The Mediating Effect of Cooperative Learning on the Relationship Between Learning Environment and Language Skills of Students: A Mixed Methods Study

Janrey Mark M. Davin*, Febbie Faith Ramos

UM Peñaplata Collge

***Corresponding author**

INTRODUCTION

Background of the Study

Language skill is the capacity to create and convey meaning through the use of the English language, including reading, writing, speaking, and listening (Eslit & Michael, 2013). Having high proficiency in one's language skill is significant especially for college students – especially those who are English Majors in their transition towards being professional (Norcross, 2020). As cited by Borkala (2022), language skills are a sought-after tenet that employers look for with their employees - it decides if one can get a job or not. However, due to the differences of first language and English as a second or foreign language, Wang and Li (2013) as supported by Wilczewski and Alon (2022) posited that college students who are non-native English speakers may find it difficult to speak, write, listen, and read in English as opposed to their lingua franca.

Globally, Nasirudeen & Xiao (2020) revealed in their study that international students in Singapore perceived difficulties in English language skills. Likewise, Delbio, Ilankumaran, & Abilasha (2019), claimed Indian learners of second language needs to give more attention on language skills as well as the components of the language. As supported by Shah et al. (2022), lack of knowledge of words of college students in Sanghar, Pakistan can negatively effect on their reading, writing, speaking, and listening skills. Indeed, being successful in the context of education, it is necessary that the students must be skillful throughout the four main skills. Thus, in the study of Nithideechaiwarachok et al. (2022), it was indicated that Thai college students in Khon Kaen University, Thailand achieved a low score in writing, reading, speaking, and listening.

In the national context, a study by Zarate, (2022) in Cebu Normal University, Philippines, they were found to be weak in speaking, reading, and writing before deficient in listening. Moreover, English language learners are likewise having trouble picking up the language. Even after years of education, average Filipinos still struggle the most with grammar and English language skills (Pachina, 2021). Additionally, as mentioned in Education First, (2019), result of an online Standard English Test (SET) revealed a declining trend in the English language skills of Filipinos. Also, in the study Giray et al. (2022), it was indicated that college students in local universities in Metro Manila obtained a lack of language skills. Thus, factor that causes their lack of language skills can be morphological, syntactical, and phonetical.

Similarly, Aparece & Bacasmot (2023), students enrolled in three academic institutions in Davao City demonstrated only moderate levels of speaking, listening, reading, and writing. Among the top reasons for language difficulties were the difficulty in explaining ideas using the English language. Subsequently, Bravo (2022) conducted a study in Davao del Sur, revealed that students' speaking and writing were in beginning level while listening and speaking skills were within developing skills.

Students' inability to speak English and them poor comprehension and understanding of written texts are both glaring signs of their insufficient knowledge of the language (Minshar, 2020). In addition, students are weak in understanding conversations they listen to in English and are weak in written expression. This led to the increase in learning disabilities in the English language among students and its great impact on the future of children, their social and professional lives, and their psychological stability. Such a phenomenon requires a

comprehensive and insightful view of the familial and social factors interacting with the preparations, tendencies, and psychological trends of each student separately. Also, it is important to avoid random judgments and intolerant trends such as the misconception of some teachers and parents that learning disabilities are linked to misunderstanding and mental retardation (Musaed, 2018). Therefore, this problem triggered the researcher to investigate and identify the most important reasons behind the students' learning difficulties in the English, including those learning language skills. Further, most of the universities or colleges are adhered to Outcome Based Education, therefore, the researcher is interested in knowing if there is an intervention coming from the cooperative learning, especially in the collaborative aspect of learning, if it is really increasing the relationship or influence to the learning environment and language skills and their significant relationship. Additionally, the study is a trivariate study using mixed-methods which ensures further depth information.

A copy of the study will be given by the researcher to the person who assisted in its conduct after it is finished. At the regional research congress and research forum, the researcher planned to present the findings to curriculum specialists, researchers, and English teachers from the Commission on Higher Education (CHED). Additionally, the researcher wanted to present the findings at a national and worldwide forum in order to share the result of the study. After then, the researcher would publish that would reach a wider audience.

Purpose Statement

The purpose of this mixed-methods explanatory sequential study is to identify the level of learning environment, language skills, and the mediating effect of cooperative learning on the relationship between learning environment and language skills of college English students in Region XI. To elaborate on the quantitative outcomes, this process entails gathering the qualitative data following a statistical analysis of the quantitative phase results. Furthermore, college English students in Region XI will be the key source of data for the study's quantitative phase, which will assess the students' language proficiency through cooperative learning and learning environment. The purpose of the qualitative phase is to validate the validity of the mediation model based on the quantitative findings. Thus, the researcher will use IDI and FGD in conducting the study.

Research Questions

1. What is the level of learning environment, cooperative learning, and language skills of English major college students in Region XI?
2. What is the significance of the mediating effect of cooperative learning on relationship between learning environment and language skills of English major college students in Region XI?
3. What are the standpoints of the participants on the salient points in the quantitative results?
4. How do the qualitative results explain the quantitative results of the study?

College students, language instructors, academics, scholars, editors, and the public who are learning to improve their language skills will all be part of the study's audience. Considering the rapidly changing global environment, this study is extremely pertinent to the current state of education, and the findings of the paper may ultimately benefit academic institutions. Hence, the results of the study can be beneficial for both language instructors and college learners through understanding the more profound implications of the mediating effect of cooperative learning to the relationship between learning environment and language skills of the college English students. Moreover, the findings may be utilized as the best practices and opportunity for improvement of an academic institutions. Finally, by understanding and exploring characteristics related to this study, scholars and editors may benefit from this study.

METHODS

The research design, study location, research respondents and participants, instrument utilized, data collection, data analysis, and sequencing, emphasis, and mixing techniques are all presented in this chapter. This section

also includes an explanation of the guidelines, methodological difficulties that should be expected, problems with the study's credibility, and validity issues with the instruments, and ethical considerations.

Research Design

This study will use a sequential explanatory mixed methods approach, in conjunction with regression specifically mediation analysis and phenomenology. According to Li et al. (2015), the mixed methodologies approach is a methodology that combines quantitative and qualitative approaches at various stages of the research process, such as data collection, interpretation, and philosophical presumptions. Additionally, under the explanatory sequential approach, qualitative data contribute to the explanation of or extension of preliminary quantitative findings, as stated by Creswell and Clark (2017). Lune and Berg (2017) emphasized the use of phenomenology to clarify and identify certain phenomena from the viewpoints of people who are fully engaged in a particular circumstance. This is typically characterized from a human-centric perspective as the process of obtaining comprehensive data and insights using qualitative, inductive techniques like participant observation, interviews, and discussions and presenting them from the perspectives of the study participants.

The quantitative strand of this study will gather data and use the descriptive-correlation approach for statistical analysis. Schmitz (2012) states that evaluating two or more relevant variables and assessing if a relationship exists between them constitutes a descriptive correlation design. Furthermore, to identify and explain the portion of the process that leads to the association between learning environment and language skills, Baron and Kenny (1986) developed mediation analysis, which included the addition of a third variable—the cooperative learning —that could act as a potential mediating variable. Researcher will discuss and investigate the mediating role that cooperative learning plays in the association between English major college students' language skills and learning environment. A five-point Likert scale will be included in the modified survey questionnaire that will be used for the survey method. Moreover, a particular quantitative outcome that requires more explanation will be identified by the researcher (West, 2012), such as statistical discrepancies between individuals who would score at extreme levels or unanticipated findings (Baheiraei et al., 2011). The qualitative stage will be guided by these findings. As a result, the information the researcher collects will serve as the foundation for refining the interview guide questions that will be used in the qualitative phase.

Furthermore, the benefits and drawbacks of this mixed-methods design have been extensively discussed in the literature (Creswell, Goodchild, and Turner 1996; Green and Caracelli 1997; Creswell 2003, 2005; Moghaddam, Walker, and Harre 2003). Its advantages include ease of use and opportunities for a more in-depth analysis of the numerical results. This approach can be quite beneficial when unexpected results from a quantitative investigation are achieved (Morse 1991). The design's shortcomings include its lengthy processing times and the availability of resources for collecting and evaluating both types of data.

While the tradition of phenomenology was taken into consideration in the context of qualitative research. The researcher discussed the cooperative learning, learning environment, and language skills. According to Tejero (2011), phenomenological investigation is a useful qualitative method for examining a person's experience. By combining different data collection techniques, such as reading documents, watching videos, conducting interviews, or visiting locations and events, researchers can gain insights into participant motivation when conducting a phenomenological study. This allows researchers to understand the meaning participants place on the subject matter under investigation.

The term "phenomenology" refers to the philosophical process of exploring or interpreting the meaning of an individual's everyday experiences, as noted by Hoffman (2014) and Henson (2016). For this reason, phenomenology was also taken into consideration for the study's design. When dealing with pre-reflective, or phenomena encountered, the method is known as phenomenology. It is possible to study any occurrence phenomenologically. Because it uses epoche and reduction, this approach is called phenomenological reflection.

Place of the Study

This study will be conducted in Davao Region (Region XI), Philippines, which, as depicted in Figure 4, consists of provinces in Davao region namely: Davao del Sur, Davao del Norte, Davao Occidental, Davao de Oro, and Davao Oriental. According to the Statistical Bulletin - CHED, Academic Year 2023–2024, the region has enough students, so the researcher chose this location to perform the study. It revealed that the Region had a 92.60% enrollment rate for SY 2023–2024. Furthermore, this indicates that there will be enough participants to carry out the study.

Figure 3. Map of the Philippines and Davao Region

Research Respondents/Participants

This part describes the participants in both quantitative and qualitative strands of the study. Participants are essential to understanding the research issue and, ultimately, achieving the goal of the study.

Quantitative Strand

The 300 English major college students in the Davao Region who are purposefully selected from among the region's several provinces would be the study's responders. As Hair et al. (2013), the research study's sample size is within to 200–300 people.

In the data collection, using simple random sample procedures, survey participants will be chosen based on the criteria that they are first-year to fourth-year English major college students. A probability sampling strategy called simple random sampling guarantees that each person, thing, event, or thing in the population has an equal chance of being chosen for the study (Nzeneri, 2010). It is a methodical approach to surveying that produces a sample that guarantees population generalizations. Since English is a teaching medium, the researcher selected English students at all levels. It's also critical to remember that English language learners expect you to be exceptionally proficient in the language, particularly when it comes to word pronunciation. Nonetheless, the study's exclusion criteria include pre-baccalaureate, master's, doctoral, and post-doctoral students as well as those enrolled in programs outside of the Davao Region.

Qualitative Strand

There will be 17 participants in this study's qualitative strand. These subjects are drawn from the 300 research respondents. They will be selected with purpose, according to the same standards as the responders. It is a sampling technique that is used to select participants based on the criteria of the study where certain characteristics, knowledge, expertise, or experiences deemed relevant to the research objectives are considered (Patton, 2014).

Research Instruments

The research tools employed in this mixed-methods study's qualitative and quantitative portions were covered in this section.

Quantitative Strand

For the quantitative part of the study, which measures learning environment, language skills, cooperative learning, and the significant link between these variables, the research tools will be survey questionnaires. The first set of study instruments will consist of a three-part questionnaire that has been adjusted and adapted: cooperative learning, language skills, and learning environment.

Learning Environment. The questionnaire is adapted from the study of (Elvira et al., 2016) which has seven indicators such as sharing and comparing knowledge, relevance, self-control and self-reflection, epistemological understanding, teaching for understanding, support learning for understanding, and problem-solving strategies. Each indicator has at least two (3) to seven (7) items or statements. The following metrics will be used to describe the degree of learning environment: sharing and comparing knowledge, relevance, self-control and self-reflection, epistemological understanding, teaching for understanding, support learning for understanding, and problem-solving strategies. As a result, the mean score will be examined using the matrices below:

Range of Means	Description	Interpretation
4.20 – 5.00	Very High	This indicates that the learning environment of English major college students is always manifested.
3.40 – 4.19	High	This indicates that the learning environment of English major college students is oftentimes manifested.
2.60 – 3.39	Moderate	This indicates that the learning environment of English major college students is sometimes manifested.
1.80 – 2.59	Low	This indicates that the learning environment of English major college students is rarely manifested.
1.00 – 1.79	Very Low	This indicates that the learning environment of English major college students is never manifested.

Language Skills. The questionnaire is adapted from the study of (Griffiths, 2004). This consisted of reading skills, writing skills, listening skills and speaking skills. Every indicator has ten (10) items in the survey questionnaire. Also, in interpretation the data for the language skills, it will measure based on the level of speaking skills, writing skills, listening skills, and reading skills that is described through the following matrices:

Range of Means	Description	Interpretation
4.20 – 5.00	Very High	This indicates that the language skills of English major college students are always evident.
3.40 – 4.19	High	This indicates that the language skills of English major college students are oftentimes evident.
2.60 – 3.39	Moderate	This indicates that the language skills of English major college students are sometimes evident.
1.80 – 2.59	Low	This indicates that the language skills of English major college students are rarely evident.
1.00 – 1.79	Very Low	This indicates that the language skills of English major college students are never evident.

Cooperative Learning. It is adapted from the study of (Fernandez, et al., 2022) which has fifteen (15) statements. As to Sahlqvist (2011) and Kost et al. (2018) as cited by Sharma (2022), shorter surveys are preferrable since they have a high completion rate. People are more likely to respond to short versions than long iterations. Furthermore, the measurement of every variable will follow the pattern of a Likert scale, primarily utilizing a 5-point scale with five representing the highest and one the lowest. Thus, the mean scores will reflect the degree of cooperative learning based on the following matrices:

Range of Means	Description	Interpretation
4.20 – 5.00	Very High	This indicates that the cooperative learning of English major college students is always evident.
3.40 – 4.19	High	This indicates that the cooperative learning of English major college students is oftentimes evident.
2.60 – 3.39	Moderate	This indicates that the cooperative learning of English major college students is sometimes evident.
1.80 – 2.59	Low	This indicates that the cooperative learning of English major college students is rarely evident.
1.00 – 1.79	Very Low	This indicates that the cooperative learning of English major college students is never evident.

Qualitative Strand

The second tool will be an interview guide script made up of questions the researcher has developed based on the aspects of language skills, cooperative learning, and learning environment. These variables will be used to build the statements, which will align the concepts from the survey questions. Expert validation of this interview guide questionnaire will be conducted. Three sections will make up this interview guide: part I, which is the preliminary section; part II, which is the actual interview; and a letter of authorization to the participants.

Validity of the Instruments

The panel of specialists will validate the survey questionnaires. After the modifications have been made and incorporated, the research adviser will receive the first draft of the research instrument and offer comments, suggestions, and advice to improve its presentation. A group of experts will review the final copy in order to make adjustments. The final draft will incorporate the modifications, observations, and suggestions made by the experienced validators prior to data collection. Thirty students from specific colleges will participate in a pilot study to determine the reliability index using the Cronbach Alpha test.

Before being utilized to gather data, the modified survey questionnaires and interview guide questions for this study will be approved by five experts at each stage. This is crucial for evaluating the surveys' contents and giving them a place to improve the questionnaires of the study. Furthermore, a review of the audio material that will be utilized for IDI and FGD will be conducted in order to identify any transcription errors. An FGD should ideally include three to twelve people, on average (Gundumogula, 2020).

Data Collection

The following are the procedures to be followed when gathering data. First, in a letter submitted to the dean of the graduate program at the University of the Immaculate Conception, the researcher will seek permission to carry out the study throughout the entire region. The process of gathering data will start with college English majors receiving surveys, with the dean's approval.

The researcher will send a letter of permission to the school heads of the chosen higher education institutions in region 11 using the approved letter from the UIC Graduate School Dean that is attached and the certification from the Research Ethics Committee. Subsequently, the researcher will gather the respondents' completed questionnaires. To make the statistical analysis easier, data tallying will be completed immediately following the collection. Lastly, statistical tools will be used to examine and interpret the data. The study will use a mixed methods approach and call for both quantitative and qualitative instrument sets.

Quantitative Strand

Following permission, the researcher will seek a school representative to find participants who fit the study's eligibility requirements. The representative will be the one in charge of locating possible study participants. The researcher will next offer a thorough recruitment procedure along with a rationale for the suggested strategy. The survey questionnaire will be provided to the respondents after they have been identified.

The survey questionnaire has an informed consent to set that the respondents cannot proceed to the survey without completing the informed consent first. This means that the respondent must affix his/her signature first to signify voluntary participation. This is a requirement before answering the survey questionnaires. Items from the modified research instruments that were covered in the preceding part make up the survey questionnaires. Since their names will not appear elsewhere in the study, respondents can be sure that the researchers will keep their responses private. The researcher will organize and encrypt the data once respondents have completed the survey, so it is prepared for statistical analysis.

Qualitative Strand

A guide for conducting interviews is required for the qualitative strand. The panel of subject-matter experts will validate the interview guide, which will be created by the researcher. Focus group discussions and in-depth interviews will be used to collect data. The informed consent form will still be used by the researcher, along with an overview script outlining the goal of the investigation. The participants will be made aware that this will be an optional, private activity. To provide a thorough transcription of the participant's response, the researcher will thus record the full in-depth interview session and focused group discussion. This will be carried out upon each IDI participant's agreement. The researcher will guarantee the safety of the recorded interview and that all precautions are taken to preserve its security. The interview will take place via conferencing or google meet.

Focus group discussions and in-depth interviews serve as the framework for the data collecting. When comprehensive information regarding the subject's beliefs and actions is thoroughly examined, the interview is considered legitimate. To learn more about the participants' perspectives, awareness, and responses, an IDI will be carried out. As a result, compared to other data collection approaches, it can also offer far more detailed information (Boyce & Neale, 2006).

To facilitate triangulating the conversations during IDI, a FGD will be used. There will be seven participants in the FGD, and the researcher will facilitate the discussion. Lewis and Muzzy (2020) suggested doing the following: the researcher should notify the participants ahead of time about the FGD interview, provide a quiet space, provide the required equipment, etc. To prevent numerous persons from taking at once, the researcher will use a "round-robin" structure during the interview. When a subject wants to respond, the researcher will ask them to raise their hands. Additionally, Creswell (2013) emphasized that guidelines for gathering qualitative data, such as IDI and FGD, should be closely followed. data, including an IDI and FGD.

Data Analysis

The method that will be used to examine the data from the study's quantitative and qualitative stages is covered in this section.

Quantitative Strand

Descriptive statistics, Pearson r, and regression analysis will be used to assess the quantitative data. Pearson r will be used to determine the significance relationship of the learning environment and language skills; learning environment and cooperative learning; and language skills and cooperative learning. The standard deviation will be employed to gauge the respondents' degree of dispersion. In determining the level of learning environment, language skills and cooperative learning, mean will be utilized. Thus, the multiple regression will be used to predict the value of language skills based on cooperative and learning environment. A medgraph using the Sobel z-test will identify that mediation and strengthening of cooperative learning mediate the relationship between learning environment and language skills.

Qualitative Strand

Conversely, the researcher will apply theme analysis to examine the information collected from focus group discussions and in-depth interviews. This approach focuses on identifying, analyzing, and documenting themes or patterns in data. According to Boyatzis (1998), themes are patterns found in data sets that are significant for explaining a phenomenon and are connected to a particular research subject. These are the procedures for examining the qualitative information. Finding recurring themes comes first, followed by seeing patterns in the data, creating key themes through thematic clustering, constructing the timeline, utilizing the data to answer research questions, coming to a conclusion.

Furthermore, to familiarize with the data, the researcher will read and reread the transcripts before beginning the theme analysis. The data will be organized so that it is possible to generate simple codes. The concepts will be broken down into smaller meaning units by codes, which will then be examined and grouped in accordance with themes. The topics will then be developed, examined, altered, and created. Each topic stood out from the others while remaining constant. Lastly, definitions will be provided for the identified themes to further clarify their meaning (Creswell, 2013). After the actual data collection, the detailed step in data analysis will be employed.

Sequence, Emphasis, and Mixing Procedures

A sequential collection of quantitative and qualitative components will be employed in this study. Hence, the quantitative data is given more emphasis being backed by empirical tools over qualitative data. Nonetheless, integration and corroboration happened during the analysis and interpretation stage.

Sequence. This study employed an explanatory sequential mixed methods research design. The researcher independently gathers quantitative and qualitative data about the language skills, cooperative learning, and learning environment of English major college students in region XI using the triangulation approach. The data that will be collected in the quantitative strand will be confirmed further in the qualitative strand to explain the salient results of the survey. The qualitative data will determine the depth of the quantitative results of the study.

Emphasis. Since the quantitative data uses empirical instruments and provides a substantial foundation for the qualitative findings of the study, it will be accorded more weight.

Mixing Procedures. The purpose of combining qualitative and quantitative data is to allow the former to explain the latter. Hence, will be given to how relevant the qualitative and quantitative data are. Along with integrating data into the study's findings and interpretation, this will also help answer/fulfill the study's objectives and research questions. The qualitative information may support or refute the quantitative conclusions.

Additionally, in order to support the gathering of the qualitative data phase, the integration of the data entails linking the degree and relationship among the following variables: learning environment, language skills, and cooperative learning, as well as the mediation analysis from the quantitative phase. The first cycle's results will be thoroughly examined during the study's qualitative phase since data integration calls for the inclusion of

questions that are essential for providing the most detailed explanation of the quantitative results. Thematic analysis will be applied to the qualitative data in the second step. Subsequently, the investigator will ascertain whether the qualitative information validates and reinforces the quantitative findings.

Figure of Procedures

Figure 3 shows the explanatory sequential mixed methods design flow. As can be seen, the researcher chose the 300 respondents to whom the survey questionnaires were given in order to obtain the numerical item scores in terms of collecting quantitative data. In order to obtain the results, the researcher will use both descriptive and inferential statistics, including multiple regression, the mean, standard deviation, Pearson r, and Medgraph. The quantitative data analysis process will make use of these statistical instruments.

On the other hand, the researcher will create interview schedules and guidelines and use simple random sampling in the selection case and interview development to guarantee that every participant has an equal chance of being chosen. As a result, the researcher will choose and identify the 17 participants for the FGD data saturation, and the IDI researcher will be able to obtain qualitative data from the transcripts. The researcher will utilize theme analysis to extract codes, central concepts, or themes from the qualitative data. In order to arrive at a very comprehensive discussion, consequences, and recommendations to combine the quantitative and qualitative result phase, the researcher will interpret and explain the quantitative and qualitative data. The investigator will utilize his proficiency in statistics and data analysis to verify the accuracy and reliability of the findings.
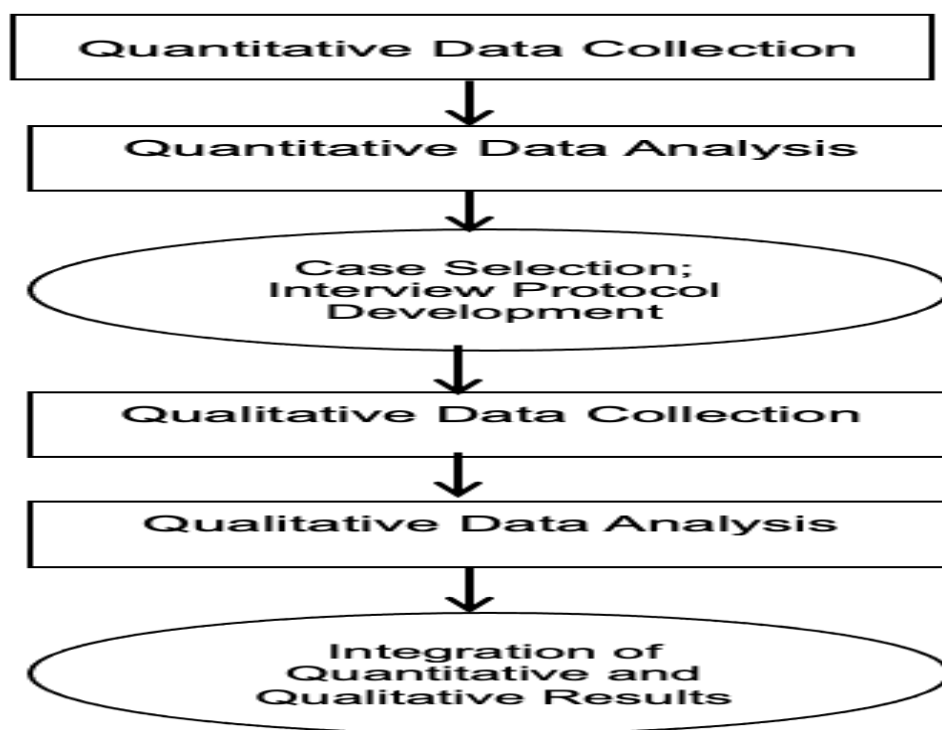

Figure 3 Flow of Procedures

METHODOLOGICAL ISSUES

This section will be the methodological issues which cover the design, participant selection, and resources.

Design. In the field of social research, mixed methods have been widely used, despite the fact that most people were already familiar with them many years ago. In his proposal, Caruth (2013) stressed that scholars have disputed common concerns about utilizing mixed techniques, including as the superiority of one approach over

another, in addition to readers. Some writers disagreed with the merging of the worldviews of qualitative and quantitative research. The study also hinted at the difficulty of data mixing, processing, and interpretation.

Time. It will take some time to complete the survey before every respondent is able to reply to the surveys. A total of six months will be given to complete the investigation. This is the reason that the use of a Google Form for survey administration will be taken into consideration. In addition, the researcher will consider the issue of availability, location, and distance of the participants.

Participant's Selection. Participants will be chosen randomly among English major college students. It also contained criteria for inclusion, exclusion and withdrawal. Random distribution of responses and participants within a quantitative framework, along with purposeful selection in the context of a qualitative approach, will be guaranteed. However, bias cannot be completely eliminated, particularly when purposeful and randomness are taken into account.

Resources. The entire study will be requiring enough sum of money. That will include costs for lodging, giveaways, tokens, and data analytics as well as professional costs for specialists will be funded. Additionally, the time required for this investigation will be crucial to finish the current study.

Trustworthiness of the study

Trustworthiness aims to establish the credibility, transferability, conformability, and dependability of the research findings (Lincoln & Guba, 1985). Thus, the framework for assessing truthfulness of the research is based on the four criteria of Lincoln and Guba (1985) which are credibility, transferability, dependability, and conformability.

Credibility. This element will guarantee the accuracy of the data. The results of the study will indicate that it will improve the veracity of witness statements. Shenton (2004) defined credibility as the use of appropriate, well-researched methods. As such, it serves as evidence for the reliability of the study's findings (Creswell and Miller, 2000). To assure the integrity of the research, this encourages the researcher to forward the guide questions to research professionals in academia and industry for additional confirmation. The researcher will hold a pleasant discussion with the study participants—in this case, the students—to obtain the necessary data. By integrating member checking, the researcher will guarantee that the results will accurate as interpreted by the participants' observations of the occurrence. This will ensure the validity of the information acquired because the participants could verify the responses they had written.

Confirmability. This will serve as researcher's neutrality when obtaining data from subjects. When preparing for the interview, the researcher will avoid talking about possible ethical dilemmas, information collection methods, and entry and exit procedures. The chosen participants' interview transcripts will be given to the researcher for examination by them. Maintaining the integrity and veracity of their assertions is another requirement of the audit trail.

Transferability. This raised the degree to which the surroundings and context will be exploited as a means of transferring or making the study effort relevant. Without a doubt, the researcher will comply with all standards during the study phase. To locate further sources, the researcher will also investigate papers that are relevant to the topic. Future scholars would see the study as a trustworthy source of information as a result, opening a new research avenue for them.

Dependability. Maintaining a process log audit trail is one of the techniques for dependability in this research study. Process logs are composed of notes produced by researcher regarding everything that will happen during the study, including choices about what to observe and who to interview. The researcher will verify the results using the unprocessed data that will be gathered and made sure that other researcher's reviewing the data would reach comparable conclusions, interpretations, and discoveries. The investigator will make sure that all pertinent data will be incorporated into the research study and will be verified the accuracy of the final statement.

Ethical Consideration

Getting the required clearances will be the first step in doing this research. Participants will receive a comprehensive briefing on the study's methodology during the interview. No prejudice will be allowed for the duration of the investigation. Since they are the source of pertinent information for this investigation, they will all be treated fairly. Furthermore, participants will be asked to grant permission for the Zoom or Google Meet applications to record audio and capture their answers. In order to preserve secrecy, the participants' identities will be hidden by using pennames. In order to guarantee that the respondents will be protected, this study will submit to the University of Immaculate Conception Research Ethics Committees (UIC-REC) for thorough board examination on the ethical aspects of the investigation. Strict adherence will be maintained to the values of beneficence, justice, and respect for human dignity. Thus, the ten dimensions of research ethics of this study will be specifically followed.

Social Value. This study is aimed to address the social problems pertaining to the language skills of the students especially those individuals who are taking the Teacher Education Program specifically the English major program in a state university or college in Region XI. With this study, it may hopefully address the challenges met by the English major students when they are being required by their teachers to write, speak, listen and read using an English language. Moreover, the results of the study could provide a basis for academic institutions to concentrate on creating a learning environment that encourages students to develop language skills and increasing their motivation so they can become effective and proficient in using the language. The researcher is confident that the findings and recommendations of the study will address the identified social issue. Furthermore, the researcher thought that society as a whole would benefit from the study's findings in addition to the individuals themselves. The study's conclusions will also be shared in forums across the region, the country, and potentially the world.

Further, enhancing language skills helps achieve the UN SDG #4 where to ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy. SDG #4 is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The study is crucial since achieving other SDGs and receiving a high-quality education depend on having language skills. It facilitates communication, improves cognitive functioning, and gives students the ability to access opportunities and information, all of which support social inclusion and equity. It will promote lifelong learning and global development goals by having a thorough understanding of the effects of cooperative learning in varied learning environments

Informed Consent. This paper seeks to investigate the concerning variables and concretely address problematic situations regarding language skills in cooperative learning. This study's purpose can be achieved by implementing curriculum development and initiative - using this study as a frame of reference. The respondents' willingness and participants are highly regarded for without it, the study's trustworthiness and ethical consideration are invalidated. In this study, informed consent will be secured from all participants involved in the study. Through the informed consent form, the researcher will present a detailed and comprehensive explanation of the study's purpose and the nature of the participants' participation, including the possible risks and benefits. It will be done to make it a point that the participants have a full understanding of the study and its implication. The researcher will make sure that the condition of the consent was void from coercion.

This is because the participants' willingness is taken into consideration. A provision about the participant's right to withdraw along the process was also presented in the informed consent form. Proper ethical protocols will be adhered to. This includes the observance of anonymity, volunteerism adherence through signatures, and the participants' appropriate treatment. In adhering to the data's privacy and confidentiality, the researcher will follow the recommended protocols of disposing of online data through irreversible deletion, and paper records are to be shredded accordingly.

The Vulnerability of the Research Participants. In this study, because the participants will be offering crucial and practical information, the researcher will make sure they are treated with the highest care. Additionally, no people or groups will be exposed to potentially hazardous situations. The researcher will

employ carefully crafted questionnaires that will free of any derogatory, discriminating, or inappropriate wording that would offend anyone. Moreover, this study does not include any vulnerable participants, like pregnant women, the elderly, or those with disabilities. Nonetheless, if a participant feels uncomfortable during the interview or while responding to the survey, they are free to discontinue at any moment.

Risks-Benefit and Safety. A careful and detailed benefit-risk assessment of the participants' foreseeable risks, burdens, and benefits will be performed. To minimize any possible risk, the researcher will make sure that the questionnaire is free of any derogatory, discriminatory, or insulting language before distributing it to the participants. Furthermore, the researcher will provide the participants with a complete disclosure of the nature of their involvement, the purpose and advantages of the study, and the confidentiality of the responses. Hence, as compensation for the time extended by the participants, they will receive appropriate incentives in exchange for their time through mobile phone load or internet cash (g-cash). The researcher will also make sure that the participants' possible advantages outweighed than the potential harm.

Furthermore, no personal information will be requested because the only purpose of this study is to gather academic data relevant to the investigation. The researcher will make sure that respondents have adequate time to finish the survey form in order to prevent irritation. Respondents may choose to withdraw from the study if they are unable to provide the needed information, or they may choose not to answer any questions that cause them psychological or emotional hardship. The researcher will value their participation in the study and prioritize their welfare at all times.

Privacy and Confidentiality of the Information. The privacy and confidentiality of the information gathered from the participants will be observed and protected. Participants in this study are not forced to disclose information out of his willingness. In answering to the survey questionnaire, writing their names may or may not appear in the survey form and that all the answers will be kept confidential by the researcher. Although the answers of the participants are tape recorded, both in the in-depth interview and focus group discussion, their responses will remain anonymous, are treated with confidentiality and no names will be mentioned in the report. This means that individual names are replaced with codes or pseudonyms to ensure the anonymity of the participants. All the copies of the data in the quantitative and qualitative phase (with codes only) are stored and protected. So as the researcher, it is the greatest obligation to secure the gathered data and make sure that it would solely be used for the purpose stated in this study. All these are done to avoid violating the anonymity and policy stipulated in the Data Privacy Act of 2012. Moreover, research assistants, documenters, transcribers, and data analysts will also follow the study's privacy and confidentiality policies. The researcher will exercise caution while asking questions and used fair and bias-free language. The participants will be informed that the recordings of the interview in qualitative strand and the data of the survey in the quantitative strand will be kept as pertinent data. Furthermore, researcher will protect the information against unauthorized access, dissemination, modification, lost, or stolen. Meanwhile, maintaining the ethical requirement of confidentiality is crucial to the trust connection between researcher and participant. The rights of the respondents are at danger if such concerns are not addressed. In addition, the researcher will keep his word to preserve privacy while choosing which statements to publish in the study. Respectfully, the reporting do not specifically disclose the age, status, or conditions of the participants, responses, or companies who will be a part of the study. Aliases will be used to represent given names during the data analysis process.

Community Involvement. In order to create interventions that will best help the students get ready for the future, the researcher wanted to let the authorities know about the existing situation of the students based on their cooperative learning, language skills, and learning environment. One of the objectives of the study is for the institution and other authorities to be able to provide a framework for helping students get ready for their future. Lastly, the researcher will make sure that the study was conducted in accordance with ethical guidelines.

RESULTS

This chapter deals with the presentation, analysis, and interpretation of findings. Specifically, this chapter reveals both quantitative and qualitative data relevant to address the research questions formulated in Chapter 1.

The Level of Learning Environment of English major College Students in Region XI

In Table 1, it is reflected that the overall mean of learning environment is 4.29 of is described as very high which means that the learning environment of English major college students is always manifested. In addition, its minimal standard deviation of .40 shows that the responses of the college students are clustered close to the mean.

Sharing and Comparing Knowledge. The category mean of this domain is 3.85 described as high. As shown in the table, the items in this category are ranging from 3.15 to 4.19. The item, As English major college students, their teacher is asking them to compare their assignment with those of an expert. has a mean of 3.15. Meanwhile, the item As English major college students, their teacher is encouraging them to discuss with fellow students how they study English subject reflects a mean rating of 4.19.

Relevance. The category mean of this domain is 4.01 described as high. As shown in the table, items in this category range from 3.59 to 4.22. The items, As English major college students, their teacher is asking them to do assignments that are linked to events from the news like radio, television, newspaper, or annual

Table 1 Level of Learning Environment, Language Skills, Cooperative Learning

Latent Variables/Observed Variables	Mean	SD	Description Level
Learning Environment	**4.29**	**.40**	**Very High**
Sharing and Comparing Knowledge			
Relevance	3.85	.66	High
	4.01	.60	High
Self-control and Self-reflection	4.16	.55	High
Epistemological Understanding	4.63	.47	Very High
	4.62	.40	Very High
Teaching for Understanding	4.52	.49	Very High
	4.25	.64	Very High
Support Learning for Understanding			
Problem Solving Strategies			
Language Skills	**4.12**	**.43**	**High**
Reading Skills	4.04	.49	High
	4.01	.52	High
Listening Skills	4.11	.48	High
Writing Skills	4.25	.47	Very High
Speaking Skills			
Cooperative Learning	**4.42**	**.42**	**Very High**

reports have mean rating of 3.59 while the item As English major college students, their teacher is giving them assignments from the book/hand-out that deal with examples from the professional world shows a mean of 4.22.

Self-control and Self-reflection. This domain has a category mean of 4.16 described as high with item mean ratings that range from 3.96 to 4.45. The item As English major college students, their teacher is teaching them to learn how to comment on fellow students' work reflects a mean of 3.96 while the item, As English major college students, their teacher is teaching them how to deal with feedback shows a mean of 4.45.

Epistemological Understanding. The category mean of this domain is 4.63 described as very high. As shown in the table, items in this category range from 4.54 to 4.75. The item, As English major college students, their teacher is teaching them that English subject relates to the content of other school subjects has mean rating of

4.54 while the item As English major college students, their teacher is teaching them that some terms may have more than one meaning shows a mean of 4.75.

Teaching for Understanding. This domain has a category mean of 4.62 described as very high with item mean ratings that range from 4.51 to 4.83. The item As English major college students, their teacher is teaching them the use of learning materials when carrying out an assignment reflects a mean of 4.51 while the item, As English major college students, their teacher is teaching them meeting deadline for their assignments shows a mean of 4.83.

Support Learning for Understanding. The category mean of this domain is 4.52 described as very high. As shown in the table, items in this category range from 4.42 to 4.59 The items, As English major college students, their teacher is encouraging them to draw on their existing knowledge when solving a problem has mean rating of 4.42 while the item As English major college students, their teacher is giving them a chance to recall what they already know about a certain topic shows a mean of 4.59.

Problem Solving Strategies. This domain has a category mean of 4.25 described as very high with item mean ratings that range from 4.14 to 4.41. The item As English major college students, their teacher is helping them to approach an assignment step by step reflects a mean of 4.14 while the item, As English major college students, their teacher is discussing to them how a problem can be approached shows a mean of 4.41.

The Level of Language Skills of English major College Students

It is shown in Table 1 that the level of language skills of English major college students has an overall mean rating of 4.12 which is described as high. It means that the language skills of English major college students are oftentimes evident. Considering the degrees of dispersion in this variable, standard deviation is .43 indicating that the responses are clustered near the mean.

Reading Skills. This domain reveals a category mean of 4.08 described as high. In particular, the mean ratings in this domain ranges from 3.69 to 4.36. It shows that the item,. As English major college students, they are using the library to obtain reading material has the mean rating of 3.66 while the item, As English major college students, they are using a dictionary to get the exact meaning as a mean of 3.72.

Writing Skills. It reveals that its category mean is 4.11 described as high with mean ratings of the items that range from 3.48 to 4.64. Consequently, the item As English major college students, they are writing on a diary in the target language has a mean of 3.48 while the item As English major college students, they are learning from the corrections given when their mistakes are corrected has a mean rating of 4.64.

Listening Skills. The category mean of this domain is 4.01 described as high. As shown in the table, the items in this category are ranging from 3.45 to 4.41. The item, As English major college students, they are attending out-of-classes events where they can listen to the new language being spoken. has a mean 3.45. Meanwhile, the item As English major college students, they are listening carefully to how native speakers pronounce the language when they are trying to learn the language has a mean of 4.41.

Speaking Skills. The category mean of this domain is 3.79 described as high. As shown in the table, all items in this category are ranging from 3.57 to 3.92. The item, wondering sometimes if their family will really be there for them when they are in need. has a mean of 3.57. Meanwhile, the item, being in a family who has been available to support them in the past shows a mean of 3.92.

The Level of Cooperative Learning of English major College Students

It is shown in Table 1 that in totality, the level of cooperative learning has an overall mean of 4.42 described as very high which means that cooperative learning of English major college students is always evident. Considering the degrees of dispersion in this variable, standard deviation is .42 indicating that the responses are relatively clustered around the mean. The items in this domain obtained mean ratings that range from 3.74 to 4. 69. Particularly, the item, When English major college students are in the group, they are finishing the

tasks with the groupmates' contributions has a mean of 3.74 while the item When English major college students are in the group, they are listening to each other's ideas, opinions, and point of views has a mean rating of 4.69.

The Significance of the Mediating Effect of Cooperative Learning on the Relationship of Learning Environment and Language Skills of English major College Students

To determine the mediating effect of cooperative learning on the relationship of learning environment and language skills of English, the correlation of variables was first examined, and results are presented in table 2.1. It shows that learning environment has a strong positive and significant relationship to language skills among of English major college students ($r = .69$, $p = .00$). It means that as the level of the learning environment increases the language skills of English major college students also increase.

Likewise, learning environment reveals a significant positive strong relationship with cooperative learning ($r = .66$) and a p-value of .00 which is less than the alpha set at .05 (two-tailed) level of significance. This result provides sufficient evidence that the relationship between learning environment and cooperative learning is significant. It means that as the level of learning environment of the English major college students increases, their level of cooperative learning also significantly increases. Similarly, cooperative learning and language skills shows a significant positive strong relationship ($r = .68$, $p < .05$). This means that as the level of the cooperative learning increases, the level of language skills also increases. Adding on, in order to assess the significance of cooperative learning as mediator between learning environment and language skills of English major college students, the mediating analysis was conducted using JASP applications. In Tabel 2.2, the direct effects, indirect effects, total effects, and path coefficients are presented.

Table 2 The Significance of the Relationship of Learning Environment, Cooperative Learning, and Language Skills

Relationships of Variables	r	p-value	Remarks
Learning Environment and Language Skills	.69	.00	Significant
Learning Environment and Cooperative Learning	.66	.00	Significant
Cooperative Learning and Language Skills	.68	.00	Significant

On the one hand, the direct effect of the independent variable, learning environment on the dependent variable, language skills without considering the mediator, cooperative learning is 1.102. It indicates that for each unit increase in the learning environment, language skills increase by 1.102 units directly. This means that there is a significant relationship between the learning environment and language skills, but still need to consider the mediation process to see if the relationship is explained by cooperative learning.

On the other hand, the indirect effect of learning environment on language skills through cooperative learning

is 0.647. As such, learning environment affects the mediator variable, cooperative learning which then affects the dependent variable, language skills. It means that part of the effect of learning environment on language skills happens through cooperative learning. This suggests that cooperative learning does play a role in explaining how the learning environment impacts language skills.

Table 3The Mediation Analysis of Cooperative Learning on the Relationship between Learning Environment and Language Skills for the Different Paths

Independent Variable (IV)	Learning Environment
Dependent Variable (DV)	Language Skills
Cooperative Learning (MV)	Cooperative Learning

	Standardized Beta (β)	Standard Error	p-value
Direct Effects (IV → DV)			
Learning Environment on Language Skills	1.102	.128	<.001
Indirect Effects (IV→ MV → DV)			
Learning Environment → Cooperative Learning → Language Skills	.647	.095	<.001
Total Effects (IV → MV)			
Learning Environment → Cooperative Learning	1.669	109	<.001
Path Coefficients			
Cooperative Learning → Language Skills		→	
Learning Environment → Language Skills			
Learning Environment → Cooperative Learning			
R-Squared			
Language Skills	.566.		
Cooperative Learning	.439		

Meanwhile, the total effect represents the combined effect of the learning environment on language skills, both directly and indirectly including the mediation via cooperative learning. This means that the total effect of learning environment on language skills is 1.749 units considering both direct and indirect pathways. Correspondingly, it is the overall influence of the independent variable, learning environment on the dependent variable, language skills which is larger than the direct effect because it includes the mediation pathway.

Moreover, The R-squared for language skills is 0.566 indicating that approximately 56.6 percent of the variance in language skills is explained by the model, which includes learning environment and cooperative learning as predictors. It suggests a moderate-to-strong explanatory power because the model explains over half of the variability in language skills. Accordingly, the R-squared for cooperative learning is 0.439 which means that 43.9 percent of the variance in cooperative learning is explained by the learning environment. This shows that the learning environment explains a good portion of the variability in cooperative learning.

Based on the mediation analysis results, cooperative learning partially mediates the relationship between learning environment and language skills, as shown by the indirect effect of 0.647. Partial mediation occurs because the direct effect (1.102) is still significant and positive, even though there is also an indirect effect (0.647) through the mediator, cooperative learning. Also, since the direct effect is still substantial and not zero, the mediation is considered partial rather than full. With this, the mediation model suggests that cooperative learning is an important pathway through which the learning environment influences language skills, making this a significant and interpretable model for understanding how the learning environment impacts language skills as portrayed in Figure 4.

Visually, Figure 4 shows that the path from learning environment to cooperative learning has a standardized coefficient of 1.7 (p > .05), meaning that for every one unit increase in the learning environment, correspondingly cooperative learning significantly increases by 1.7. The standard error of 0.16 is relatively small which suggests a highly significant path at the 95 percent confidence level. Adding on, the path from cooperative learning to language skills has a standardized coefficient of 0.36, which indicates that for each one

unit increase in cooperative learning, language skills correspondingly increase by 0.36. Notably, the standard error of 0.56 is quite large relative to the coefficient (0.36). Meanwhile, the direct path from learning environment to language skills has a standardized coefficient of 1.1, meaning that for every one unit increase in the learning environment,

language skills increase by 1.1. The standard error of 0.43 is relatively moderate, and significant ($p > .05$) at 95 percent confidence level. As such, this path is statistically significant, suggesting that learning environment has a meaningful direct impact on language skills.
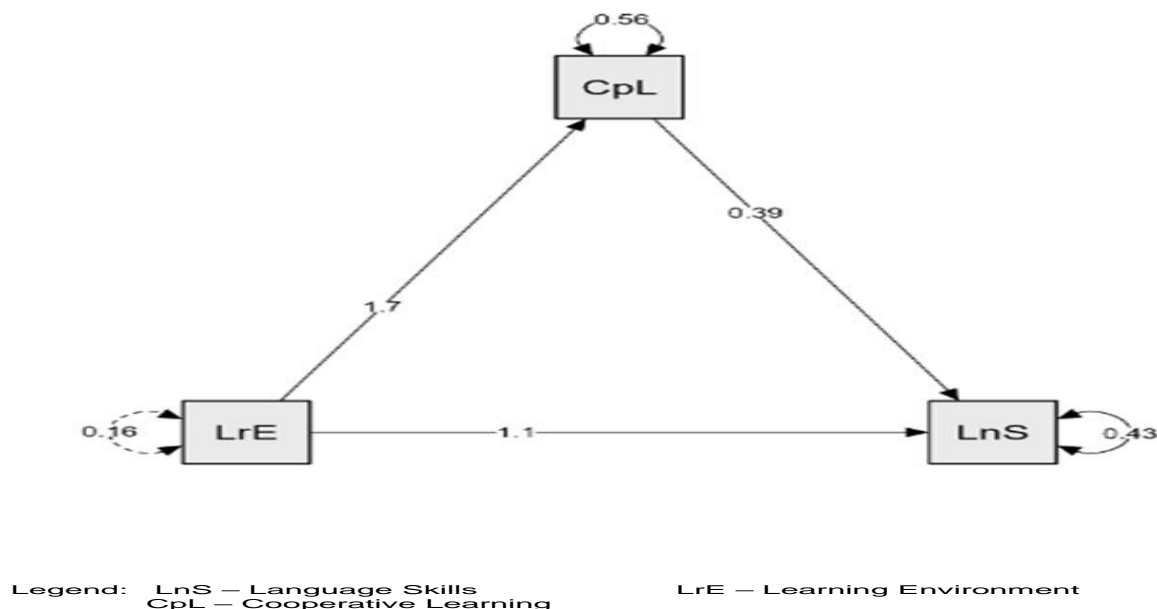

Legend: LnS – Language Skills   LrE – Learning Environment
         CpL – Cooperative Learning

Figure 4. The Path Plot of Cooperative Learning as a Mediating Variable on the Relationship between Learning Environment and Language Skills of English major College Students

Qualitative Result

Presented in Table 4 is the profile of the participants who were involved during the in-depth interview and focus group discussion. There were ten informants in the IDI and seven participants in the FGD. For the number of students per school, school A had five participants, school B had three participants, school C had three participants, school D had four participants, school E had two participants – a total of 17 participants. The participants were the English major college students from the five universities and colleges in Davao region. There were ten females students and seven male college students. In referring to the participants of this study, the informants were given codes. This is deemed necessary in upholding ethical standards.

Table 4 Profile of the Participants

Pseudonym	Gender	Year Level	School
IDI01	Female	First Year	School A
IDI02	Female	Second Year	School B
IDI03	Male	First Year	School A
IDI04	Male	Second Year	School B
IDI05	Female	First Year	School C
IDI06	Female	Third Year	School D
IDI07	Male	Third Year	School D

IDI08	Male	Third Year	School C
IDI09	Male	Third Year	School E
IDI10	Female	First Year	School A
FGD01	Male	Third Year	School A
FGD02	Female	Second	School C
FGD03	Male	Third Year	School A
FGD04	Female	Third Year	School E
FGD05	Female	Second Year	School D
FGD06	Female	First Year	School B
FGD07	Female	Second	School D

Standpoints of the Participants on the Quantitative Results Regarding the Level of the Independent, Dependent, and Mediating Variables of English major College Students

Table 5 shows the standpoints of the participants on the quantitative results regarding the level of learning environment, language skills, and cooperative learning. The essential themes generated are the confirmed very high rating of learning environment and cooperative learning and high rating of language skills.

Confirmed Very High Rating of Learning Environment. Most English major college students articulated in employing sharing and comparing knowledge during discussion. In addition, teachers try to relate the discussion to real-life situations. These two answers are the most frequently cited reasons during the interview. Hereunder are the shared narratives of the informants:

IDI-04 cited that their teachers are allowing in sharing and comparing knowledge during discussion. In his words, he said:

> During my experience this sharing compare knowledge I experienced when the teachers encourage us to share our insights whenever there's discussion or wants us too. (IDI-04-RQ1)

> In my experience, sharing knowledge became meaningful when our teachers encouraged us to express our insights during discussions.

Additionally, IDI-01 expressed their professors are trying to relate the discussion to real-life situations. She mentioned:

Table 5 Standpoints of the Participants on the Quantitative Results Regarding the Level of Independent, Mediating, and Dependent Variables

Level	Essential Theme	Typical Reasons for Column 2
Learning Environment (Independent Variable)	**Confirmed Very High Rating of Learning Environment (LrE)**	Sharing and comparing knowledge during the discussion
		Relating the discussion to relevant real-life situations
		Experiencing strategies that facilitate self-control and self-reflection
		Manifesting epistemological understanding with the interconnectedness of the subject

		Experiencing various teaching strategies that facilitate understanding
		Being provided with resources to support learning for understanding
		Encouraging analytical skills as a problem-solving strategy
Cooperative Learning (Mediating Variable)	**Confirmed Very High of Cooperative Learning (CpL)**	Believing that it is an effective approach to literacy
		Observing that it is a helpful approach
		Experiencing the approach as a platform for everyone to speak
		Experiencing impactful peer discussion and feedback through the approach
		Encountering the approach as a helpful guide to learn
Language Skills (Dependent Variable)	**Confirmed High Rating of Language Skills (LnS)**	Practicing as a means to improve speaking
		Listening as a means to grasp information clearly
		Expressing oneself clearly through writing
		Being proficient in reading, even with complex vocabulary
		Agreeing with the rating "high" to indicate further improvement
		Confirming that the rating "high" connotes continuous refinement

My teacher relates our topic in relevant real-life situations through those major subjects. It is very helpful subjects for my work someday. (IDI-01-RQ1)

My teacher connects our topics to real-life situations through major subjects, which I find very helpful for my future work.

Further, IDI-02 articulated that through experiencing strategies that facilitate self-control and self-reflection. She stated:

My teacher encourages me to control, monitor my progress, and reflect because in self-reflection, I can monitor my progress and also my strengths and weaknesses. (IDI-02-RQ1)

My teacher encourages me to take control, monitor my progress, and reflect, as self-reflection helps me identify both my strengths and areas for improvement.

Moreover, IDI-08 said that manifesting epistemological understanding with the interconnectedness of the subject. In his words, he said:

Understanding its fundamental rules helps us in future courses. These are interconnected, and having a strong foundation allows us to grasp English in a broader context. (IDI-08-RQ1)

Understanding the fundamental rules helps us in future courses, as these concepts are interconnected. A strong foundation enables us to grasp English in a broader and more meaningful context.

Thus, IDI-10 expressed that experiencing various teaching strategies that facilitate understanding. She said:

My teacher uses various techniques and strategies to enhance my knowledge and understanding. For example, they employ questioning and encourage students to share their insights. (IDI-10-RQ1)

My teacher uses various techniques and strategies to enhance our understanding, such as asking thought-provoking questions and encouraging us to share our insights.

Likewise, IDI-03 stated that being provided with resources to supporting learning for understanding. He stated:

My teacher helps me to support to understand more and to deepen my knowledge or in that certain language by providing resources. (IDI-03-RQ1)

My teacher supports my understanding and deepens my knowledge of the language by providing helpful resources.

Confirmed Very High Rating of Cooperative Learning. Most English major college students believe cooperative learning is a practical approach to literacy. Hence, I experienced impactful peer discussion and feedback by employing the approach. These two responses are the reasons most frequently cited during the interview. Hereunder are the shared narratives of the participants:

IDI-02 believed that it is an effective approach to literacy. She said:

It is effective in terms of discussing literacy, for instance, you're going to use the English language in that context. Storytelling that involves or involves them to collaborate, then the cooperative learning would be effective for that specific assessment. (IDI-02-RQ1)

It is effective in discussing literacy, particularly when using the English language in that context. Storytelling that encourages collaboration makes cooperative learning an effective approach for that specific assessment.

Further, IDI-05 articulated that through observing is also a helpful approach. In her words, she stated:

It is helpful because there are some students that they can't grasp immediately. So, we tend to ask them about it and we tend to interact. (IDI-05-RQ1)

It is helpful because some students may not grasp concepts immediately. As a result, we ask questions and interact to better understand the material.

Furthermore, IDI-01 reiterated that experiencing the approach as a platform for everyone to speak. She said:

I experienced it in one of my English teachers last semesters. The activity was quite beautiful. It is because, it allows individuals to speak. (IDI-01-RQ1)

I experienced this with one of my English teachers last semesters. The activity was quite meaningful because it allowed individuals to speak and share their thoughts.

Likewise, IDI-06 stated that experiencing impactful peer discussion and feedback through employing the approach. She articulated:

Cooperative learning becomes more impactful because it encourages peer discussions and feedback, enhancing the learning experience. (IDI-06-RQ1)

Cooperative learning becomes even more impactful as it encourages peer discussions and feedback, thereby enhancing the overall learning experience.

Finally, IDI-09 shared that encountering the approach as a helpful guide to learn. He stated:

It is conducive for everyone because it provides them resources and guidance as well as a ground for their own weaknesses and patch it together to form a very concrete kind of strength for the team. (IDI-09-RQ1)

It is conducive for everyone because it provides resources and guidance, helping individuals identify and address their weaknesses, ultimately building a strong and cohesive team.

Confirmed High Rating of Language Skills. Generally, English major college students considered that practicing as a means to improve speaking. Additionally, the participants also expressed that listening as a means to grasp information clearly.

IDI-08 explained that practicing as a means to improve speaking. He stated:

My speaking skills are at an intermediate level. I often watch like English movies, English series just to practice my speaking skills. (IDI-08-RQ1)

My speaking skills are at an intermediate level, and I often watch English movies and series to practice and improve them.

Moreover, IDI-02 expressed that listening as a means to grasp information clearly. She said:

I am actually an auditory learner. I really do love listening because it helps me grasp the information properly. I am proficient when it comes to listening. (IDI-02-RQ1)

As an auditory learner, I enjoy listening because it helps me grasp information more effectively. I am proficient in listening, which enhances my ability to understand and retain information.

Further, IDI-10 communicated that expressing one's self clearly through writing. She stated:

My writing skills are much better because I can clearly express my thoughts and put my ideas into words without the pressure of speaking. (IDI-10-RQ1)

My writing skills are stronger because I can express my thoughts clearly and articulate my ideas without the pressure of speaking.

Furthermore, IDI-04 expressed that being proficient in reading even with difficult vocabulary. He expressed:

It comes to reading, I'm very good at reading. There are some words that even though others would find it hard to understand but I could pretty much understand. (IDI-04-RQ1)

When it comes to reading, I am very skilled. There are some words that others may find difficult to understand, but I can usually grasp their meaning with ease.

Moreover, IDI-03 and IDI-04 asserted that agreeing with the rating high to indicate further improvement. They said:

I agree because there is a room for improvement in the context of language skills. (IDI-03-RQ1)

I agree, as there is always room for improvement when it comes to language skills.

I agree because we are still in the process of trying to improve whatever that we need to improve. (IDI-04-RQ1)

I agree, as we are still in the process of improving the areas that need development.

Finally, FGD confirmed the high rating connotes to continuous refinement. They elaborated:

We all agree because it requires continuous practice, exposure, and refinement. There are always areas for improvement, and consistent effort is needed to develop language skills. (FGD-RQ1)

We all agree that language skills require continuous practice, exposure, and refinement. There are always areas for improvement, and consistent effort is essential for development.

Standpoints of the Participants on the Mediating Effect of Cooperative Learning on the Relationship between Environment and Students' Language Skills

Table 6 reveals the standpoints of the English major college students on the mediating effect of cooperative learning on the relationship between learning

Table 6 Standpoints of the Participants on the Mediating Effect of Cooperative Learning on the Relationship between Learning Environment and Language Skills of Students

Level	Essential Theme	Typical Reasons for Column 2
Significant Relationship of Learning Environment (LrE) and Language Skills (LnS)	**Confirmed Significant Relationship of LrE to LnS**	Confirming the direct influence of the LrE on LnS
		Agreeing that LnS can improve through the LrE
		Confirming that the LrE has a positive impact on LnS
		Agreeing that the positive LrE can foster improvement of LnS
Significant Mediating Effect of Cooperative Learning (CpL) on the Relationship between Learning Environment (LrE) and Language Skills (LnS)	**Confirmed Mediating Effect of CpL on the Relationship between LrE and LnS**	Confirming that CpL improves LnS
		Agreeing that CpL facilitates the LnS of the students
		Confirming that CpL facilitates the practical application needed by the students
		Believing that CpL is vital in developing LnS
		Agreeing that without CpL, the influence of the LrE on the students' LnS will decrease

environment and students' language skills. Furthermore, it presents the following essential themes: confirmed significant relationship of learning environment and language skills and confirmed the mediating effect of cooperative learning on the between learning environment and language skills.

Confirmed Relationship of Learning Environment and Languages Skills. The English major college students confirmed the relationship between learning environment and students' language skills as an essential theme. Majority of the participants confirmed the direct influence of the learning environment on language skills. Moreover, informants agreed that language skills can improve through learning environment. The following are the shared narratives of the informants:

IDI-04 and IDI-10 confirmed the direct influence of the learning environment on students' language skills. They expressed:

I agree since the environment alone can still influence it. (IDI-04-RQ2)

I agree, as the environment itself can still have a significant influence on language skills

I agree because I need an environment in my learning. (IDI-10-RQ2)

I agree, as I need a conducive environment to support my learning.

Furthermore, IDI-03 agreed that language skills can improve through learning environment. He asserted:

I agree because we can still gain knowledge through our environment. (IDI-03-RQ2)

I agree, as we can continue to gain knowledge through our environment.

Moreover, IDI-08 explained that the positive learning environment can foster improvement of language skills. He stated:

I agree because positive learning environment creates opportunities for language skill improvement by fostering engagement and effective communication. (IDI-08-RQ2)

I agree, as a positive learning environment creates opportunities for improving language skills by fostering engagement and effective communication.

Confirmed Mediating Effect of Cooperative Learning on the Relationship between Learning Environment and Language Skills. The English major college students confirmed the mediating effect of cooperative learning on the relationship between learning environment and language skills. Most participants believe that cooperative learning facilitates the practical application the students need. Hence, English major college students asserted that without cooperative learning, the influence of the learning environment on the student's language skills would decrease. Below are the responses of the participants:

IDI-07 explained that cooperative learning facilitates the practical application needed by the students. He elaborated:

I agree because it enhances practical application. So since language is interactive, so without peer engagement, I think people might find, might understand the concept, but struggle with an actual communication. (IDI-07-RQ2)

I agree, as it enhances practical application. Since language is interactive, without peer engagement, people may understand the concept but struggle with actual communication.

Moreover, IDI-02, IDI-07, and IDI-10 expressed that without this strategy, the influence of the learning environment on the students' language skills will decrease. They stated:

I agree because without speaking or communicating with others, we cannot improve our language skills. (IDI-02-RQ2)

I agree, as without speaking or communicating with others, we cannot effectively improve our language skills.

I agree because though learning environment sets the stage, but if cooperative learning is excluded, student might focus more on passive learning, like memorization, rather than active practice. (IDI-07-RQ2)

I agree, as while the learning environment sets the stage, excluding cooperative learning might lead students to focus more on passive learning, such as memorization, rather than engaging in active practice.

I agree because it limits my language skill development because I participate less in activities. (IDI-10-RQ2)

I agree, as it limits my language skill development due to my reduced participation in activities.

Finally, IDI-05 stated that this approach facilitates the language skills of the students. She said:

I agree because it needs the influence of cooperative learning in the learning environment to achieve and increase the result of language skills. (IDI-05-RQ2)

I agree, as cooperative learning within the learning environment is essential to achieving and enhancing language skill development.

Data Integration of Quantitative and Qualitative Results

This study employed a mixed-methods design specifically utilizing an explanatory sequential approach. In Table 7, the joint display of the quantitative and the qualitative results is based on the data collated.

Level of Learning Environment. The quantitative findings reveal that the mean of the seven indicators ranges from 3.85 to 4.63 for the learning environment level. The results indicate that the learning environment of English major college students is always manifested. The qualitative data confirmed the quantitative data. The informants responded positively to the seven indicators: sharing and comparing knowledge, relevance, self-control and self-reflection, epistemological understanding, teaching for understanding, support learning for understanding, and problem-solving strategies. Therefore, the nature of integration is connecting-merging-confirmation.

Table 7 Joint Display of Quantitative and Qualitative Results

Research Area	Quantitative Results	Qualitative Results	Nature of Integration
1. Level of LrE, CpL, & LnS 1.1 Level of LrE	The descriptive level of LrE is 'very high' with an overall mean of 4.29, indicating that the variable is always manifested. (Refer to Table 1)	Informants/participants confirmed the very high level of LrE in the quantitative result. Based on the in-depth interviews and FGD, it could be concluded that the general assertions are all positive and thus confirmed the very high level of LrE. (Refer to Table 5)	Connecting, merging (confirmation)
1.2 Level of CpL	The descriptive level of CpL is 'very high' with an overall mean of 4.42, indicating that the approach is always evident in the experience of the students. (Refer to Table 1).	Informants/participants confirmed the very high CpL quantitative result. Based on the in-depth interviews and FGD, the general assertions are all positive, confirming the very high CpL level.	Connecting, merging (confirmation)

1.3 Level of LnS	The descriptive level of LnS is 'high' with an overall mean of 4.12. This indicates that the variable is oftentimes evident. (Refer to Table 1)	Informants/participants confirmed the high LnS quantitative result. Based on the in-depth interviews and FGD, the general assertions are all positive, confirming the high LnS level.	Connecting, merging (confirmation)
2. Mediating Model 2.1 Relationship Between LrE and LnS	A significant relationship ($p<0.05$) exists between LrE and LnS (r=.69) (Refer to Table 2.1 & Figure 4).	Informants/participants agreed with the importance of LrE to LnS. Thus, the significant relationship is confirmed.	Connecting, merging (confirmation)
2.2 Mediating Effect of CpL on the Relationship between LrE & LnS	A significant ($p<0.05$) partial mediating effect of CpL on the relationship between LrE & LnS ($\beta = 1.669$). (Refer to Computation in Table 2.2)	Informants/participants expressed positive assertions supporting CpL to LrE in influencing LnS. (Refer to Table 6)	Connecting, merging (confirmation)

Level of Language Skills. For students' language skills, it is revealed that the four indicators' mean ranges from 4.01 to 4.25 in the quantitative results. The results demonstrated that English major college students' language skills are often manifested. The informants showed positive responses to the four indicators: reading skills, listening skills, writing skills, and speaking skills. Hence, the nature of integration is connecting-merging-confirmation.

Level of Cooperative Learning. For the level of cooperative learning, the quantitative results reveal that the mediating variable's overall mean is 4.42. The results revealed that the students have a very high level of cooperative learning, which is always manifested. The qualitative data confirmed the quantitative data. Thus, the nature of the integration is connecting-merging-confirmation.

Relationship between Learning Environment and Students' Language Skills. The table shows the relationship between the independent variable, learning environment, and the dependent variable, language skills. It further demonstrated the significant relationship between the learning environment and language skills. The result is also confirmed by the data gathered in the qualitative phase of the study. It is revealed that the English major college students asserted their insights on the significance of the learning environment to the students' language skills. Thus, the nature of the integration is connecting-merging-confirmation.

On the Mediating Effect of the Cooperative Learning on the Relationship between Learning Environment and Students' Language Skills. For the mediating effect of cooperative learning on the relationship between learning environment and language skills, it is shown that there is a significant partial mediating effect. The qualitative data confirmed the quantitative data of the respondents. Hence, the nature of integration is connecting-merging-confirmation.

DISCUSSION

This chapter presents the analysis of the study findings for the quantitative and qualitative research results. The first part of the quantitative results expounds on the level of learning environment, language skills, and cooperative learning. The second part contains the qualitative results that discuss the survey's significant

results for the quantitative phase, specifically on the mediating effect of cooperative learning on the relationship between learning environment and language skills. The integration of both data generated from the study is further explained in the last section of the chapter, including implications for educational practices. Moreover, scholarly works and findings support the survey results to ensure an objective and robust data analysis.

Level of Learning Environment, Students' Language Skills, and Cooperative Learning

Learning Environment. The overall very high learning environment results from the English major college students' rating on the following indicators: sharing and comparing knowledge, relevance, self-control and self-reflection, epistemological understanding, teaching for understanding, support learning for understanding, and problem-solving strategies. The results underscore that the learning environment is always manifested. This is congruent with the idea of Schmid and Garrels (2021); having warm, supportive, and encouraging connections with students and their parents has been demonstrated to lead to outstanding results. In addition, Ogg and Anthony (2020), psychologically, positive connections between instructors, parents, and students inspire and motivate them to attain excellent academic standards. Thus, Sharabi and Cohen-Ynon (2022), a welcoming learning environment was seen as crucial.

In addition, the result connects with the study of Monteiro et al. (2021), whose findings revealed that the learning environment employed by teachers helps students to have a higher level of understanding and self-reflection. The study implies that a supportive learning environment has a significant relationship with the variables. Moreover, in the study of Niu et al. (2022), the learning environment is positively associated with students' creative thinking, including demonstrating problem-solving skills. This suggests that a learning environment can lead to many desirable educational outcomes among students. In addition, a learning environment can make students feel heard and valued, instilling confidence that enhances their overall learning experience and can cultivate trust and engagement between teacher and student (Khodadad, 2023). This agrees with the study findings of Ghany and Wahyudin (2021) that the learning environment can further encourage students to achieve more optimal learning outcomes.

Further, a learning environment impacts the students' academic resilience through appropriate guidance and encouragement to help students persist to succeed in their academics. (Thompson, 2021). Nurturing a supportive classroom environment can boost students' sense of belonging and motivation, increasing their academic resilience in the face of challenges (Kennebeck, 2019). Furthermore, the learning environment is reliable in predicting students' academic resiliency and success. Emphasizes how important it is to create a positive and supportive learning environment in the classroom where students are motivated and engaged (Sinha, 2024).

Language Skills. The English major college students' language skills acquired a high rating based on its overall mean. This skill was measured through the following indicators: listening skills, reading skills, writing skills, and speaking skills. The results demonstrated that English major college students' language skills are often manifested. The high rating of the language skills is parallel to the study Norcross, 2020, as cited by Borkala (2022); having high proficiency in one's language skill is significant, especially for college students – especially those who are English Majors in their transition towards being professional language skills are a sought-after tenet that employers look for with their employees - it decides if one can get a job or not.

For instance, the Programme for International Students Achievement (PISA) 2025 assessment will include a Foreign Language Assessment. While any language is a valid candidate to be learned as a foreign language, English provides several unique advantages. For instance, reading in English provides access to an incredible amount of knowledge: most websites with known content, including the popular online encyclopedia Wikipedia, are in English (Tarchi & Mason, 2022).

Hence, the rapid growth, change, and development of knowledge increase the need for education and learning and accelerated efforts to meet this need (Kumar, 2020 a; Ajmal & Kumar, 2020). Therefore, the skills and responsibilities expected from individuals in the information age have also evolved. Job postings published in recent years and human qualities sought, compatible with teamwork, analytical capable of thinking, technology

literate, human relations and communication skills strong, life-long learning skills, informatics, and communication. It seems that there is a need for well-qualified and educated individuals.

Cooperative Learning. Being the mediating variable of the study, cooperative learning has no indicators. The overall mean suggests that cooperative learning is very high, interpreting that cooperative learning is always manifested. The results of this study supported the idea of Turel and Serenko (2021), contending that enjoyment can lead to presumably desirable results such as increased participation. In addition, it has been seen that learners who interact and speak more usually achieve better progress in oral skills than those who always keep silent (Namaziandost, Hashemifardnia, & Shafiee, 2019).

It is also parallel to the study of Chen, 2021, which showed that using cooperative learning can help students improve their academic performance, and most students and teachers showed positive attitudes toward implementing cooperative learning. In addition, using cooperative learning in English classrooms has also been found to help students reduce anxiety and develop motivation and interest. Moreover, Silalahi, 2020, emphasized that cooperative learning in learning places more emphasis on cooperation between students in groups. This is based on the idea that students find it easier to understand a concept of facts if they discuss the problem with each other. In cooperative learning, students behave well because they are motivated to learn and actively engage in various activities.

Mediating Effect of Cooperative Learning on the Relationship between Learning Environment and the Students' Language Skills

One of the objectives of this inquiry is to determine the significant relationship of the mediating variable with the independent and dependent variables. The learning environment and the language skills of the English major college students were found to have a substantial and positive relationship. This correlates to the assertions of Uztosun (2020) that motivation in the classroom results in language skills. He states that teachers have a pivotal role in modifying the behavior and attitude of the students. It is also noted that the learning environment is a key factor that accelerates the students' performance (Hung, 2015; Langman & Fies, 2010; Saghafi et al., 2017). Despite having good teachers with competencies, they cannot perform due to the unavailability of the learning environment (Rudolph, 2016; Sam, 2016).

The study findings are similar to those of Shoaib and Ullah (2021). The study of Rajaee Pitehnoee, Arabmofrad, and Modaberi (2020) also has similar results regarding the physical classroom environment and English language learning among students. Additionally, Preciado et al. (2021) state that in terms of achieving positive outcomes in the classroom, the study findings align with Lan and de Oliveira's (2019) study findings regarding science classrooms and English language learning. Likewise, the classroom environment has also favorable effects on the students' learning English skills. The classroom environment, along with classroom management, also facilitates the students in the process of learning the language. Further, Anwar et al., 2021, asserted that the learning environment also positively affects the student's English skills. It is worth mentioning here that the classroom environment and classroom management also facilitate the students in learning the language.

As a mediating variable, researchers have recognized the benefits of cooperative learning in students' language skills. As mentioned by Rao, 2019, a supportive learning environment that fosters collaboration plays a vital role in enhancing language skills, particularly in learning the English language. Thus, cooperative learning within a positive learning environment significantly contributes to the effective development of language skills. Thus, Al-Tamimi & Attamimi (2014), conducted at Hadhramout University in Yemen, students' speaking abilities and attitudes significantly improved following the introduction of collaboration learning approaches where one measure of language proficiency is speaking ability.

The regression analysis was used to generate the necessary inputs to the red graph formulated by Jose (2003) to establish the interrelationships of the three variables. Through medgraph, the mediation model was generated. The model indicates that the learning environment influences language skills by including cooperative learning. If cooperative learning is removed, there is still a relationship, but it is not strong. Therefore, this is partial mediation since the mediating variable is only responsible for the relationship between

the independent and dependent variables. It becomes complete mediation when cooperative learning takes full responsibility; thus, the relationship between the learning environment and language skills disappears if we take cooperative learning. Because it is only partial mediation, it could not be claimed that cooperative learning is the only reason the learning environment can influence the learners' language skills. This indicates that cooperative learning is only one reason for how the learning environment can impact the students' language skills.

Standpoints of the Participants on the Quantitative Results Regarding the Level of Independent, Dependent, and Mediating Variables

This section provides a discussion of the standpoints of the participants on salient results of the quantitative study regarding the level of the three variables.

Digital Literacy. The participants confirmed the very high rating for the learning environment as obtained in the quantitative results of the study. This implies that the English major college students of Region 11 frequently manifested their sharing and comparing knowledge during the discussion; the students also frequently express relevance by relating the discussion to relevant real-life situations; self-control and self-reflection are frequently manifested through experiencing the strategy. Manifesting epistemological understanding with the connectedness of the subject, experiencing various teaching for understanding, being provided with resources to support learning for understanding, and encouraging analytical skills as a problem-solving strategy are interpreted as always manifested. With this affirmation, the participants have supported the claim of Ghany and Wahyudin (2021) that a learning environment can further encourage students to achieve more optimal learning outcomes.

Language Skills. The participants supported the high rating of language skills of English major college students in the quantitative results of the qualitative interview. The results indicated that the participants frequently practiced reading skills. Most participants have articulated that their reading skills are proficient even with complex vocabulary. They also expressed that their listening skills are oftentimes manifested. The students felt that listening was a means to grasp information. Thus, they also shared that practice as a means to improve speaking skills is oftentimes manifested. Moreover, most students exhibited that their speaking skills always manifested, indicating that their speaking skills connote continuous refinement and further improvement. Through these confirmations, it can be stated that the results run parallel to the perspective presented by Lee, 2020, that it is noteworthy that the skill of reading, writing, listening, and speaking needs to be enhanced to improve the students' engagement in the overall learning process.

Cooperative Learning. The informants acknowledged the very high rating of cooperative learning in the quantitative results based on the in-depth interviews and focus group discussion. They highlighted the idea that cooperative learning acquired a very high rating. They believed that it was a practical approach to literacy. Most English major college students favor cooperative learning to improve their language skills. The recognition of the importance of cooperative learning aligns with the idea presented by research has shown that cooperative learning can effectively be used as a conduit to address these skills in higher education environments (Chi & Wylie, 2014; Dendup & Onthanee, 2020; Liebech-Lien, 2020). When cooperative learning is well implemented, it inspires students to learn cooperatively together, creating opportunities for students to develop new understandings rather than just absorbing the content provided by the instructor (Sumtsova et al., 2018).

Keramati and Gillies (2022) revealed that cooperative learning not only creates a secure environment but also enhances the deep learning and motivational process, increases instructor support, and provides equal opportunities for student involvement in the patient education classroom. Researchers have also shown that cooperative learning can meet the needs of students in the twenty-first century (e.g., Dendup & Onthanee, 2020; Liebech-Lien, 2020). Participants believed that the synergy and feelings of connectedness from teamwork in the classroom allowed them to look at subjects from different angles and reach mutual understanding and trust in a non-competitive environment. Previous research also supported this belief (e.g., Dendup & Onthanee, 2020; Emmer & Evertson, 2013; Virtanen & Tynjälä, 2019).

Standpoints of the Participants on the Mediating Effect of Cooperative Learning on the Relationship between Learning Environment and Language Skills

As part of the study, the participants shared their perspectives on the influence of the learning environment on language skills in the mediation model. Their views were analyzed and revealed into two essential themes: confirmed the significant relationship between learning environment and language skills and confirmed the mediating effect of cooperative learning on the relationship between learning environment and language skills.

Confirmed Significant Relationship of Learning Environment and Language Skills. During the in-depth interview and focus group discussion, the participants confirmed the quantitative results. This underscores that the English major college students agreed on the influence of the learning environment on their language skills. This notion is accurate, as a positive learning environment can improve language skills. These confirmations have supported the insights of Sukasih, 2022, who found that teacher performance and the quality of the classroom learning environment influenced students' language skills. Hence, the learning environment significantly impacts language skills. Positive, engaging, and stimulating classrooms foster language learners' skills, confidence, and positive attitudes.

Additionally, in a positive learning environment, Meng (2023) found that three cognitive factors significantly impact students' second language education in English. These factors include language transfer, redundancy, and brief switching in speech, which suggests that teachers should promote a positive outlook. Hence, Hasanah (2021) and Malazonia et al. (2021) state that the educational environment and language use are interconnected. A positive educational environment strengthens learning and improves students' intelligence, ability, and perspectives. On the other hand, studies by Sonam et al. (2023) and Naibaho (2022) show that a hostile environment and teaching methods can cause anxiety and nervousness among students learning English as a second language.

Confirmed Mediating Effect of Cooperative Learning on the Relationship between Learning Environment and Language Skills. During the interview, the English major college students confirmed the mediating effect of cooperative learning on the relationship between learning environment and language skills. The informants confirmed that cooperative learning facilitates the practical application the students need. Moreover, students believed that this approach is vital in developing language skills. These affirmations adhere to Llanto and Oliva, 2025 asserted that cooperative learning has a significant effect as a partial mediator in the relationship between the learning environment and language skills.

Further, Zheng and Zhou's (2022) longitudinal study showed that university students learning English as a Foreign Language experienced improved language skills due to cooperative learning. Additionally, their study underscored the importance of collaboration in enhancing student's learning experiences and overall satisfaction in learning foreign languages. This finding aligns with Amerstorfer and Freiin von Münster-Kistner's (2021) study, which indicated academic engagement through active participation in learning activities, such as problem-based learning (PBL) and strong student-teacher. Consequently, Mendo-Lázaro et al. (2022) found that students engaged in cooperative learning were more motivated and set more ambitious academic goals. This approach not only strengthened their engagement but also enhanced the development of critical interpersonal skills. Furthermore, Keramati and Gillies (2021) emphasized the gains from cooperative learning, including creating interactive and supportive learning environments, promoting social interactions, and deepening meaningful learning.

Data Integration of Quantitative and Qualitative Results

The most salient point in the mixed methods results is the nature of integration, reflected in the joint display of quantitative and qualitative results in Chapter 3.

Data integration generally merges in the explanatory sequential mixed methods since the two databases are combined for analysis. Fetters, Curry, and Creswell (2013) stated four approaches to integration: connecting, building, merging, and embedding. The term connecting is commonly used for explanatory sequential design. The building is used in the exploratory sequential design. Merging, on the other hand, is frequently utilized in

concurrent designs. Embedding is used for the embedded design. Within the context of explanatory sequential design, the approach combines the fit data integration: confirmation, expansion, and discordance. Confirmation refers to the findings from both types of data confirming the results of the other. Expansion means that the findings from two data sources diverge and expand insights. Lastly, discordance refers to having inconsistent results, contradicting, and disagreeing with each other. It could be noted in the join display that all quantitative results, except for one expansion item, are confirmed by the qualitative results.

The overall very high rating of the learning environment in the quantitative results is confirmed in the qualitative results through interviews and focus group discussions. Thus, the nature of integration is connecting-merging-confirmation. The positive confirmation shows that the learning environment of the English major college students is always manifested. Based on the results, a positive classroom environment is vital to the overall student experience. Additionally, it can lead to higher levels of motivation and learning. The high mean for a positive classroom environment is supported by studies suggesting that modern, comfortable, and well-equipped classrooms enhance the quality of student experiences and reduce discussion boredom (Closs et al., 2021). Moreover, embracing linguistic diversity, valuing students' home languages, and employing creative learning methods create an enjoyable and inclusive environment, fostering better understanding, vocabulary retention, and cultural awareness (Al Farabi et al.,2024).

The overall high rating of the student's language skills in the quantitative results is confirmed in the qualitative results through in-depth interviews and focused group discussions. Hence, the nature of integration is connecting-merging-confirmation. The positive confirmation revealed that English major college students' language skills are often manifested. These statements adhere to the perspectives presented by Astuti's (2021) study, which showed that students' language skills affect their motivation and willingness to study and use the language in class and official communication. Similarly, in today's globalized world, people must speak languages beyond English to work and communicate with individuals from other countries (Rosiak, 2022).

The qualitative in-depth interview and focused group discussion confirmed the overall very high rating of cooperative learning in the quantitative results. Thus, the nature of integration is connecting-merging-confirmation. The positive confirmation showed that cooperative learning of English major college students always manifests. The very high rating and positive confirmation are supported by the notion that cooperative learning is a platform for everyone to speak. Based on the results, the high mean scores across all items indicate the positive impact of cooperative learning on students' teaching and learning skills. The findings support studies highlighting the benefits of cooperative learning, such as fostering a supportive learning environment and enhancing classroom dynamics by promoting positive social interaction and reducing students' sense of isolation (Hornby & Greaves, 2022).

The students articulated their confirmation of the relationship between learning environment and language skills and confirmed a significant relationship. Thus, the integration is connecting-merging-confirmation. This finding supports the perspective of Hasanah (2021) and Malazonia et al. (2021) state that the educational environment and language use are interconnected. A positive educational environment strengthens learning and improves students' intelligence, ability, and perspectives. On the other hand, studies by Sonam et al. (2023) and Naibaho (2022) show that a hostile environment and teaching methods can cause anxiety and nervousness among students learning English as a second language.

The partial mediating effect of cooperative learning on the relationship between learning environment and students' language skills. Most English major college students expressed their positive confirmation of the significant partial mediating effect of cooperative learning on the learning environment and language skills. Thus, the nature of integration is connecting-merging-confirmation. The results are congruent with the inquiry of Mendo-Lázaro et al. (2022), who discovered that students who participated in cooperative learning had higher levels of motivation and more ambitious academic goals. This method improved the development of important interpersonal skills and increased their level of involvement. Additionally, Keramati and Gillies (2021) highlighted the benefits of cooperative learning, which include fostering social relationships, developing meaningful learning, and establishing interactive and encouraging learning settings.

The study's results support the theory and propositions cited in the theoretical lens: the Interactionist Theory by Mead (1930) affirmed the relationship between learning environment and language skills. Support learning helps students to make the language function properly in society. Likewise, the results also adhered to the Zone Proximal Development by Vygotsky (1987). It affirmed that learning (language) occurs best when people work together, and learners learn new concepts, psychological tools, and skills through these cooperative activities. In addition, the findings supported the Hypothesis Input by Krashen (1995) because it stated that exposure to a language is how people acquire it. Language learning through socialization requires more than just meaningful and grammatically correct interactions in a community setting. Therefore, students attempting to connect with their classmates while learning the language may acquire it more effectively.

Implication for Educational Practice

The results and findings of the inquiry bring forth an expressway for students, parents, teachers, school administrators, educational institutions, curriculum developers, research scholars, and other stakeholders to discover the impact of cooperative learning on the relationship between the learning environment and students' language skills.

Furthermore, the findings of this study may serve as a valuable resource for English major college students in navigating their language skills within a supportive learning environment, enhancing both their engagement and progress in language acquisition. In addition, this study will guide learners in recognizing their strengths and areas for improvement while fostering the essential language skills needed to communicate effectively and perform academically.

Moreover, this study's results confirm the learning environment's significant role in shaping students' language skills, highlighting its impact on their confidence, motivation, and overall communicative competence. This study reinforces the need for a supportive and engaging learning atmosphere that nurtures language skills development, serving as a practical guide for educators and learners in maximizing opportunities for effective language use and growth.

Furthermore, the results of this study confirm the mediating effect of cooperative learning on the relationship between the learning environment and students' language skills. This finding highlights how collaborative tasks, peer interactions, and other group activities within a supportive environment significantly enhance learners' engagement. Thus, designing cooperative learning experiences that help influence the learning environment to language skills.

CONCLUSION AND RECOMMENDATIONS

This chapter outlines the conclusion drawn from the findings and the recommendations made regarding the study.

Conclusion

Based on a thorough analysis of the results and findings of the study, this section presents the conclusion. During the quantitative phase, the learning environment of the respondents demonstrated a very high rating. It underscores that the learning environment is always manifested. The learning environment got a very high rating because English major college students knew they had a whole idea of epistemological understanding. The students learned how English subject relates to the other school subjects.

Additionally, the high level of students' language skills indicated that the dependent variable is oftentimes evident. Language skills obtained a high mean score because the respondents are aware of how important it is to have the ability to speak, listen, write, and read in the English language. It indicated that when the participants are corrected while speaking, they try to remember the correction and avoid repeating the same mistake. Meanwhile, the very high rating of cooperative learning exhibited that English major college students are always manifested. It articulated that the mediating variable can strengthen the relationship between the learning environment and language skills. This statement is true as the students think their knowledge

acquisition through cooperating learning helps improve their language. In addition, the study's findings also confirmed a significant relationship between learning environment and language skills. This demonstrates that any increase in the students' learning environment results in a corresponding increase in the positive attitude toward language skills.

The study's findings indicate that cooperative learning plays a significant yet partially mediating role in the relationship between the learning environment and students' language skills. Since the mediation is only partial, it cannot be concluded that cooperative learning is the sole factor through which the learning environment affects language skills. However, this suggests that cooperative learning is just one of the factors through which the learning environment can influence students ' language skills.

The quantitative findings of the respondents were further substantiated and expounded by the significant themes that emerged during the thematic analysis of the qualitative data. These themes were generally confirmed and verified by the quantitative results of the study. The alignment of quantitative results with qualitative findings during the integration process provided solid evidence supporting the key themes identified in both phases. The results offered a deeper insight into students' language skills by highlighting key emerging themes. These identified themes have significantly contributed to strengthening the description of the variables examined in the study. The themes not only elaborated on the level of each variable but, more importantly, provided strong support for the mediating effect of cooperative learning on the relationship between learning environment and language skills.

Recommendations

Based on the findings of the study, the researcher proposes the following recommendations:

Looking at the indicators of the learning environment, the one with the lowest mean score is "sharing and comparing knowledge." In this study, this indicator refers to allowing students to share and compare their ideas with their classmates. With this result, the researcher suggests that school administrators and teachers use this inquiry as a reference for curriculum development, particularly in sharing and comparing the students' outputs without compromising the originality of their works. They may employ activities where everyone can share their thoughts in a supportive learning environment—allowing students to make mistakes by sharing their ideas and guiding them with the appropriate corrective approach.

Further, among the indicators under language skills, the lowest mean score is the "listening skills." In this study, this skill refers to actively receiving, processing, and understanding English-spoken information. With this result, the researcher recommends that the school administrator, curriculum developers, and teachers look into this study as a reference for curriculum improvements, especially in language skills. They may craft activities that significantly improve the student's listening skills. Expose them to diverse audio materials like listening to English podcasts, audiobooks, TED talks, news broadcasts, and academic lectures to familiarize them with the different accents, speech patterns, and vocabulary. This will help English major college students improve their listening skills, particularly in English.

Furthermore, the result under cooperative learning, the item with the lowest mean score, is "being able to finish the tasks with the groupmates' contributions." With this result, the researcher suggests that the teachers, as curriculum implementers, may consider this inquiry to reinforce the motivation during instruction. The teacher may closely monitor group activities to ensure effective participation and progress. This allows them to facilitate discussions and assess each student's contributions. Regular supervision helps maintain collaboration and keeps the activity on track. Group activities are also recommended to encourage open expression by minimizing strict rules. Allowing students the freedom to share their ideas. A supportive learning environment promotes meaningful discussions and deeper engagement in the learning process.

Finally, the mediation analysis demonstrated a partial mediation, which denotes that other factors can affect learning environments toward language skills. The researcher recommends conducting further studies on the same issues based on these results. However, future research may explore additional variables to gain deeper

insights. Researchers may also consider using different approaches, such as exploratory, embedded, or convergent methods.

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