Social Sciences Studies*, *3* (3), 124-153. doi: 10.5281/zenodo.1463223.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. *Journal on Excellence in College Teaching, 25*(3&4), 85-118.

Johnson, D. W., & Johnson, R. T. (1999). Making cooperative learning work. *Theory into Practice, 38*, 67–73.

Johnson, D. W., & Johnson, R. T., & Smith, K. A. (1991). *Active learning: Cooperation in the college classroom*. Edna, MN: Interaction Book.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). Cooperative learning returns to college: What evidence is there that it works? *Change*, 27-35.

Jones, K. A., & Jones, J. L. (2008). Making cooperative learning work in the college classroom: An application of the 'five pillars' of cooperative learning to post-secondary instruction. *The Journal of Effective Teaching, 8* (2), 61-76.

Khan, N. M., Noreen, M., & Hussaini, M. H. A. (2024). The impact of cooperative learning on students' academic achievement and social behaviour. *Harf-o-Sukhan*, *8* (1), 339-348.

Kohn, A. (1996). "Beyond discipline: From compliance to the community." Available at: https://www. alfiekohn.org/beyond-discipline/ (accessed 2 December 2023).

Kohn, A. (2021). "Alfie Kohn: The case against classroom management... a quarter-century later", available at: https://nepc.colorado.edu/blog/case-against (accessed 2 December 2023).

Kupczynski et al. (2012). Cooperative learning in distance learning: A mixed methods study. *International Journal of Instruction, 5* (2).

Kyndt et al. (2013). A meta-analysis of the effects of face-to-face cooperative learning. Do recent studies falsify or verify earlier findings? *Educational Research Review*, 10, 133–149.

Lou et al. (2012). Within-class grouping: A meta-analysis. *Review of Educational Research, 82* (4), 499- 535.

Molla, E, & Muche, M. (2018). Impact of cooperative learning approaches on students' academic achievement and laboratory proficiency in biology subjects in selected rural schools in Ethiopia. *Education Research International*, 1- 9. https://doi.org/10.1155/2018/6202484

Moore, L. L. (2010). Students' attitudes and perceptions about the use of cooperative exams in an introductory leadership class. *Journal of Leadership Education, 9* (2), 72-85.

Nanor, E., Mahama, A., & Hanson, R. (2024). Effect of stad model of cooperative learning on students' learning outcome on the nomenclature of hydrocarbons. *International Journal of Scientific Research and Management, 12* (3), 3264-3274. DOI: 10.18535/ijsrm/v12i03.el03.

Naz, F., & Murad, H. S. (2017). Innovative teaching has a positive impact on the performance of diverse students. *SAGE Open*, 1–8. https://1d0o.i.1o1rg7/71/02.1157872/241450812474703147072342O

Nhan, H. & Nhan, T. A. (2019). Different grouping strategies for cooperative learning in English majored seniors and juniors at Can Tho University, Vietnam, *Educ. Sci.*, *9*, 59.

Ogalloh, M. M. K., Wamocho**,** F. I., & Otube, N. A. (2018). Teacher's use of cooperative learning strategies to enhance the academic performance of students with cerebral palsy in special secondary schools for the physically disabled in Kenya. *International Journal of Research and Innovation in Social Science, 2* (X), 30-38.

Onwuegbuzie, A. J., & DaRos-Voseles, D. A. (2001). The role of cooperative learning in research methodology courses: A mixed methods analysis. *Research In the Schools, 8* (1), 61-75.

Phipps et al. (2001). University students' perceptions of cooperative learning. Implications for administrators and instructors. *Journal of Experiential Education, 24* (1), 14-21.

Rodger, S., Murray, H. G., & Cummings, A. L. (2007). Gender differences in cooperative learning with university students. *The Alberta Journal of Educational Research*, *53* (2), 157-173.

Rudhumbu, N. (2024). Antecedents and consequences of effective implementation of cooperative learning in universities in Zimbabwe. *Journal of Research in Innovative Teaching & Learning*, *17* (1), 4-20. DOI 10.1108/JRIT-01-2022-0004.

Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents achievement and peer relationships: The effects of cooperative, competitive, and individualistic goal structures. *Psychological Bulletin, 134* (2), 223-246.

Springer, L., Stanne, M. E., & Donovan, S. S. (1999). Effects of small-group learning on undergraduates in science, mathematics, engineering, and technology: A meta-analysis. *Review of Educational Research 69* (1), 21-51.

Şimşek, B., & Buldukoğlu, K. (2024). Metaphorical perceptions of nurses working in pandemic units about being a nurse during COVID-19: A mixed-methods research. *Journal of Action Qualitative and Mixed Methods Research, Volume 3* (2), 8-22. DOI: 10.5281/zenodo.12759997.

Stupnisky, R. H., Weaver-Hightower, M. B., & Kartoshkina, Y. (2014). Exploring and testing the predictors of new faculty success: A mixed methods study. *Studies in Higher Education, 40* (2), 368-390. DOI: 10.1080/03075079.2013.842220.

Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know? *Contemporary Educational Psychology, 21*, 43–69.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Appendix

Students' perceptions of the cooperative learning scale

Name	Items	M	SD
Perceived benefits			
pbcl1_1	Cooperative learning enhances my communication skills.	2.95	.72
pbcl1_2	Cooperative learning stimulates what I will experience in the work world.	4.1	.76
pbcl1_3	I make new friends when I engage in cooperative learning.	3.95	.86
pbcl1_4	I learn best when I work cooperatively with other students on assignments.	3.52	.1.1
pbcl1_5	Cooperative learning helps me to better understand course materials.	3.72	.1.0
pbcl1_6	I exchange knowledge with other students through cooperative learning.	4.1	.74
pbcl1_7	In college classrooms, working cooperatively stimulates my critical thinking skills.	3.8	.93
pbcl1_8	Cooperative learning improves my academic performance. **	4.0	3.8
pblc1_9	Cooperative learning prepares me to work in a company.	4.0	.81
Attitudes toward cooperative learning			
atcl1_1	My attitude towards cooperative learning is positive.	3.81	1.07
atcl1_2	Working cooperatively with other students is desirable to me.	3.46	1.06
atcl1_3	I am satisfied with cooperative learning in terms of my learning outcomes.	3.77	.95
atcl1_4	Cooperative learning is a waste of my time. R	2.15	1.10
atcl1_5	I find little value in working cooperatively with other students. R	2.26	1.08
atcl1_6	I enjoy working cooperatively with other students on course assignments.	3.68	.98
	Work and grade equity concerns		
wg1_1	I do the work of others in cooperative learning. R	3.34	.96
wg1_2	In CP, other members do not do their fair share of the work.	3.29	.87
wg1_3	I worry about my grade in cooperative learning. R	3.47	1.05
wg1_4	Assignment should rather be graded on individual performance instead of group performance. R	3.58	1.04
wg1_5	It is difficult getting members in cooperative learning groups to actively participate in tasks. R	3.32	. 90
wg1_6	Everyone in my cooperative group does his/her equal share of the work. R	3.04	.88
Perceived social skills leaned in CP			
pss1_1	Cooperative learning enhances my independence.	3.06	.93
pss1_2	I learn to be patient in cooperative learning.	3.85	.79
pss1_3	I develop the ability to listen and judge correctly in cooperative learning.	3.86	.71
pss1_4	Working cooperatively develops my discipline and self-control behaviours.	3.79	.79
pss1_5	I learn to respect the opinions of others in cooperative learning groups.	4.10	.76
pss1_6	Working cooperatively advances my interpersonal relationships with other students	4.01	.81
Instructors' role in cooperative learning			
ircl_1	I can go to the instructor with problems about the cooperative learning group.	3.46	1.0
ircl1_2	Instructors tie cooperative learning to course objectives.	3.73	75
ircl1_3	Instructors communicate the benefits of cooperative learning to students.	3.33	.94
ircl1_4	Instructors promote positive attitudes about groups.	3.82	.75
ircl1_5	Instructors explain group dynamics in cooperative learning	3.46	.93

Note. Participants responded on a scale ranging from 1 = Strongly disagree to 5 = Strongly agree (For perceived benefits of cooperative learning, attitude towards cooperative learning, work and grade equity concerns, and perceived social benefits).
1 = Never to 5 = always (For instructors' role)
"R" indicates that the item was reverse-coded.
* Indicates removed during analysis

Conflicts of Interest

No conflict of interest has been declared by the author

Author Contribution

Corresponding author George Atta: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

Declaration of Competing Interest

This research did not receive any specific grant from funding agencies in the public, commercial or non-profit sectors.

Ethics approval

In the writing process of the study titled "**Insights into college students' perceptions of cooperative learning in college classrooms: A mixed methods approach**," the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. "Journal Action Qualitative & Mixed Methods Research [JAQMER] and Editor" had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author, and the study was not submitted for evaluation to any other academic publishing environment.

Institutional review board (IRB) approval

On March 21, 2024, the University of North Dakota's Institutional Review Board (IRB) approved this project under the number UND-551.

Data Availability Statement

Anonymized data from this study can be made available on request from georgeprinceatta@gmail.com