University of Tartu
Faculty of Social Sciences
Institute of Education
Curriculum of Educational Technology

Omolabake Aminat Vivian Nnadi

COLLABORATIVE LEARNING IN SENIOR SECONDARY SCHOOLS IN LAGOS STATE NIGERIA: STUDENTS' PERCEPTIONS, TECHNIQUES AND REAL-WORLD LEARNING TRANSFER

Master's thesis

Supervisor: Associate Professor Leo Aleksander Siiman

Tartu, 2025

Abstract

This study investigates students' perceptions of collaborative learning, it's techniques and influence on real world learning transfer among senior secondary school students in Oshodi/Isolo Local Government Area, Lagos State, Nigeria. Through a mixed-methods approach, a descriptive statistic using SPSS and thematic analysis, the research evaluates the level of integration of collaborative learning practices, the predominant techniques used as evidenced by the students. The study also shows how collaborative learning influences learning transfer, knowledge application and the students social and cognitive skills development. The results indicate that 80% of students actively engage in collaborative learning, with group discussions emerging as the most utilized technique. The findings underscore the benefits of collaborative learning in enhancing communication, critical thinking, and leadership skills, with 88% of participants affirming its role in real-world knowledge application. Challenges associated with collaborative learning include poor structure and limited real-world connectivity. This research advocates for refining collaborative learning methods and integrating them into educational policies to bolster holistic academic and social development in Nigerian schools.

Keywords: Collaborative learning, critical thinking, leadership skills, learning transfer

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1 Introduction

This study explores the perceptions and practices of collaborative learning among students, the techniques and real-world learning transfer in Lagos State, Nigeria. Collaborative learning has emerged as a crucial aspect of modern education with growing recognition of its potential to enhance student engagement, knowledge retention, and critical thinking skills (MacGregor, 1990). Teachers and students alike have begun to appreciate the value of collaborative learning, which allows individuals to leverage their unique strengths and perspectives to achieve shared goals. The shift from traditional, teacher-centred methods to more interactive, student-centred approaches is driven by the understanding that learning is inherently a social process. According to Vygotsky's socio-cultural theory (McLeod, 2024), interaction with peers plays a crucial role in cognitive development, making collaborative learning not just a pedagogical tool but a critical component of the learning process.

The existing literature highlights the benefits of collaborative learning. Students who engage in collaborative efforts tend to be more actively involved in the learning process and retain information for longer periods. Furthermore, collaborative activities closely mirror the work environment and better prepare students for post-academic life (Hafner & Ellis, 2005). Collaborative learning among teachers has also been recognized as a critical factor in achieving excellent teaching. Teachers must have opportunities to share ideas, suggestions, and strategies on how to teach effectively through articulated and joint work. (Massa et al., 2021) Collaborative work allows teachers to expand their knowledge and utilise each other's unique strengths and perspectives. Despite the recognized benefits of collaborative learning, including enhanced critical thinking, improved communication skills, and increased motivation (Laal & Ghodsi, 2012), its implementation and efficacy can vary widely. Factors such as cultural context, available resources, and teachers' familiarity with collaborative techniques can significantly influence how these methods are employed and perceived Qureshi et al, 2023).

Therefore, this research aims to investigate students' perception about collaborative learning, how it is practised, the predominant techniques, and the real-world practices in promoting learning transfer. Specifically, the study is guided by the following objectives: (a) to examine students' perception about collaborative learning in their learning experience. (b) to identify the predominant collaborative learning techniques utilized by students in educational system. (c) to assess how collaborative learning influence real-word learning transfers among students.

The outcome of this study is believed to throw more light on the adoption of collaborative learning and its importance in positioning the students for the global trends in response to the globalization effect of the 4Cs (constructive, critical, creativity, collaborative) learning model, according to Supena, Darmuki & Hariyadi (2021). The justification of this research is hinged on the premise that collaborative learning is necessary for the creation of a holistic education in a progressive society like Lagos. The research outcome will help identify areas for improvement and support curriculum developers in refining the curriculum to make it more effective in achieving educational goals.

2 Theoretical Overview

Collaborative learning is an instructional approach that involves students working together in groups to achieve a common goal or complete a task. This approach has gained significant attention in educational research due to its potential to enhance students' learning outcomes and promote learning transfer. In this chapter, we will explore students perception about collaborative learning, its techniques and effect on real world learning transfer among senior secondary school students in the Oshodi/Isolo Local Government Area of Lagos State, Nigeria.

2.1 What is Collaborative Learning?

There have been various definitions of collaborative learning and no universal definition (Yang, 2023, Dillenbourg, 1999)**.** In his publication, Yang (2023) **t**ried to go down history lane to bring together the various definitions by various authors of collaborative learning. While some definitions were focused on the philosophy of collaboration, others were hinged on the structure and or the process. Bruffe (1999) defined it as the creation of conditions that enable students to negotiate the boundaries between the knowledge communities they belong to and the one that the professor belongs to. Davidson(2021a) defined it as a process where students "work together in small groups that are typically self-selected, self-managed, and loosely structured".

Collaborative learning has been widely recognized as an effective pedagogical strategy for promoting student engagement, critical thinking, and problem-solving skills. According to Johnson and Johnson (1999), when students work collaboratively, they have the opportunity to actively construct their knowledge through interactions with their peers. This social interaction allows for the sharing of ideas, perspectives, and strategies, which can lead to a deeper understanding of the subject matter. Research studies have consistently shown positive outcomes of collaborative learning on students' academic performance. For instance, a study

conducted by Slavin (1996) found that students who participated in collaborative learning groups outperformed their peers who received traditional instruction. The collaborative learning groups exhibited higher levels of achievement, improved retention of knowledge, and increased motivation to learn.

Furthermore, collaborative learning has been shown to enhance students' communication and interpersonal skills. By working in groups, students learn to effectively communicate their ideas, listen to others, and resolve conflicts (Amalia, 2018). These skills are essential for success in the 21st-century workplace, where teamwork and collaboration are highly valued. Although collaborative learning has been most times directed towards students, the truth is that this is needed not only by students but also by teachers. Sutton & Shouse (2016), in their study noted that collaboration helps to build trust and expertise among teachers which in turn enables schools to implement changes with more ease.

In the context of learning transfer, collaborative learning has the potential to bridge the gap between classroom learning and real-world application. By engaging in collaborative activities, students are encouraged to apply their knowledge and skills to solve authentic problems. This transfer of learning is crucial for students to become independent learners who can adapt their knowledge to different contexts. A study by Webb & Palincsar (1996) examined the impact of collaborative learning on learning transfer in science education. The researchers found that students who engaged in collaborative learning activities demonstrated a deeper understanding of scientific concepts and were better able to apply their knowledge to real-world situations. These findings suggest that collaborative learning can facilitate the transfer of learning from the classroom to real-life scenarios.

However, it is important to note that the effectiveness of collaborative learning depends on various factors. One crucial factor is the structure of the collaborative tasks. Research by Kirschner, Sweller & Clark (2006) suggests that well-structured tasks with clear goals and individual accountability are more likely to promote learning transfer. Additionally, the role of the teacher in facilitating and guiding collaborative learning experiences is crucial. Teachers need to provide clear instructions, monitor group interactions, and provide timely feedback to ensure optimal learning outcomes. The theoretical framework of collaborative learning is built on the following:

2.1.1 Constructivism

According to constructivist theories of learning, individuals construct their own understanding and knowledge through active engagement with new experiences and ideas. Collaborative learning provides a social context where learners can negotiate meaning, co-construct knowledge, and develop a deeper understanding of concepts through interactions with peers (Vygotsky & Cole, 1978). Through collaborative activities such as problem-solving, discussions, and peer teaching, learners can internalize knowledge more effectively, which enhances their ability to transfer learning to new contexts. According to a publication by Educational Broadcasting Corporation (2019), learning is meant to be constructed, active, reflective, collaborative, inquiry-based, and evolving.

2.1.2 Social Learning Theory

Social Learning Theory, proposed by Bandura (1977), emphasizes the role of social interactions in learning. Collaborative learning environments offer opportunities for observational learning, where learners observe and model the behaviours, strategies, and problem-solving techniques of their peers. By working collaboratively, learners can acquire new skills and knowledge through observation, imitation, and feedback, thereby facilitating the transfer of learning to similar or novel situations. According to Nabavi (2012), Newman & Newman (2007) the process of learning is achieved by individuals through one or a combination of the following; observation, imitation, modelling Bandura (1963) vicarious reinforcement and punishment and Bandura (1978) self-efficacy.

2.1.3 Situated Learning

Situated Learning theory posits that learning is situated within authentic contexts and social interactions, and knowledge is inseparable from its context of use (Lave & Wenger, 1991). Collaborative learning environments create situated contexts where learners engage in meaningful tasks and authentic problem-solving activities. Through active participation in group discussions and collaborative tasks, learners develop not only content knowledge but also the cognitive and social skills necessary for the successful transfer of learning to real-world situations.

2.2 What is the perception on collaborative learning?

Although perception is a broad word and used in various contexts, Efron (1969) defined it as "man's primary form of cognitive contact with the world around him". On this backdrop the knowledge of collaborative learning, how it is seen, interpreted, adopted and used is crucial to this research. A study by Kyaw (2019) stated that it helps students in feedback and assessment as it helps students to recognize their errors and weaknesses leading to improvement. In another study on students' perception on collaborative learning, Yazici, 2004 gathered from the responses that collaborative learning helps to increase their comfort level in communicating and working with their peers and also enhances their independent learning skills.

Although the benefits of collaborative learning are many, Darko & Wang (2021) found out that collaborative learning also poses some challenges to the students and identified the following; finding consensus, communicating with group members, coordination between group members, lack of leadership, lack of motivation, lack of time, procrastination, scheduling conflicts, and unequal participation as the challenges students face during collaborative learning engagements.

2.3 What are Collaborative Learning Techniques?

Collaborative learning techniques (or strategies) are the various approaches employed to promote active participation, engagement and interaction among students (Moisés, 2024). These techniques help students to engage their peers in active dialogue, express their ideas and also listen and understand others' point of view (Salma, 2020). Barkley et al, (2014, p12) stated that these help students to make, neurological, cognitive and social connections. Although there are various collaborative learning techniques, Barkley et al (2014) grouped these to capture what they are meant to achieve. Table 1 below shows the different collaborative learning techniques, what they entail and what they are used for.

Table 1: Collaborative Learning Techniques quick reference (Bates College 2018)

Techniques for Discussion	is a technique in which students...	It is particularly useful for.
Think-Pair-Share	think individually for a few minutes, and then discuss and compare their responses with a partner before sharing with the entire class	preparing students to participate more fully and effectively in whole class discussions
Round Robin	generate ideas and speak moving from one student to the next.	structuring brainstorming sessions and ensuring that all students participate
Buzz Groups	discuss course-related questions informally in small groups of peers.	generating lots of ideas quickly to prepare for and improve whole class discussions
Talking Chips	participate in discussion; surrender token each time they speak.	ensuring equitable participation.
Three-Step Interview	interview each other and report what they learn to another pair.	helping students to network and improve communication skills.
Critical Debate	assume/argue the side of an issue opposite of their personal views.	developing critical thinking & encouraging students to challenge their assumptions
Techniques for Reciprocal Teaching	is a technique in which students...	It is particularly useful for.
Note-Taking Pairs	pool information from their individual notes to create an improved, partner version.	helping students acquire missing information and correct inaccuracies in their notes and learn to become better note takers
Learning Cell	quiz each other using questions they have developed individually about a reading assignment or other learning activity	engaging students actively in thinking about content and encouraging them to challenge each other to pursue deeper levels of thought.
Fishbowl	form concentric circles with the smaller, inside group of students discussing and the larger, outside group listening and observing.	providing opportunities for students to model or observe group processes in a discussion setting
Role Play	assume a different identity and act out a scenario.	engaging students in a creative activity that helps them “learn by doing
Jigsaw	develop knowledge about a given topic and then teach it to others.	motivating students to learn/process info deeply enough to teach it to their peers
Test-Taking Teams	prepare for a test in working groups, take the test individually, and then retake the test in their groups	helping students assess and improve their understanding of subject matter as they also teach each other test-taking strategies
Techniques for Problem Solving	is a technique in which students...	It is particularly useful for.
Think-Aloud Pair Problem Solving TAPPS	solve problems aloud to try out their reasoning on a listening peer.	emphasizing process (not product) and helping students identify process errors
Send-A-Problem	try to solve a problem as a group, and then pass the problem and solution to a nearby group who does the same; the final group evaluates the solutions	helping students practice together the thinking skills required for effective problem solving and for comparing and discriminating between multiple solutions
Case Study	review a written study of a real-world scenario and develop a solution to the dilemma presented in the case	presenting abstract principles and theories in ways that students find relevant.
Structured Problem Solving	follow a structured format to solve problems	dividing problem-solving processes into manageable steps so that students learn to identify, analyze, and solve problems in an organized manner

Table 1: Collaborative Learning Techniques quick reference (Bates College 2018)

Techniques for Problem Solving	is a technique in which students...	It is particularly useful for.
Analytic Teams	team members assume roles and specific tasks when critically reading an assignment, listening to a lecture, or watching a video.	helping students understand the different activities that constitute a critical analysis
Group Investigation	plan, conduct, and report on in-depth research projects.	teaching students research procedures and gain in-depth knowledge
Techniques Using Graphic Information Organizers	**is a technique in which students...**	**It is particularly useful for.**
Affinity Grouping	generate ideas, identify common themes, and then sort and organize the ideas accordingly	unpack a complicated topic and identify and classify its constituent parts.
Group Grid	are given pieces of information and asked to place them in the blank cells of a grid according to category rubrics	clarify conceptual categories and develop sorting skills
Team Matrix	discriminate between similar concepts by noticing and marking on a chart the presence or absence of important, defining features.	distinguish between closely related concepts
Sequence Chains	analyze and depict graphically a series of events, actions, roles, or decisions	understand processes, cause and effect, and chronological series, and organize information in an orderly, coherent progression.
Word Webs	generate a list of related ideas; organize them in a graphic with relationships indicated by lines/arrows	figure out and represent relationships. Like maps, they can show both the destination and the sites and sights along the way
Techniques Focusing on Writing	**is a technique in which students...**	**It is particularly useful for.**
Dialogue Journals	record their thoughts in a journal that they exchange with peers for comments and questions	connect course work to their personal lives and to interact with each other in content-related and thoughtful ways
Round Table	take turns responding to prompt before passing the paper along to others who do the same	practice writing informally and to create a written record of ideas
Dyadic Essays	write essay questions/model answers, exchange questions, and after responding compare their answers to the model answer	identify the most important feature of a learning activity and formulate and answer questions about that activity
Peer Editing	critically review and provide editorial feedback on a peer's essay, report, argument, research paper, or other writing assignment	develop critical editing skills and give each other constructive criticism to improve papers before they submit them for grading
Collaborative Writing	write a formal paper together	learn and perform the stages of writing more effectively
Team Anthologies	compile course-related readings with student and annotations	experience the research process without writing a formal research paper
Paper Seminar	write/present an original paper, receive formal feedback from peers; engage in a general discussion of the issues with group	engage in deep discussion about their research and provide individual students with focused attention and feedback on individual student's work

Table 1: Collaborative Learning Techniques quick reference (Bates College 2018)

Others	is a technique in which students...	It is particularly useful for.
Scavenger hunt	Find a set of items on a list	Introducing students to key artifacts/examples associated with course content
Quizo	Answer questions correctly to receive a chip to place on a board as they strive to cover five sequential spaces	Introducing or reviewing factual content
Team jeopardy	Choose categories/points values of? to answer	Requiring students to think about content in new ways
Friendly Feud	Provide multiple correct answers to a prompt question.	Helping students to understand that there can be multiple answers to a question and that those answers can be more or less correct
Team Games Tournaments	Work in heterogeneous teams to learn content and compete in homogeneous teams to earn points for the home team	Helping to assess student mastery of a specific body of content

This indicates that collaborative learning techniques are diverse, has different applications, and used to achieve different outcomes depending on intentions.

2.4 What is Learning Transfer?

Learning transfer, also known simply as transfer of learning, refers to the process by which knowledge, skills, or understanding gained in one context or situation are applied or adapted to another context or situation (Ford, 1994, Alexander & Murphy, 1999). It involves the ability to recognize and utilize previously acquired information or experiences in novel or different circumstances to solve problems, make decisions, or achieve goals (Perkins & Salomon, 1992).

The importance of the learning transfer is encapsulated in the conclusions of Desse, (1958), Lebeman & Macdonald (2016), that “there is no more important topic in the whole psychology of learning than transfer of learning, …practically all educational and training programs are built upon the fundamental premise that human beings have the ability to transfer what they have learned from one situation to another, there is no point to education apart from transfer”. Effective transfer of learning is essential for meaningful learning and skill development, as it enables individuals to generalize and adapt their learning to diverse situations, fostering flexibility, creativity, and problem-solving abilities.

Säljö explored the socio-cultural aspects of learning transfer, highlighting how learning is situated within social practices and communities of practice (Säljö, 2012)**.** However, the transfer of learning is not always automatic or straightforward and may require deliberate effort, practice, and reflection to optimize its effectiveness.

2.5 How does collaborative learning aid transfer of learning?

Collaborative learning can aid the transfer of learning through several mechanisms. According to Douligeris & Seralidou (2017), “collaborative learning aids in the transfer of learning by providing opportunities for students to actively engage with the material, articulate their understanding, receive feedback from peers, and negotiate meaning”

Active Engagement involves collaborative learning which is an active participation and engagement from all group members. Through discussions, debates, and problem-solving activities, learners actively construct knowledge and develop a deeper understanding of the subject matter. This active engagement enhances comprehension and retention, making it more likely for learners to transfer their learning to new contexts. In a publication by Alberta Regional Consortia (2014), they outlined the parts of active engagement, Listening, empathizing and communicating respect, asking questions, focusing on the issue, and finding a first step.

Social Interaction is a collaborative learning which provides opportunities for social interaction and peer-to-peer teaching. By explaining concepts to others, learners clarify their own understanding and gain new insights. Engaging in dialogue with peers exposes learners to different perspectives and approaches, broadening their knowledge base and facilitating transfer to diverse situations. In their research findings, Rimor, Rosen & Naser (2010) opined that interaction among learners is composed of various dimensions with relatively low levels of complexity. They further adopted the following dimensions Externalization, Initiative, and Rapid. (a) Externalization occurs when the learner actively engages in discussion, independent of referencing other learners' contributions. (b) Initiative is when group members mutually exchange knowledge by posing questions and seeking information. (c) Rapid consensus when learners adopt their peers' opinions swiftly, not solely due to agreement or persuasion, but to expedite progress in the discussion.

Diverse Perspectives entails working collaboratively with peers from diverse backgrounds and experiences exposes learners to a variety of perspectives and problem-solving strategies. This diversity stimulates critical thinking and promotes cognitive flexibility, enabling learners to adapt their knowledge and skills to different contexts and challenges. In their conclusion, Loes & Trolian (2018) posited that collaborative learning can “lead not only to academic achievement, but also to students’ openness to diverse perspectives and diverse others”.

Skill Development involves collaborative learning, frequently underscores the cultivation of communication, teamwork, and problem-solving proficiencies. These competencies not only hold significance within the collaborative learning realm but also exhibit transferability to various personal, academic, and professional arenas. For instance, effective communication abilities nurtured through collaborative learning find application in group projects, presentations, and workplace exchanges (Johnson & Johnson, 1989).

In addition, collaborative learning promotes metacognitive reflection, a process where learners critically analyse their learning methodologies and strategies. Through such reflection, learners assess their collaborative experiences, pinpoint strengths and weaknesses, and establish objectives for enhancement, thus fostering increased self-awareness and autonomy (Çini et al, 2023). This heightened metacognitive consciousness enhances transferability by empowering learners to adapt and utilize their learning more proficiently across diverse contexts.

Overall, collaborative learning offers a vibrant and interactive learning milieu, fostering active participation, social interaction, varied perspectives, skill advancement, and metacognitive reflection—attributes that collectively facilitate the enhanced transfer of learning to novel situations and challenges (Johnson & Johnson, 1989).

2.6 Lagos State Educational System in Perspective

Lagos state being a state in Nigeria operates the universal basic education system (9-3-4) which replaced the 6-3-3-4 system of education in 2006. According to Uwaifo & Uddin (2009) this was in a bid to meet the Millennial Development Goals 2 (achieve universal basic education) of the United Nations by 2020. The Net Attendance Ratio for the state for secondary school students being 12-17 years is 69% (NPC & DHS, 2014).

The Global Delivery Initiative in partnership with the World Bank in 2016 published an article titled “The Lagos Eko Secondary Education Sector Project: Tailoring International Best Practices to Improve Educational Outcomes at the State Level” authored by Roshan et al, (2016). In their research, the following were documented as the major challenges.

a) Poor people had limited access to secondary education.
b) Gender parity in secondary school attendance was only slightly higher than in Nigeria as a whole
c) Public spending on education was inadequate, of low quality, and subject to limited accountability.
d) Service providers were disenfranchised.

e) School curriculum was not well aligned with labour market needs
f) State capacity for policy making, management, and M&E was lacking

This is corroborated by a study by Okoye & Arimonu (2016) and Lelei (2019) which listed the following as the bane to educational development in Nigeria:

a) Quality of education and academic achievement
b) Inadequate and inaccessible fund
c) Regional disparity in education participation
d) Gender/cultural bias and access to education
e) Weak governance and institutions
f) Academic corruption and fraud
g) Security issues
h) Socioeconomic status
i) Inadequate infrastructure, teaching materials and teachers

Fusing the various problems enumerated by Roshan et al, (2016) and Lelei (2019) a conclusion can be drawn that the issues with education in Lagos and Nigeria are related to institutional, cultural and socio-economic reasons.

In the midst of all the challenges faced by the educational system in Nigeria, it is imperative to state that the introduction of the theories of collaborative learning and learning transfer into the fabrics of curriculum development will have a significant impact in reducing the consequences of these negative factors listed above and help to improve the final outcome of learning which according Bloom's cognitive domain are as shown in the table 2 below.

Table 2:Bloom's cognitive domain (Boston University (2017)

Level	Description
Knowledge (lowest level of learning)	To know and remember specific facts, terms concepts, principles or theories
Comprehension	To understand, interpret, compare, contrast, explain
Application	To apply knowledge to new situations to solve problems using required knowledge or skills
Analysis	To identify the organizational structure of something; to identify parts, relationships, and organizing principles
Synthesis	To create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme
Evaluation (highest level of learning)	To judge the quality of something based on its adequacy, value, logic or use

On the factors that affect the effectiveness of collaborative learning, Qureshi et al, sited social factors such as interaction with peers and teachers, social presence and use of social media. Bandura (1969) identified three major factors namely; personal factor, behavioural

factor and environmental factor. Personal factors related to individual characteristics of students that can be utilized to promote collaboration. Behavioural patterns relate to the actions and interactions among students that reflect successful collaboration. Environmental factors refer to external conditions and support systems that contribute to enhancing collaborative learning. Lai & Cheng (2023), identified the cultural influences on collaborative learning. In their findings, Liu, et al, (2024) improved on the works of Bandura (1969) and enumerated the following classifications; Personal factors (psychological characteristics, social and cognitive attributes, regulatory skills. Behavioural Factors (Group interactive behaviour, group dynamic behaviour and group leader behaviour). Environmental factors (teaching strategies, technology support, teacher guidance and cultural environment). The competencies developed through collaborative learning are cognitive (e.g., problem-solving, innovation), affective (e.g., motivation, self-confidence), and social (e.g., communication, teamwork) competencies (Liu et al, 2024).

On the backdrop of the theoretical overview and the concepts discussed above, the research addresses the following questions:

1. What is students' perception of collaborative learning in their learning experience?
2. What are the predominant collaborative learning techniques utilized by students in their educational institutions?
3. How does collaborative learning influence students' ability to transfer and apply learning to real-world situations?

3 Methodology

This chapter outlines the research methodology employed to investigate students' perception of collaborative learning, the various techniques they engage with and how it affects real world learning transfer in the Oshodi/Isolo Local Government Area of Lagos State, Nigeria.

3.1 Research Design

This study adopts a mixed methods approach, combining both qualitative and quantitative data to gather evidence to answer the research questions proposed in the thesis. The research design encompasses several key components, including the population, sampling technique, sample size determination, data collection instrument, pilot testing, and data collection procedure.

3.2 Population

The population of interest for this study comprises senior secondary school students aged 15 to 18 years within the Oshodi/Isolo Local Government Area of Lagos State. This age range corresponds to students typically enrolled in senior secondary school levels.

3.3 Sampling Technique

The study utilized random sampling technique to select a representative sample of students. Five students from 10 senior secondary schools were selected making it a total of 50 students altogether. The schools were chosen based on their classification (public and private) in equal proportions of 5 each.

3.4 Sample Size Determination

Sample size according to Memon et al (2020) is the total number of respondents or observations to be included in the research. The decision to use 50 participants is to be able to manage and collect rich data as highlighted by Patton (2015), who emphasized that the depth of insight in qualitative research often outweighs the need for larger sample sizes.

3.5 Data Collection Instrument

Data was collected using semi-structured questionnaire and administered through interviews using Google meet. The questionnaire has four sections: demographic data, students' experiences with collaborative learning and the techniques, their perceptions of its effectiveness, and the influence of collaborative learning on their ability to transfer learned knowledge to real-world contexts. The semi-structured nature of the questionnaire allowed for flexibility, enabling the interviewer to explore emerging themes while maintaining a consistent framework for comparison across responses. The inclusion of questions on the collaborative learning techniques in the questionnaire, was based on the publications of previous authors (Anaekwe & Okekeokosisi, 2021; Abubakar & Arshad, 2015) on the prevalent techniques evidenced in Nigeria while "others" was used to get information of other techniques not previously mentioned.

Inclusion criteria

The following were the inclusion criteria.

a) only secondary school students in schools in Oshodi/Isolo local government area were considered.

b) students with consent of their teachers and parents.
c) students who are willing to participate.
d) students who show to have knowledge of collaborative learning and learning transfer were interviewed after the brief introduction of the research topic and purpose of the research.

Exclusion criteria

a) students who are unwilling to respond to the questionnaire.
b) students who failed to show a comprehension of the topic after brief introduction of the research topic and the purpose of the research.

The validity of the questionnaire was reviewed by some teachers who volunteered, and final ratification by research supervisor. The teachers also assisted in getting students ready for the pilot testing.

3.6 Pilot Testing of the Questionnaire

A pilot test of the interview and questionnaire was conducted with a small group of 10 students to ensure clarity, reliability, and validity of the questions. During this stage, it was noted that some participants showed a low understanding of some parts of the questions which made the author explain deeper before they could respond to them. The questions were then rephrased for better understanding before the main data collection.

3.7 Data Collection Procedure

One-on-one online interviews were conducted with students in a quiet and conducive environment in the respective schools. The interview was conducted at agreed times, and each interview was between 10 and 15 minutes. Semi-structured questionnaire which includes 17 questions with both open and close-ended questions were used for data collection. The use of five-point Likert-scale was used in some of the questions for better understanding by the students while follow up questions were used to get better clarity of their opinion on such questions. The open-ended questions were included for in-depth and detailed exploration of their perceptions and opinions regarding collaborative learning, its techniques, and real world learning transfer to enable the researcher to probe for more information and clarification of answers. With participants' consent, all the interviews were recorded using a combination of handwritten notes and an audio recording tool like otter.ai. The responses were later transcribed.

3.8 Data analysis

Responses to the questions were analysed using descriptive statistics, including means, standard deviations, and frequency distributions to summarize the data using Statistical Package for the Social Sciences (SPSS) software for analysis. The open-ended questions were analysed qualitatively using thematic analysis. The data was carefully reviewed to identify recurring themes and patterns Braun & Clarke (2006), Nowell et al (2017). This process involved coding the qualitative responses, grouping them into themes, and interpreting their significance in the context of the research objectives.

Overall, this research design provides a systematic framework for investigating students' perceptions of collaborative learning, its techniques, and real world learning transfer among senior secondary school students in the specified age group and geographical location.

4 Result and Discussion

This chapter explains the key findings of the research. As earlier stated in chapter three, the data analysis process was done using SPSS and thematic analysis to show the respondents' preferences in the form of mean, standard deviation while the qualitative questions will be analysed using thematic representations. A total of 50 students responded to the questionnaire. The demographic characteristics of the respondents is presented below while the research-specific responses were analysed after.

4.1 Participants' information

The research was designed to achieve three objectives. First, to examine the perception of collaborative learning in their learning process; Second, to identify the predominant collaborative learning techniques utilized by students in educational settings; and third, to assess how collaborative learning influence real world learning transfer among students. This chapter presents the key findings of the research following the research questions. Beginning with participants' characteristics, a total of 50 students participated in the study, with the majority (52%) being males and the rest as females. The youngest participants were 15 years and the oldest 18 years old with an average age of about 16 years old. The demographic data further revealed the majority (44%) of the students were in the final year and were distributed among Public and Private schools in the study area. See Table 3.

Table 3: Participant's Information

Characteristics	Number	Per cent
Gender		
Male	26	52.0
Female	24	48.0
Age		
15 years	11	22.0
16 years	17	34.0
17 years	20	40.0
18 years	2	4.0
Level / Grade		
SS1	10	20.0
SS2	18	36.0
SS3	22	44.0
School type		
Private	25	50.0
Public	25	50.0
Total	50	100.0

4.2 Extent to which collaborative learning is incorporated into students' learning processes

From the survey results, most participants (80%) reported engaging in group activities or collaborative projects during lessons, underscoring the prevalence of collaborative learning practices in their educational experiences. Conversely, 20% indicated limited or no engagement in such activities. See Appendix 2.

Further, in an open-ended question – 'Can you provide examples of collaborative learning activities you participated in class?', the participants gave examples of collaborative learning activities they participated in class. The responses revealed a diverse array of collaborative learning activities categorized into eight main themes, emphasizing the multifaceted nature of learning and collaboration in educational settings. The responses underscore the variety of collaborative activities that promote academic learning, skill development, leadership, social interaction, and societal engagement. The themes reveal the effectiveness of collaborative learning in enhancing not only academic outcomes but also personal growth, creativity, and social responsibility. These activities foster a holistic learning environment, equipping students with practical skills, teamwork abilities, and real-world preparedness.

Table 4 presents the themes and quotations from the participants' responses. According to Johnson & Johnson (1999), the findings support their view that collaborative learning helps

students to learn through interaction with peers by sharing ideas, opinions and strategies on a subject matter.

Table 4: Can you provide examples of collaborative learning activities you participated in class?

Theme	Specific activity and example

Academic Collaboration	• Activities directly related to academic learning and subject-specific tasks.
	  ○ **Problem Solving**: *"Finding solutions to some mathematical equations."*
	  ○ **Experimentation**: *"Physics lab experiment," "Experimenting how blue litmus paper turns to red," "Titration and filtration practical in chemistryy."*
	  ○ **Project Work**: *"Forming a group to research about chemical elements," "Presentation of my group project."*
	  ○ **Field Work**: *"A geography field trip to survey an area and analyze environmental factors," "Experiment with plants to see which plant grows faster on different colours of light."*

Creative and Practical Skills Development	• Activities involving creativity or practical application.
	  ○ **Art and Craft**: *"Moulding a cup with clay," "Making and sewing an apron with a hand needle," "Bead making with my class."*
	  ○ **Cooking and Nutrition**: *"Baking a cake during our food and nutrition practical," "Cooking different Nigerian local delicacies."*
	  ○ **Design and Construction**: *"Constructing a small fish pond for our practical in my school," "Creating a model to conserve energy in homes."*

Leadership and Event Management	• Activities showcasing leadership or organizational involvement.
	  ○ **Leadership Roles**: *"As a class captain, I have had the opportunity to work with other class captains in my school."*
	  ○ **Event Planning**: *"I was part of the Christmas committee that is organizing a school event," "Creating and presenting a budget for our school graduation party."*

Social and Cultural Participation	• Events and activities promoting interaction, culture, and entertainment.
	  ○ **Cultural Activities**: *"Decorating the Christmas tree with four other classmates," "Participating in a singing contest."*
	  ○ **Games and Sports**: *"Playing football with team members," "In a sporting activity, I passed a baton to a schoolmate in a relay race."*
	  ○ **Drama and Performance**: *"In my school drama group, I acted different roles on different occasions."*

Community Engagement	• Collaborative tasks involving societal contributions.
	  ○ **Awareness Campaigns**: *"I belong to the Red Cross society in my school, and we used to go to the nearby community to sensitize people who live there."*
	  ○ **Environmental Conservation**: *"Creating a model to conserve energy in homes."*

Peer Learning and Exam Preparation	• Activities involving competitive or intellectual tasks. ○ **School Competitions**: *"I participated in a math competition in another school," "Representing my school to give a speech at a young inventors competition."*

	○ **Friendly Challenges**: *"In geography, I participated in a friendly competition where I worked in a team to answer geographical questions related to countries around the world."*
Real-World Simulations	• Activities replicating real-world scenarios. ○ Career Day Simulations: "On our career day at school, I played the role of a doctor while attending to patients who happened to be my classmates." ○ Role Play: "Acting as a panel of judges for a debate in my school.

The data also revealed how participants perception on collaborative learning. The students expressed varied perspectives on the importance of collaborative learning. Most (42%) found it moderately important, while 38% regarded it as very important. A smaller proportion (16%) viewed it as unimportant, reflecting diverse attitudes based on individual experiences and perceived outcomes.

Table 5: In your opinion, how important is collaborative learning in your educational experience? and why do you feel this way?

Response	Frequency	Percentage
Not important	8	16
Slightly important	2	4
Moderately important	21	42
Very important	19	38
Total	50	100

4.3 Evaluation of Predominant Collaborative Learning Techniques

This section discusses the predominant collaborative learning techniques, delving deeper to highlight the findings of the research based on involvement, effectiveness, and benefits according to the students' responses.

4.3.1 Collaborative Learning Techniques Involvement

The results in Table 6 highlight the dominance of group discussions as the primary collaborative learning technique among students. Sixty–eight per cent (68%) of participants identified it as their most frequently utilised technique. Group discussions play a central role in fostering collaboration. This prevalence likely stems from its versatility, ease of implementation, and ability to encourage active participation and idea exchange among students.

Peer teaching, while less prominent, accounted for 10% of responses, indicating its effectiveness in situations where students take on teaching roles to reinforce their understanding and assist peers. Techniques such as team-based projects and role play, each representing 6%, showcase the diversity of collaborative approaches. However, it could also suggest that their

less frequent use may be attributed to logistical challenges or limited integration into regular curricula.

Other methods like problem-based learning, case studies, and peer assessment were cited by smaller proportions of respondents. Though effective in specific contexts, these techniques may require more structured environments and clearer objectives to gain broader adoption. The data underscores the need for educators to explore and integrate varied collaborative methods tailored to diverse learning needs, ensuring a more comprehensive and impactful learning experience. See Table 6.

Table 6: Different collaborative learning techniques encountered in your lesson and which one stands out?

Collaborative learning techniques	Number	Percent
Group discussion	34	68.0
Peer teaching	5	10.0
Team-based projects	3	6.0
Case studies	1	2.0
Problem-based learning	2	4.0
Peer assessment	1	2.0
Role play	3	6.0
Others	1	2.0
Total	50	100.0

4.3.2 Collaborative learning techniques effectiveness

To determine the mean effectiveness of the collaborative learning techniques identified by the students mean analysis was performed. The scale was measured on a scale of 1 (not effective) to 5 (very effective). An analysis of the results showed Group discussions received the highest mean score of 3.6, with a standard deviation of 1.21. This suggests that group discussions are perceived as the most effective method for enhancing learning. The relatively higher mean indicates a general consensus among participants about the value of this technique, though participants expressed some variability (St. dev. = 1.21).

Peer teaching, on the other hand, achieved a mean rating of 2.34, with a standard deviation of 1.24. This moderately low score reflects that peer teaching is not as widely effective or uniformly valued by participants as group discussions. However, it is a more accepted method than case studies and problem-based learning.

Further, Team-based projects, Case studies, and Problem-based teaching received significantly lower mean scores of 1.56, 1.22, and 1.42, respectively. These low scores imply that participants do not find these methods particularly effective for enhancing learning. The

relatively lower standard deviations (0.81 for Team-based projects and 0.71 for Problem-based learning suggest that the participants' responses were more consistent in rating these techniques as less effective.

Finally, Peer assessment garnered a mean rating of 2.05, which, although still on the lower end, shows slightly better reception compared to Case studies and Problem-based learning. This indicates that while peer assessment may have some utility, it is not a strongly preferred method for learning.

In summary, the results show that not all the techniques are equally effective in an educational context. Group discussions stand out as the most positively received method, highlighting its potential to foster interactive and meaningful learning experiences. Curriculum planners might benefit from prioritizing or integrating group discussions into the curriculum while considering ways to enhance the effectiveness of other methods such as peer teaching and peer assessment. On the other hand, the low scores for Team-based projects, Case studies, and Problem-based learning signal the need for evaluation of these approaches. See Table 7.

Table 7: How would you rate the effectiveness of each of these collaborative learning techniques in enhancing your learning on a scale of 1-5?

Collaborative learning techniques	Number	Minimum	Maximum	Mean	Std. deviation
Group discussion	41	1.00	5.00	3.6	1.21
Peer teaching	41	1.00	5.00	2.34	1.24
Team-based projects	41	1.00	4.00	1.56	0.81
Case studies	41	1.00	4.00	1.22	0.76
Problem-based teaching	41	1.00	4.00	1.42	0.71
Peer assessment	41	1.00	5.00	2.05	1.24
Total (n)	41				

4.3.3 Collaborative learning techniques benefits

In this section, we present the results derived from an analysis of participant responses to the question: “From your experience, which collaborative learning technique do you find most beneficial and why? Provide an example from your own learning where this technique was particularly effective.”

The findings highlight six primary collaborative learning techniques: Group Discussions, Peer Teaching, Peer Assessment, Problem-Based Learning and Case Studies, Team-Based Projects, and General Benefits of Collaborative Learning Techniques. Each technique was described in terms of its distinctive benefits, illustrated with examples provided by participants. These insights shed light on how these methods contribute to academic and personal growth.

A summary of the key themes and illustrative quotes is presented in the table 8, showcasing the diverse ways in which these techniques enhance learning experiences. For instance, group discussions were found to improve communication skills and confidence while also encouraging diverse perspectives. Similarly, peer teaching was praised for simplifying complex topics and fostering retention and leadership. Techniques such as peer assessment and problem-based learning emphasized critical thinking, accountability, and real-world application.

Through this analysis, it becomes evident that collaborative learning techniques collectively contribute to a holistic educational experience, equipping students with essential skills for academic and professional success. The detailed results are structured to provide clarity on the unique contributions of each method in Table 8. Also, appendix 4 further highlights the benefits of collaborative learning as narrated by the students.

Table 8: Most beneficial collaborative learning techniques and why with examples?

Collaborative learning techniques	**Benefits as reported by participants**
Group Discussions	**Benefits to Communication Skills**: Group discussions are noted for enhancing communication and confidence. Example: "Group discussion helps in improving my communication skills." Example: "Group discussion helps in building self-confidence." **Encourages Diverse Perspectives**: Provides exposure to different viewpoints and deeper insights. Example: "Group discussion exposes me to diverse thoughts that lead to deeper insight into the topic." Example: "It gives room for diverse opinions." **Active Participation and Engagement**: Promotes equal participation and brainstorming. Example: "Group discussions encourage active listening and active participation as every group member tends to contribute." **Immediate Feedback**: Facilitates learning through timely input. Example: "Group discussion promotes immediate feedback from group members."
Peer Teaching	**Simplifies Learning**: Peers explain concepts in a relatable manner, aiding understanding. Example: "Peer teaching is beneficial because when a classmate explains something, they often explain it in a simpler way." **Improves Retention**: Teaching peers reinforces the teacher's understanding. Example: "Peer teaching helps me find different ways to explain content, which leads to improved retention." **Encourages Leadership Skills**: Enhances interpersonal and leadership abilities. Example: "Peer teaching enhances interpersonal skills, which are the key aspects of leadership."
Peer Assessment	**Promotes Self-Regulation**: Encourages accountability and self-awareness. Example: "Peer assessment helps me to analyze my strengths and weaknesses." Example: "When I assess my team members, it helps me to be accountable." **Improves Performance**: Increases motivation and identifies areas for improvement. Example: "Peer assessment increases engagement and motivation to perform well."
Problem-Based Learning and Case Studies	**Critical Thinking and Problem Solving**: Both techniques are lauded for developing analytical skills.

	Example: "Problem-based learning promotes critical thinking, problem-solving, and collaboration." Example: "Case studies prepare team members for real-world challenges."
Team-Based Projects	**Collaboration and Creativity**: Encourages teamwork to solve complex problems. Example: "Team-based projects encourage creativity, collaboration, and practical application of knowledge." **Real-World Applications**: Builds skills relevant to real-world problem-solving. Example: "Team-based projects are beneficial as they prepare students for real-world challenges."
General Benefits of Collaborative Learning	Many responses highlight how multiple techniques promote active learning and diverse interactions. Example: "Group discussions and peer teaching promote active participation." Example: "All the techniques are beneficial because they all have their importance."

4.4 Collaborative learning and real-world learning transfer

Collaborative learning is recognized for its potential to bridge theoretical knowledge and real-world application. To explore this relationship, participants were asked whether they agree collaborative learning has helped them apply what they have learned to real-world situations, along with explanations for their perspectives. Most participants agreed collaborative learning techniques were instrumental in the transfer of knowledge to real-life situations. The results showed that 88% of participants agreed while 12% disagreed. See Appendix 3 for the table. Further, the participants provided reasons why they considered collaborative learning techniques as helpful in learning transfer or otherwise.

The participants provided reasons why they agreed that collaborative learning had helped in knowledge or otherwise and the responses were grouped into key themes. The identified themes regarding participants who agreed include **Skill Development, Interpersonal Growth, Real-World Problem Solving, Self-Reflection and Personal Growth,** and **Enhanced Confidence and Communication.** A summary of the result is presented in Table 9. The findings revealed how collaborative learning bridges the gap between academic experiences and real-world applications. It emphasizes the profound impact of teamwork on personal and professional growth, making a strong case for integrating collaborative methods in educational and developmental frameworks.

Table 9: Do you agree that collaborative learning has helped you apply what you have learnt in real-world situations? If you agree, could you explain why?

Theme	Description
Skill Development	Collaborative learning was frequently associated with the development of practical and transferable skills. **Time Management:** One respondent shared, *"I learnt time management skills during collaborative assignments and these skills help me in managing my schedule at home."* **Leadership Skills:** *"Group work introduced me to leadership roles, which is useful in organizing events."* **Negotiation Skills:** A participant noted, *"I developed negotiation skills during group projects, which I used when purchasing a gift for a friend's birthday."* **Creative Thinking:** Another reflected, *"Collaboration encouraged creative thinking, which I used in a local art competition."*
Interpersonal Growth	Engaging with peers in collaborative settings enhanced interpersonal understanding and teamwork. **Empathy and People Management:** One response mentioned, *"I am more empathic now than I was before. Thanks to collaboration."* Another added, *"I am able to understand and manage people well now than before."* **Teamwork:** *"The group projects I participated in helped me practice teamwork, which I applied during a volunteering event."*
Real-World Problem Solving	Many respondents credited collaborative learning with enabling them to approach real-world challenges effectively. **Critical Thinking and Practical Solutions:** *"Through collaboration, I learnt how to think critically and work with others to come up with practical solutions which will help me in the future when facing real-world challenges."* **Systematic Analysis:** Another participant emphasized, *"Working together on case studies showed me how to analyze and address real-world problems systematically."* **Resilience and Adaptability:** *"Teamwork in assignments taught me resilience, which I use to handle challenges in daily life."*
Self-Reflection and Personal Growth	Collaboration prompted participants to reflect on their learning and fostered personal growth. **Constructive Criticism:** A respondent observed, *"Peer feedback during collaborative tasks taught me to receive and apply constructive criticism."* **Self-Assessment:** Another mentioned, *"I always look forward to hearing what people have to say about my work; this skill helps me to assess myself and do better if there's any need to."*
Enhanced Confidence and Communication	Many participants highlighted the positive impact of collaboration on their confidence and communication abilities. **Public Speaking and Presentation Skills:** *"Collaborative learning has prepared me to confidently present my ideas during a youth workshop in my church."* **Boost in Confidence:** *"My self-confidence has moved from zero to 5 all because of collaborative activities."* **Improved Communication:** *"My communication skills have been enhanced since I collaborate with others."*

However, some participants presented a contrary view indicating that collaborative learning techniques were not helpful in learning transfer. The identified themes regarding participants who disagreed include lack of connection between group work and real-world applications, ineffective group work, distractive nature of group work, perception of limited impact on practical learning and the limited exposure to collaborative learning. This aligns with the findings of Darko & Wang (2021) that collaborative learning has some challenges which

can make it less attractive to some students. A summary of participants' responses is presented in Table 10. The finding revealed the challenges experienced by participants while using collaborative techniques in learning.

Table 10: Do you agree that collaborative learning has helped you apply what you have learnt in real-world situations? If no, could you explain why not?

Theme	**Response**
Lack of Connection Between Group Work and Real-World Applications	Many respondents expressed that collaborative learning failed to help them transfer classroom knowledge to practical settings: *"No, I don't think so. The collaborative learning I've experienced hasn't been targeted at solving real-world problems, so it didn't feel very useful for practical applications."* *"In my experience, group work tends to focus more on completing the project than understanding how it connects to the real world."*
Unstructured or Ineffective Group Tasks	Several participants felt that group activities lacked the structure needed to make meaningful connections to real-world scenarios: *"I am neutral because most group work, I've done hasn't been structured enough to connect directly to real-world situations. It often feels disconnected from practical applications."* *"Neutral. I haven't had many chances to participate in meaningful collaborative tasks, so I don't think they've impacted my ability to apply learning."*
Chaotic or Distracting Nature of Group Work	Some respondents noted that the dynamics of group work hindered their ability to focus and apply learning: *"I disagree, I find it hard to focus during group tasks because of different opinions, which makes it difficult to transfer anything useful to real-life scenarios."* *"No, I disagree because it tends to be chaotic, and I find that they don't give me enough clarity to apply the concepts I've learned."*
Perception of Limited Impact on Practical Learning	Respondents expressed that collaborative learning remained abstract or unproductive: *"I disagree, experience with group work has mostly been unproductive, so it hasn't helped me make connections to real-world situations."* *"No, I don't think so. I haven't experienced collaborative learning that effectively ties what we learn in class to real-world situations. It feels too abstract most of the time."*
Neutral or Limited Exposure to Collaborative Learning	A few participants highlighted that they lacked sufficient opportunities to evaluate the real-world impact of group tasks: *"Neutral. I haven't had many chances to participate in meaningful collaborative tasks, so I don't think they've impacted my ability to apply learning."*

Also, to evaluate the extent to which collaborative learning has helped the respondents in learning transfer, a thematic analysis of the question "can you describe a specific situation where working in a group has helped you apply what you learnt to a real-world context?" yielded the following results below. Please see appendix 5 for details.

- ✓ Practical Application of Skills Learned in School
- ✓ Collaboration and Teamwork
- ✓ Leadership and Responsibility
- ✓ Creativity and Innovation

- ✓ Transfer of Scientific and Technical Knowledge
- ✓ Personal Development and Emotional Growth
- ✓ Cultural Awareness and Appreciation
- ✓ Limited Application or Passive Participation

The result buttresses the wide range application of collaborative learning in the development of students cognitive and social abilities and creating holistic individuals ready for the challenges ahead and bringing solution to real world problems. This aligns with the findings of Desse, (1958), Lebeman & Macdonald (2016) that the whole essence of learning is to adapt the learning and implement it to diverse situations through creativity, problem-solving and flexibility.

5 General Discussion

This chapter provides an overview of the research findings in relation to the research questions and theoretical overview. Also, it discusses the potential recommendations, the limitations encountered during the research, contributions of the research to existing literature and future ways the research can be improved upon. The three research questions were clearly answered from the result of the responses.

5.1 Summary and suggestions

The results of this study highlight how collaborative learning is deeply embedded in the educational environment of Oshodi/Isolo. A remarkable 80% of students reported engaging in collaborative learning activities, indicating a widespread embrace of this approach. This result reflects the earlier findings by Sulaiman & Shahrill (2015) that majority of the students in developing countries are engaged in collaborative learning in secondary schools.

Group discussions emerged as the dominant collaborative learning technique with 68% of the respondents stating it as their most preferred. This is followed by peer teaching with 10% while the others methods like team-based projects, role play, and problem-based learning had lower usage rates (2-6%). This is similar to the publications by Anaekwe & Okekeokosisi (2021), Abubakar & Arshad (2015), which recognized peer tutoring, problem-based learning and group discussion as the dominant collaborative learning techniques.

On the benefits of collaborative learning to real world learning transfer, 88% of participants agreed that collaborative learning helped in real-world knowledge application. The highlighted benefits include enhanced communication skills, critical thinking, leadership

development, and interpersonal growth which the findings Laal & Ghodsi, (2012). The 12% who disagreed cited issues such as poor structure, lack of real-world connection, and ineffective implementation.

The research also provided support that collaborative learning helps in developing the cognitive and social development of the students as evidenced in table 9 above. This aligns with the findings of Laksmiwati et al, (2022) that collaborative learning has significant impact on students' social skills development. It is also worth mentioning that during the course of the research, a collaborative learning method (role play) that was not initially considered in the questionnaire was discovered as one of the collaborative learning techniques.

In conclusion, this study provides valuable insights into the dynamics of collaborative learning in Oshodi/Isolo, Lagos State. It underscores the widespread adoption of collaborative learning practices, the variety of techniques employed, and how it influences the student's learning outcomes. By emphasizing the importance of collaborative learning methodologies, this research advocates for their continued integration into educational practices, fostering a conducive learning environment, making a positive impact to holistic educational outcomes. It is worth stating collaborative learning should be adopted into the creation of curriculum for different levels of education in Lagos state and Nigeria in general while also improving on the collaborative learning techniques being currently practiced in most schools as it seems to fall short of what is practiced internationally.

5.2 Limitations of the Study

The major limitation to the research was the use of only senior secondary school students as the junior students were on break and unavailable.

The other observed limitation was the use of otter.ai in transcription as some of the words it captured were not really what the participant meant due to accent issues. This was corrected by replaying the video where in doubt and correcting the affected word, or phrase to capture the real meaning.

Another limitation to mention is that the data was self-reported data, which can be influenced by social desirability bias or lack of accurate recall, causing participants to overestimate or underestimate their behaviours or achievements.

In the future, a broader participation of both junior and senior secondary school students should be considered, and use of a transcription method that has possibility of selecting accents of the respondents could help correct the noted limitations.

Acknowledgements

This thesis would not have been possible without the guidance and help of the Almighty God who gave me the strength, ability and wisdom to undertake this research study and complete it. I would like to extend my sincere gratitude to my supervisor, Professor Leo Aleksander Siiman, whose unwavering support, guidance, and valuable suggestions made a significant improvement on this work. I am also grateful to the program director, Emanuele Bardone for his contributions and assistance and Natalia Edisherashvili for reviewing my thesis.

To all my course mates, your cooperation, constructive input and perspectives have immensely enriched the content and structure of this thesis and I am grateful for the support and engagements.

I owe a deep sense of gratitude to my husband Chizuruoke Nnadi for his immense support, encouragements, prompt and timely suggestions and to all my children especially Utochukwu for his time and interest in my academic achievements.

To everyone who has supported and shown commitments to my thesis, I am grateful. Your encouragements and advice played a very important role to the completion of this thesis.

Author's Declaration

I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.

Omolabake Aminat Vivian Nnadi

14/01/2025

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Appendices

Appendix 1 - Questionnaire for the students

Section 1: Demographics

1. What is your age? …….

2. What is your gender?
   a. Male
   b. Female
3. What is your current Class / Form / Level?
……

4. What is your school type?
 a. Public
 b. Private

Section 2: Perceptions of Collaborative Learning

5. Do you engage in group activities or collaborative projects in your courses/lessons?
   a. Yes
   b. No

Follow-up question:

- What kind of activities do you usually do when you work with others? (For example: group discussions, projects, problem-solving tasks, etc.)
- What factors affect how often you participate in these activities?

6. How often do you participate in collaborative learning activities?

Never	Rarely	Sometimes	Often	Always

7. In your opinion, how important is collaborative learning in your educational experience?
Tick

Not important	Slightly important	Moderately important	Very important	Extremely important

Follow-up question:

- Why do you feel this way? What benefits or challenges do you think come with collaborative learning?

8. Can you provide examples of collaborative learning activities you've participated in class?
……
……
……

Section 3: Techniques of Collaborative Learning

9. Can you tell me about the collaborative learning techniques you have experienced in your courses? Which one stands out to you? (Please share any specific examples if possible.)

	Tick
Group discussions:	
Peer teaching:	
Team-based projects	
Case studies	
Problem-based learning	
Peer assessment	
Other (specify)……..	

10. How effective do you find each of these techniques in enhancing your learning? (Rate on a scale of 1 (Not effective) - 5 (very effective)). *Tick the option that applies to you.*

	1	**2**	**3**	**4**	**5**
Group discussions:					
Peer teaching:					
Team-based projects					
Case studies					
Problem-based learning					
Peer assessment					
Other (specify)….					

11. Which collaborative learning technique do you find most beneficial, and why?

……
……
……
……

Section 4: Real world Learning Transfer

12. Do you agree that collaborative learning has improved your ability to apply what you've learned in real-world situations? Could you explain why or why not??

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

13. In your experience, to what extent has collaborative learning improved your problem-solving skills? Can you provide an example to support your answer? **Tick**

Not at all	Slightly	Moderately	Very much	Extremely

14. Can you describe a specific situation where working in a group allowed you to apply what you learned to a real-world context? How did it help you?

……
……
……
……

15. How likely do you think you are to use teamwork or group learning activities in your future schoolwork or career? Could you explain your reasoning? **Tick**

Very unlikely	Unlikely	Neutral	Likely	Very likely

16. In your opinion, what are some ways we could improve collaborative learning to make it more effective in helping students transfer their learning to real-world situations?

……
……

Section 5: General Feedback

17. Are there any other aspects or benefits of collaborative learning that you think are important for your education or learning? Please share your thoughts.

……
……

End

Thank you.

Appendix 2: Do you engage in group activities or collaborative projects in your lesson?

Response		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Yes	40	80.0	80.0	80.0
	No	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

Appendix 3: Do you agree that collaborative learning has helped you apply what you have learnt in real-world situations? Could you explain why or why not?

Response		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	88.0	88.0	88.0
	No	6	12.0	12.0	100.0
	Total	50	100.0	100.0	

Appendix 4: Are there any other aspect or benefits of collaborative learning that you think are important for your learning? Please share your thoughts.

Academic and Intellectual Development	Improves academic performance. Enhances intellectual development. Promotes continuous learning and learning transfer. Makes learning concrete, permanent, and easier. Helps in preparing well for exams. Fosters better understanding and retention of knowledge.
Skill Development	Develops communication and teamwork skills. Enhances problem-solving strategies and critical thinking. Improves articulation of ideas and points of view. Promotes active listening and conflict resolution. Sharpens creative and time management skills
Social and Emotional Benefits	Builds strong peer relationships and unity among team members. Helps in boosting self-confidence and morale. Encourages tolerance and seeing things from other perspectives. Promotes cordial relationships and active participation.
Engagement and Motivation	Makes learning fun, engaging, and interactive. Increases interest and curiosity in learning. Encourages consistent studying and participation. Boosts motivation for slow learners to improve.
Preparation for Future Challenges	Prepares students to face real-world challenges. Develops skills relevant for exams, careers, and life. Builds adaptability and resilience for future tasks.
Personal Growth and Development	Encourages personal development and self-improvement. Promotes inquisitiveness and open communication. Allows students to learn new things beyond what was taught.
Collaboration and Teamwork	Brings unity and teamwork among group members. Encourages sharing of knowledge and ideas. Provides opportunities to learn from others' strengths.

Appendix 5: Can you describe a specific situation where working in a group has helped you apply what you learnt to a real-world context?

1. Practical Application of Skills Learned in School Many responses highlight the transfer of classroom knowledge to real-world scenarios: • *"I learnt different methods of meal preparation at school, I replicated this at home during festive periods since we had lots of guests visiting us. This helped my creativity skills."* • *"I applied the budgeting and planning knowledge I learnt from school to start saving my pocket money."* • *"After learning about crops, seeds, and different types of farming, I now grow a small vegetable garden at home."*
2. Collaboration and Teamwork Several participants mention how group projects enhanced their teamwork and interpersonal skills: • *"We built a model bridge using limited materials. It taught me to use creativity and collaboration to solve practical problems."* • *"During a recycling project in our school, my group created a campaign to educate people about proper waste segregation."* • *"We worked together to test soil quality. It showed me how collaboration can improve research outcomes."*
3. Leadership and Responsibility Some responses emphasize leadership experiences and responsibility: • *"Putting my leadership skills into practice by organising a student council election in my school."* • *"I organized and led a team in collecting and sorting recyclable materials, promoting environmental awareness and encouraging community action."* • *"Planning a sports event for our school, I organized schedules and logistics. This helped me use planning and communication skills in a real situation."*
4. Creativity and Innovation Many students describe situations where they applied creative thinking and problem-solving: • *"Using eggshells to make homemade local adhesive to clean kitchen utensils at home. This helped me to improvise."* • *"We were given a music assignment to compose a school anthem. This project helped me learn how to collaborate creatively and apply musical concepts."* • *"Designing a poster for road safety awareness: I applied graphic design and communication skills to create an informative and impactful poster."*

5. Transfer of Scientific and Technical Knowledge

Students showcase how they applied theoretical concepts to practical settings:

- *"My group built a small wind turbine. It helped me see how theoretical physics concepts work in the real world."*
- *"We built a small irrigation system at school during our agric practical, and I used the knowledge to demonstrate effective water distribution for crops."*
- *"I learned about decomposition in biology and used it to create an eco-friendly waste solution at home."*

6. Personal Development and Emotional Growth

Responses reflect skills like self-control, emotional regulation, and planning:

- *"I mastered how to control my emotions. A fellow student spoke to me rudely, and I just ignored her."*
- *"I applied self-study and planning strategies to collaboratively create and stick to a group study timetable for better academic preparation."*
- *"I plan my daily schedule and allocate time for studies, which I learned when we were taught priorities and time management."*

7. Cultural Awareness and Appreciation

A few participants note experiences that enriched their cultural understanding:

- *"I joined a group to perform a traditional dance; this has helped me appreciate our culture more."*
- *"I created a museum-style exhibit about different cultures in Nigeria. I applied research skills to create presentations that engaged others."*

8. Limited Application or Passive Participation

Some responses highlight students' struggles to connect classroom learning to practical applications:

- *"Not really. I joined a group activity in class, but I mostly observed rather than actively participating, so I didn't fully apply what I learned."*
- *"I was part of a group for a task once, but I didn't contribute much because the roles weren't clear."*
- *"I struggled to connect what we researched to anything outside the classroom."*

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