

# The Impact of School Culture on Critical Thinking Skills Among Elementary Education Students: A Mixed Methods Study

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## Abstract

The purpose of this study was to identify the significant relationships between school culture and critical thinking skills among Elementary education students in a local college. Also, this aimed to explore the lived experiences, and insight of the students related to school culture and their critical thinking skills. This study used mixed method design, utilizing parallel convergent approach. The participants of the study were the elementary education students from all year levels. For the quantitative part, it involved 164 students from all year levels and for the qualitative part, it involved 14 participants. Result revealed that the level of school culture and critical thinking skills is high. Moreover, the result implied that there is a significant relationship between the two variables which are the school culture and critical thinking skills. Meanwhile, results revealed different experiences relative to school culture and their critical thinking skills including fostering a supportive and inclusive learning environment, emphasizing inquiry and problem-solving in learning, balancing academic expectations with support, and enhancing critical thinking through extracurricular engagement. Additionally, students provided insights on the influence of school culture in shaping critical thinking, encouraging the expression of ideas, promoting engagement in discussions and reflection, and developing independent thinking and problem-solving skills. Similarly, mixed method analysis and data corroboration found that both quantitative and qualitative data are merging. The results showed that a strong school culture can influence the development of the critical thinking skills of Elementary education students that prepares them for a lifelong learning.

**Keywords:** school culture, critical thinking skills, mixed methods, elementary education, Philippines

## 1. INTRODUCTION

Critical Thinking Skills is the power to reason and analyze data and to make good decisions and objectively reflect. All of these skills are crucial for evaluating information and coming up with decisions and even solving problems in a number of fields. The perceived learner environment, which encompass a good organization, choice, interest, and quality instruction is anticipated to facilitate the thinking through analysis, evaluation, and integration about complex matters. However, absence of such activities, and insufficient instructions may hinder development of these higher brain processes meaning that thinking and problem-solving capacity is somewhat limited. Therefore, there is need to educate the students on decision-making using critical thinking skills so that they can make good decisions (Patterson, 2020).

Globally, particularly in Africa—critical thinking skills are still a major issue both in schools and in the workplace, with large numbers of students finishing their education without being able to solve problems that require critical thinking. Specifically, universities and other institutions of learning throughout the

African continent, and more so in Nigeria, have focused more on admission requirements, examination procedures, and degree certification standards, frequently overlooking the most important policies required to ensure quality education that aids in the growth of the critical thinking capacities of the students (Igwe et al., 2019).

In the Philippines, particularly in Alfredo Parilla National High School in Leyte, most students who study social science subjects will not do written activities and tasks that require critical thinking. This is not only found in social science—other subject teachers have also witnessed the same phenomenon. They found that when exams have questions requiring students to think critically or solve problems, most students will leave those sections blank. Accordingly, the students attain lower grades in both social science and other core subjects (Pilande, 2023).

The existing literature reveals that there are several studies in knowledge concerning the way, critical thinking skills evolve in school culture. For instance, the study of Barker et al. (2023) entitled, *“The Importance of School Culture in Supporting Students Mental Health in Secondary Schools”*, explored on how aspects of school culture impact on students’ mental health but few sources investigate how school culture have an impact on the critical thinking skills acquisition. Also, in the study of Bayar et al. (2021) entitled, *“The Effect of School Culture on Student’s Academic Achievement”*, highlighted the significant influenced of school culture on students’ academic and social development but fail to provide explanation of how school culture affects critical thinking. Likewise, the study of Ismail et al. (2022) entitled, *“Impact of School Culture on School Effectiveness in Government Schools in Maldives”*, examined the significant influence of school culture on school effectiveness but fails to consider the roles and relationships of such processes in critical thinking skills of the students. To the same effect, this study fills these gaps by assessing the impact of school culture on critical thinking, while giving a broad view of the two factors in a local perspective.

### 1.1 Research Objectives

The goal of this convergent parallel mixed methods study was to better understand the relationship between school culture and critical thinking skills among Bachelor of Elementary Education - Generalist (BEED) students at Kapalong College of Agriculture, Sciences, and Technology (KCAST). The study aimed to respond to the following research questions:

1. What is the level of school culture and critical thinking skills among Elementary education students?
2. Is there a significant relationship between school culture and critical thinking skills among Elementary education students?
3. What are the lived experiences of Elementary education students with regards to school culture and critical thinking skills?
4. What are the insights of Elementary education students with regards to the effectiveness of school culture in developing critical thinking skills?
5. How do qualitative results explain the quantitative results of the study?

## 2. LITERATURE REVIEW

### 2.1. School Culture

School culture is defined as the shared beliefs, values, meanings, and assumptions within a school community. School culture and school climate are concepts that vary in definitions and are often interchanged; however, culture specifically focuses on the character, traditions, values, and norms that define the identity of the school. This will depend upon the actions, interactions, and culture of all those present at

the school, creating a distinctive environment that typically echoes the actual beliefs and values of the organization (Wang et al., 2020).

In addition, positive school climate has been associated with healthier and successful risk prevention and promotion of children's and adolescents' development. There is consistent evidence that exists which indicates that a positive school culture could significantly influence the mental health of students. Two reviews have discovered that students feel healthier and their mental health improves when they perceive good relationships in school and a sense of safety (Jessiman et al., 2022).

Furthermore, previous studies on school culture indicated that school administrators adopt various roles based on the nature of the culture in their respective schools. Current studies indicate that principals have a critical role in developing effective, professional school cultures and facilitating positive reform. Competent principals have the capability to transform a negative school culture into a positive one. Research that contrasts principals who embrace professional cultures with principals who do not supports the conclusion that achievement-focused leaders who exhibit transformational leadership, a balance of tasks and relationships, and efficient time management are more likely to foster professionalism and learning. Other scholars emphasize that shared leadership is essential in defining school culture. In a three high school study of U.S. schools, professional learning communities were identified as a type of shared leadership. Teacher leaders and teaching teams likewise are involved in facilitating this type of leadership (Nehez, 2022).

## 2.2 Critical Thinking Skills

In the current education system, critical thinking is given priority. Educating students to acquire critical thinking skills enables them to achieve competency standards in the curriculum and equip them to tackle a future characterized by challenges, competition, and uncertainty. A critical thinking school environment relies significantly on the way teachers educate, extending beyond memorization. One of the core concepts of the critical thinking movement is assisting students in the development of thinking skills—being able to make wise choices during trying times. This process prioritizes "knowing how" over merely "knowing what." To create these abilities, both students and teachers have to become self-aware. Teachers will need to employ teaching practices that encourage critical thinking, and students will need to participate and seek out these modes of thinking (Puspita et al., 2019).

Additionally, in order to enhance students' critical thinking capacities, teachers should adopt instructional methods that engage students to be more active in the classroom. Such methods must support students in developing their thinking through problem-solving as well as analysis. Researchers have asserted that successful learning for developing critical thinking is about teaching important ideas clearly, employing active teaching approaches, and assisting students to make rational choices in challenging dilemmas (Fajari et al., 2020).

In addition, critical thinking is the most vital skill in scientific research. It is now a primary objective in education systems across the globe due to the fact that it aids in constructing new knowledge. With critical thinking abilities that are strong, students are in a better position to tackle challenges and transformations in fields such as the economy, society, the environment, health, swift progress in science and technology, and global matters such as terrorism and wars. Indeed, critical thinking has come to be regarded almost universally as an essential 21st-century skill, particularly due to its significant influence on scientific studies (Vázquez-Villegas et al., 2023).

## 2.3 Theoretical Framework

This study was gleaned through the theory of Vygotsky (1968) which is the Social Constructivism, it is a learning theory that bases its approach on social interaction and cultural context as ways of approaching the development of knowledge. Using the work of Vygotsky, it shows that knowledge is not a product of individual construction but a joint construct. Some of the salient concepts include the concept of the Zone of

Proximal Development (ZPD), the zone where learners can better understand through the assistance provided by more knowledgeable peers or adults. With the knowledge now being a product of the social process, dialogue, negotiation, and shared experience become important. Learning becomes active instead of information received passively feeding from the context of action into an understanding of it.

In addition, the study aligns with the theory Bloom's Taxonomy by Benjamin Bloom (1956) and modified later. It classifies cognitive skills into six steps which is Remember, Understand, Apply, Analyze, Evaluate, and Create. Bloom's Taxonomy is used as a framework for instructional design in the educational sector because it has helped educators focus on promoting higher-order thinking skills within students through structured learning objectives and activities.

### **3. METHODOLOGY**

#### *3.1. Research Design*

The study employed a convergent parallel design, which was a unique sort of mixed-method research in which quantitative and qualitative data was collected concurrently but processed separately. This methodological approach enables the comparison of results from both data sources, resulting in deeper insights and a more nuanced knowledge of the research topics at hand (Plano Clark & Creswell, 2015).

In addition, a descriptive-correlational type of research was employed in this study to examine the relationships among school culture and critical thinking skills. This design assessed how school culture affects critical thinking skills of the students. A descriptive-correlational design focused on describing the relationships between two or more variables by quantifying both their magnitude and direction using empirical data. This approach involved creating a dataset where each participant provides scores for the variables of interest, allowing for the exploration of associations without implying causation. By using this design, the study aimed to make predictions and descriptions based on the collected data and subsequent analysis, providing valuable insights into how school culture influenced the critical thinking skills (Bhat, 2018).

In the context, the descriptive-correlational design was considered because this study aimed to explore and quantify the relationships among school culture and critical thinking skills manipulating the variables. By using this design, the study effectively analyzed how school culture correlated with critical thinking skills in this relationship. This approach allowed for a detailed examination of the existing connections between these variables and provided insights into how school culture influenced critical thinking skills. Given that this research focused on understanding and describing these relationships rather than establishing causation, the descriptive-correlational design was well-suited to provide a comprehensive analysis based on the collected data from the elementary education students at Kapalong College of Agriculture, Sciences, and Technology.

Furthermore, phenomenological research techniques were utilized to investigate how people see and understand school culture within the framework of the development of their critical thinking skills. By attempting to capture the substance of these events from the participants' points of view, this qualitative method seeks to reveal important details that quantitative data alone could miss (Moustakas, 1994).

#### *3.2. Participants of the Study.*

The participants were those who could provide the best information to answer the research questions and help understand the topic being studied (Kuper et al., 2008). In this study, the main participants were BEED students from Kapalong College of Agriculture, Sciences and Technology in Kapalong, Davao del Norte.

In the quantitative phase, one hundred sixty-four (164) BEED students participated in the study. They provided first-hand information as evidence to explore school culture and critical thinking skills. The students answered a set of questions in a survey related to these topics.

Table 1.1 Distribution of Respondents

| Year Level   | Population | Sample     | Percentage    |
|--------------|------------|------------|---------------|
| First Year   | 34         | 20         | 6.91%         |
| Second Year  | 118        | 68         | 23.99%        |
| Third Year   | 90         | 52         | 18.30%        |
| Fourth Year  | 42         | 24         | 8.54%         |
| <b>TOTAL</b> | <b>284</b> | <b>164</b> | <b>57.75%</b> |

In qualitative research, Participants in the qualitative phase were selected using a purposive sampling strategy. This non-probability technique was utilized to identify individuals who could provide the most useful insights into the research issues (Kuper et al., 2008). Participants in this study on explore school culture and critical thinking skills among elementary education students at Kapalong College of Agriculture, Sciences, and Technology was chosen using the following inclusion criteria: (a) enrollment in the BEED Generalist program during the first and second semesters of the 2024-2025 academic year; and (b) willingness to participate in the study. This study would not include students who are not currently enrolled in the elementary education program. Furthermore, participants in the qualitative analysis interviews are not eligible to participate in the quantitative analysis survey. A total of 14 BEED students were selected: seven participated in in-depth interviews, while the remaining seven participated in focus group discussions, all participants are enrolled at KCAST.

Table 1.2 Profiles of the Participants

| Participants No. | Sex    | Year Level  |
|------------------|--------|-------------|
| IDI01            | Female | Second Year |
| IDI02            | Female | Second Year |
| IDI03            | Female | Third Year  |
| IDI04            | Male   | Third Year  |
| IDI05            | Female | Third Year  |
| IDI06            | Female | First Year  |
| IDI07            | Female | Third Year  |
| FGD01            | Female | Third Year  |
| FGD02            | Female | Third Year  |
| FGD03            | Female | Third Year  |
| FGD04            | Female | First Year  |
| FGD05            | Female | Second Year |
| FGD06            | Male   | Third Year  |
| FGD07            | Female | Third Year  |

### 3.3. Instrumentation and Data Gathering Process.

In the quantitative phase of the study, an adopted questionnaire from Miller (2018) was utilized to evaluate the level of school culture of elementary education students and an adopted questionnaire from Kobylarek et al. (2022) was utilized to evaluate the level of their critical thinking skills. These questionnaires were distributed to elementary education students in a face-to-face mode of survey. To gain access to the respondents' data with regard to their school culture and critical thinking skills, compliance with institutional protocols were considered. The researcher submitted a formal letter of authorization to the College President's Office, seeking permission to conduct the study in their institution. The collected data was systematically tallied, computed and analyzed to provide a quantitative basis that was contrasted and compared with the

qualitative findings. This approach allowed for a comprehensive understanding of the school culture and critical thinking skills of elementary education students, integrating both quantitative and qualitative data.

For qualitative phase, it involved focus group discussions and in-depth interviews. One-on-one interviews was conducted with those who were identified participants to gather their lived experiences and insights regarding their school culture and critical thinking skills. An interview guide was used to facilitate in-depth interview and focus group discussion. To ensure the authenticity and relevance of the participants, the researcher invited them through personal contacts. Each participant was informed about the tasks involved and the schedule was arranged to accommodate their convenience. This was gathered by considering the use of audio recording.

### 3.4. Data Analysis

For the quantitative data analysis, descriptive statistics such as the mean was used to determine the average response of the participants, while standard deviation was utilized to determine how much the responses varied in the survey about the main variables.

In the qualitative data analysis, participant responses were transcribed, organize, and then categorize into themes using coding and grouping comparable concepts. The findings were presented as tables, figures, or a written summary. As academics, we were totally engaged with the detailed responses, utilizing coding to arrange the data and detect patterns. The goal is to create themes that reflected the experiences of the participants, who in this case were BEED Generalist students at Kapalong College of Agriculture, Sciences, and Technology. This study was a continuous process, which meant that we reviewed the data on a regular basis to build and refine the themes. Sequence, Emphasis, and refine the themes.

### 3.5. Research Ethics

To ensure the trust of KCAST Elementary Education students, this research provided highest priority to their safety, anonymity, protection, and confidentiality. The utmost precautions were taken to deal with these ethical issues and make the participants feel safe and treated with dignity throughout the study.

The researcher adhered to ethical guidelines strictly, such as respect for persons, doing good (beneficence), fairness (justice), obtaining informed consent, and maintaining confidentiality. The guidelines permitted the study to be conducted in a highly reflective and responsible manner, always being keen to protect the rights and interests of the participants (Mack et al., 2005).

## 4. FINDINGS AND DISCUSSION

This section displays the findings both in the quantitative and qualitative components of the study. The first part deals with the quantitative data, reporting the levels of school culture and critical thinking ability among Elementary Education students, together with the significant relationships established between them. The second part reports the qualitative data in matrix form. This matrix presents participants' comments regarding their actual experiences with school culture and critical thinking skills, as well as their insightful comments. It also includes the principal issues explored, core ideas, codes or categories, essential themes, and surrounding theories. There is yet another matrix that brings together the integration of the findings between both the quantitative and qualitative information.

Table 3.1 Level of School Culture

| No.                             | Items                                          | Mean | Descriptive Rating |
|---------------------------------|------------------------------------------------|------|--------------------|
| <b>Collaborative Leadership</b> |                                                |      |                    |
| 1.                              | involving teachers in decision-making process. | 4.10 | High               |

|                                 |                                                                                                                                              |             |                  |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| 2.                              | are protecting instruction and planning time.                                                                                                | 4.11        | High             |
| 3.                              | facilitating teachers working together.                                                                                                      | 4.09        | High             |
| 4.                              | promoting shared responsibility for school improvement.                                                                                      | 4.12        | High             |
| 5.                              | taking seriously their involvement in policy or decision-making.                                                                             | 4.10        | High             |
| <b>Category Mean</b>            |                                                                                                                                              | <b>4.10</b> | <b>High</b>      |
| <b>Teacher Collaboration</b>    |                                                                                                                                              |             |                  |
| 1.                              | providing opportunities for dialogue and planning across all courses.                                                                        | 4.12        | High             |
| 2.                              | taking their time to observe each other teaching.                                                                                            | 4.13        | High             |
| 3.                              | promoting team-based approaches to address student needs.                                                                                    | 4.06        | High             |
| 4.                              | working together to develop and evaluate programs and projects.                                                                              | 4.20        | High             |
| 5.                              | discussing and voicing openly their teaching practice disagreements.                                                                         | 4.13        | High             |
| <b>Category Mean</b>            |                                                                                                                                              | <b>4.13</b> | <b>High</b>      |
| <b>Professional Development</b> |                                                                                                                                              |             |                  |
| 1.                              | utilizing professional networks to obtain information and resources for classroom instruction.                                               | 4.21        | High             |
| 2.                              | seeking ideas regularly from seminars, colleagues, and conferences.                                                                          | 4.16        | High             |
| 3.                              | valuing professional development through attending various training/seminars.                                                                | 4.32        | Very High        |
| 4.                              | maintaining a current knowledge base about the learning process.                                                                             | 4.26        | Very High        |
| 5.                              | valuing the school development.                                                                                                              | 4.32        | Very High        |
| <b>Category Mean</b>            |                                                                                                                                              | <b>4.25</b> | <b>High</b>      |
| <b>Unity of Purpose</b>         |                                                                                                                                              |             |                  |
| 1.                              | supporting the mission of the school.                                                                                                        | 4.35        | Very High        |
| 2.                              | providing a clear sense of direction in line with the school mission.                                                                        | 4.32        | Very High        |
| 3.                              | understanding the mission of the school.                                                                                                     | 4.32        | Very High        |
| 4.                              | reflecting the school mission as the values of the community.                                                                                | 4.37        | Very High        |
| 5.                              | ensuring that their teaching performance reflects the mission of the school.                                                                 | 4.33        | Very High        |
| <b>Category Mean</b>            |                                                                                                                                              | <b>4.34</b> | <b>Very High</b> |
| <b>Collegial Support</b>        |                                                                                                                                              |             |                  |
| 1.                              | trusting each other to make sound decisions and rely on one another's expertise.                                                             | 4.26        | Very High        |
| 2.                              | are willing to offer support and assistance whenever problems arise, ensuring that no one is left to solve challenges alone.                 | 4.20        | High             |
| 3.                              | valuing and appreciating the ideas, suggestions and perspectives of other colleagues, promoting an atmosphere of respect and inclusivity.    | 4.26        | Very High        |
| 4.                              | working cooperatively in teams, collaborating effectively to achieve common goals and enhance the learning environment.                      | 4.30        | Very High        |
| 5.                              | sharing resources, strategies and experiences, providing continuous support to each other, especially during difficult or challenging times. | 4.24        | High             |
| <b>Category Mean</b>            |                                                                                                                                              | <b>4.35</b> | <b>High</b>      |
| <b>Overall Mean</b>             |                                                                                                                                              | <b>4.21</b> | <b>High</b>      |

Shown in Table 3.1 is the level of school culture among Elementary education students in Kapalong Agriculture of Sciences and Technology. It obtained an overall mean score of 4.21 with a descriptive equivalent of High. This means that the Elementary education students oftentimes observed aspects of their school culture. The variable of the study' the school culture, has five indicators namely: collaborative leadership, teacher collaboration, professional development, unity of purpose and collegial support.

*Collaborative Leadership.* In terms of collaborative leadership, the data revealed that the overall mean for this indicator is 4.10, with a descriptive equivalent of high. This indicates that practices related to collaborative leadership is oftentimes observed. The highest mean score within this indicator is 4.12, corresponding to the item no. 4 – *promoting shared responsibility for school improvement*, which suggests that shared leadership efforts are frequently evident. The lowest mean is 4.09, pertains to item no. 3 –

facilitating teachers working together, indicating that collaboration among teachers is also oftentimes observed.

**Teacher Collaboration.** In terms of teacher collaboration, the data revealed an overall mean score of 4.13, with a descriptive equivalent of high. This indicates that the level of school culture is oftentimes observed in terms of teacher collaboration. The highest mean scores are 4.20, described as high. These correspond to item no. 4 - *working together to develop and evaluate programs and projects*. This indicates that the level of school culture being measured is oftentimes observed, the lowest mean score is 4.06, with a descriptive equivalent of high. This corresponds to item no. 3 - *promoting team-based approaches to address student needs*. This indicates that the level of classroom social dynamics is always observed.

**Professional Development.** In terms of professional development, the data revealed an overall mean score of 4.25, with a descriptive equivalent of high. This suggests that in terms of professional development, the level of school culture in terms of professional development is oftentimes observed. The highest mean scores are 4.32, with a descriptive equivalent of very high. This corresponds to item no. 3 - *valuing professional development through attending various training/seminars* and item no. 5 - *value the school development*, with a descriptive equivalent of very high, the lowest mean score is 4.16, with a descriptive equivalent of high. This corresponds to item no. 2 - *seeking ideas regularly from seminars, colleagues, and conferences*. This indicates that the level of school culture being measured is oftentimes observed.

**Unity of Purpose.** In terms of unity of purpose, the data revealed an overall mean score of 4.34, with a descriptive equivalent of very high. This indicates that the level of school culture in terms of unity of purpose is always observed. The highest mean score is 4.37, with a descriptive equivalent of very high. This corresponds to item no. 4 - *reflecting the school mission as the values of the community*. This suggests that the school strongly reflect its mission. This item indicates that it is always observed, the lowest mean scores are 4.32, with a descriptive equivalent of very high, indicating that it is always observed in the school. This corresponds to item no. 2 - *providing a clear sense of direction in line with the school mission* and item no. 3 - *understand the mission of the school*.

**Collegial Support.** In terms of collegial support, the data revealed that the overall mean for this indicator is 4.25, with a descriptive equivalent of high. This suggests that the level of school culture is oftentimes observed in terms of collegial support. The highest mean is 4.30, which also carries a descriptive equivalent of very high. This just means that the level of school culture being described is always observed. This corresponds to the item no. 4 – *working cooperatively in teams, collaborating effectively to achieve common goals and enhance the learning environment*, the lowest mean is 4.20, with a descriptive equivalent of high. It can be interpreted that the measure being described is oftentimes observed. This corresponds to the item no. 4 – *are willing to offer support and assistance whenever problems arise, ensuring that no one is left to solve challenges alone*.

Table 3.2 Level of Critical Thinking Skills

| No.                  | Items                                                                                                        | Mean        | Descriptive Rating |
|----------------------|--------------------------------------------------------------------------------------------------------------|-------------|--------------------|
| <b>Analyzing</b>     |                                                                                                              |             |                    |
| 1.                   | spending time trying to understand everything in great detail is always necessary or fun.                    | 4.13        | High               |
| 2.                   | enjoying discovering how different things are connected to each other, even if they seem unrelated at first. | 4.06        | High               |
| 3.                   | finding the most important information from a text.                                                          | 4.19        | High               |
| 4.                   | considering the credibility and relevance of online information.                                             | 4.25        | High               |
| 5.                   | recognizing potential biases and manipulative techniques used in online content.                             | 4.12        | High               |
| <b>Category Mean</b> |                                                                                                              | <b>4.15</b> | <b>High</b>        |
| <b>Evaluating</b>    |                                                                                                              |             |                    |
| 1.                   | verifying if information is important even if it appears to be true after reading it.                        | 4.31        | Very High          |

|                      |                                                                                                                                       |             |             |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|
| 2.                   | articulating my own stance while empathetically considering diverse perspectives during discussions.                                  | 4.01        | High        |
| 3.                   | checking if information is true before accepting it.                                                                                  | 4.27        | Very High   |
| 4.                   | looking at many different places for answers to decide if information is good.                                                        | 4.17        | High        |
| 5.                   | verifying if something is true before I believe or share it with others.                                                              | 4.29        | Very High   |
| <b>Category Mean</b> |                                                                                                                                       | <b>4.21</b> | <b>High</b> |
| <b>Creating</b>      |                                                                                                                                       |             |             |
| 1.                   | enjoying putting together information from different books and articles.                                                              | 3.95        | High        |
| 2.                   | expressing the same content in many different ways.                                                                                   | 3.96        | High        |
| 3.                   | formulating original ideas and solutions by combining existing knowledge and perspectives.                                            | 4.12        | High        |
| 4.                   | understanding how a text is put together, and sometimes I can change it if I want.                                                    | 4.07        | High        |
| 5.                   | liking to talk about new ideas and what they mean in books I already read.                                                            | 4.05        | High        |
| <b>Category Mean</b> |                                                                                                                                       | <b>4.03</b> | <b>High</b> |
| <b>Remembering</b>   |                                                                                                                                       |             |             |
| 1.                   | remembering about the important parts of the story when I finish reading.                                                             | 4.29        | Very High   |
| 2.                   | retaining and applying relevant information from prior learning experiences to enhance understanding and analysis of new information. | 4.21        | High        |
| 3.                   | recalling things that I read before and talking about them again if I need to.                                                        | 4.23        | High        |
| 4.                   | retaining a lot from what I learn in school.                                                                                          | 4.05        | High        |
| 5.                   | recollecting and talking about the important things after I read something.                                                           | 4.16        | High        |
| <b>Category Mean</b> |                                                                                                                                       | <b>4.19</b> | <b>High</b> |
| <b>Understanding</b> |                                                                                                                                       |             |             |
| 1.                   | understanding things that I read from different topics.                                                                               | 4.09        | High        |
| 2.                   | enjoying comparing different opinions to see how they are similar or different.                                                       | 4.10        | High        |
| 3.                   | finding it easy to say things in my own words.                                                                                        | 4.04        | High        |
| 4.                   | paying close attention to the situations, feelings, and hints in what people say.                                                     | 4.23        | High        |
| 5.                   | liking to notice all the small and hidden things in what people tell me or in what I read.                                            | 4.15        | High        |
| <b>Category Mean</b> |                                                                                                                                       | <b>4.12</b> | <b>High</b> |
| <b>Applying</b>      |                                                                                                                                       |             |             |
| 1.                   | liking to share what I just learned with others.                                                                                      | 4.18        | High        |
| 2.                   | liking to share what I just learned with others.                                                                                      | 4.15        | High        |
| 3.                   | using real-life examples to explain why I believe what I do when we talk about something.                                             | 4.26        | High        |
| 4.                   | trying to use what I learn in my everyday life.                                                                                       | 4.37        | High        |
| 5.                   | enjoying using what I learn in real situations and telling others about it too.                                                       | 4.30        | High        |
| <b>Category Mean</b> |                                                                                                                                       | <b>4.25</b> | <b>High</b> |
| <b>Overall Mean</b>  |                                                                                                                                       | <b>4.16</b> | <b>High</b> |

Shown in Table 3.2 is the level of critical thinking skills among Elementary education students in Kapalong Agriculture of Sciences and Technology. It obtained an overall mean score of 4.16 with a description of high. This means that the Elementary education students manifested oftentimes their critical thinking skills. The variable of the study which is the critical thinking skills which has six indicators namely: analyzing, evaluating, creating, remembering, understanding and applying.

*Analyzing.* In terms of analyzing, the data revealed a total mean score of 4.15, with a descriptive equivalent of high. This indicates that the level of critical thinking skills is oftentimes manifested by the respondents in terms of analyzing. The highest mean score recorded is 4.25, descriptively interpreted as high. This corresponds to item no. 4 - *considering the credibility and relevance of online information*. These just

indicate that measure described in the level of critical thinking skills is oftentimes manifested in terms of analyzing, the lowest mean score is 4.06, which still falls under the descriptive level of high. This corresponds to item no. 2 - *enjoying discovering how different things are connected to each other, even if they seem unrelated at first*. This just means that the measure being describes is oftentimes manifested.

*Evaluating.* In terms of evaluating, the data revealed a total mean score of 4.21, with a descriptive equivalent of high. This indicates that critical thinking skills in term of evaluating is oftentimes manifested by the respondents. The highest mean score item no. 1 - *verifying if information is important even if it appears to be true after reading* recorded is 4.31, which is descriptively interpreted as very high. This corresponds to item no. 1 - *verifying if information is important even if it appears to be true after reading it*. This result indicates that the item is always manifested by the students, the lowest mean score is 4.01, which is descriptively interpreted as high. This corresponds to item no. 2 - *articulating my own stance while empathetically considering diverse perspectives during discussions*. The result shows that it is oftentimes manifested.

*Creating.* in terms of creating. The data revealed a total mean score of 4.03, with a descriptive equivalent of high. This indicates that critical thinking skills in term of creating is oftentimes manifested by the respondents. The highest mean score recorded is 4.12, which is descriptively interpreted as high. This corresponds to item no. 3 - *formulating original ideas and solutions by combining existing knowledge and perspectives*. This suggests that it is oftentimes manifested by the students, the lowest mean score is 3.95, which is also descriptively interpreted as high. This corresponds to item no. 1 - *enjoying putting together information from different books and articles*. The result indicates that it is oftentimes manifested.

*Remembering.* In terms of remembering, the data revealed an overall mean score of 4.19, with a descriptive equivalent of high. This indicates that the level of critical thinking skills, in term of remembering is oftentimes manifested. The highest mean score is 4.29, with a descriptive equivalent of very high. This corresponds to item no. 1 - *remembering about the important parts of the story when I finish reading*. This item indicates that it is always manifested, lowest mean score is 4.05, with a descriptive equivalent of high, indicating that it is oftentimes manifested. This corresponds to item no. 4 - *retaining a lot from what I learn in school*.

*Understanding.* In terms of understanding, the data revealed that the overall mean for this indicator is 4.12, with a descriptive equivalent of high. This suggests that the level of critical thinking skills is oftentimes manifested in terms of understanding. The highest mean is 4.23, which also carries a descriptive equivalent of high. This just means that the level of critical thinking skills being described is oftentimes manifested. This corresponds to the item no. 4 - *paying close attention to the situations, feelings, and hints in what people say*, the lowest mean is 4.04, with a descriptive equivalent of high. It can be interpreted that the measure being described is oftentimes manifested. This corresponds to the item no. 3 - *finding it easy to say things in my own words*.

*Applying.* In terms of applying. The data revealed an overall mean score of 4.25, with a descriptive equivalent of high. This indicates that the level of critical thinking skills is oftentimes manifested in terms of applying. The highest mean score is 4.37, it is described as high. This correspond to item no. 4 - *trying to use what I learn in my everyday life*. This indicates that the level of critical thinking skills being measured is oftentimes manifested, the lowest mean score is 4.15, with a descriptive equivalent of high. This corresponds to item no. 2 - *liking to share what I just learned with others*. This indicates that the level of critical thinking skills is oftentimes manifested.

Table 3.3 Experiences of Elementary Education Students Regarding the Impact of School Culture on Critical Thinking Skills

| Issue Probed                                                               | Core Ideas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Code/ Categories                                                                                                 | Essential Themes                                          | Theoretical Support                    |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------|
| Influence of School Culture on the Development of Critical Thinking Skills | <ul style="list-style-type: none"> <li>Fostering inclusivity, collaboration, and respect among students and teachers, creating a positive environment where individuals feel valued and supported.</li> <li>Feeling encouraged to share my ideas because my teachers foster an open communication environment where I can freely express my thoughts.</li> <li>Having discussions and group activities to help exchange ideas and develop critical thinking skills.</li> <li>Helping build confidence in expressing opinions, making more engaged in the learning process.</li> <li>Working with peers in group discussions and projects allows me to hear different perspectives and challenge my own ideas.</li> <li>Collaborative activities help us think critically by allowing us to analyze information together.</li> <li>Being helped by my classmates help challenge my thinking through different perspectives.</li> <li>Encouraging teamwork and respect makes it easier to share ideas and grow academically.</li> </ul> | Encouraging Communication<br><br>Open<br><br><br><br><br><br><br><br><br><br>Promoting Collaborative in Learning | Fostering a Supportive and Inclusive Learning Environment | Vygotsky's Sociocultural Theory (1978) |
| Inquiry-Based                                                              | <ul style="list-style-type: none"> <li>Having a strong</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Encouraging                                                                                                      | Emphasizing Inquiry to                                    | Dewey's Reflectiv                      |

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                            |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approach Contribute to Students' Critical Thinking Skills | <p>school culture which encourages students to think, analyze, and solve problems.</p> <ul style="list-style-type: none"> <li>• Having teachers who use inquiry-based methods help us develop critical thinking because we are encouraged to ask questions.</li> <li>• When teachers ask open-ended questions, it helps me think critically instead of just memorizing concepts.</li> <li>• The emphasis on inquiry-based learning allows students to explore various viewpoints and develop their reasoning.</li> <li>• Teachers who give real-world problems to solve push us to think beyond memorized answers.</li> <li>• Extracurricular activities such as debates, quiz bees, and club projects help us develop problem-solving skills.</li> <li>• Connecting classroom learning to real-world issues helps students see the importance of critical thinking.</li> <li>• Applying lessons to real-world scenarios makes it easier for us to analyze and evaluate information.</li> </ul> | Questioning and Solve Problems in Thinking Theory (1933)                                                                                                                                                                                   |
| Academic Impacting Critical Thinking Skills               | <p>Pressures Students' Thinking</p> <ul style="list-style-type: none"> <li>• The pressure to meet high standards sometimes makes it difficult to develop deeper thinking skills.</li> <li>• A school culture that focuses too much on memorization limits our ability to think critically.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Applying Learning to Real-World Contexts</p> <p>Meeting High Expectations and Facing Critical Thinking Challenges</p> <p>Balancing Academic Expectations While Supporting Students' Needs</p> <p>Maslow's Hierarchy of Needs (1943)</p> |

|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                                                                |                                            |  |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------|--------------------------------------------|--|
|                                                                             | <ul style="list-style-type: none"><li>• Standardized testing sometimes hinders creative and analytical thinking.</li><li>• Some teachers focus more on grades than on learning, which makes students less motivated to engage deeply with the content.</li><li>• While our school culture is supportive, I sometimes feel that there is a lack of student support, especially in terms of mental health.</li><li>• The workload can be overwhelming, making it hard to engage deeply in critical thinking activities.</li><li>• A supportive school culture should balance academic expectations with student well-being to foster a better learning environment.</li><li>• Encouraging discussions about mental health, alongside fostering a supportive academic culture, can help students navigate high expectations while promoting overall growth.</li></ul> | Addressing Mental Health and Supporting Students |                                                                |                                            |  |
| Extracurricular Activities Contribute to Students' Critical Thinking Skills | <ul style="list-style-type: none"><li>• Extracurricular activities help because they expose us to real-world problems and decision-making situations.</li><li>• Through organizing events, we practice analyzing problems and creating solutions.</li><li>• Activities like debates and speech contests encourage us to think critically and defend our ideas.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Expanding Learning Beyond the Classroom          | Enhancing Critical Thinking Through Extracurricular Engagement | Kolb's Experiential Learning Theory (1984) |  |

- Sports also help us develop strategic thinking and problem-solving skills.
  - Teamwork and collaboration in extracurricular activities improve our ability to analyze and communicate ideas.
  - Collaborating with peers help me to evaluate different perspectives.
  - Extracurricular activities involve teamwork and leadership roles, which help develop your ability to think critically.
  - By working with different people, we learn to respect diverse perspectives and refine our critical thinking.
- Encouraging Collaborative and Leadership Skills

**Fostering a Supportive and Inclusive Learning Environment.** The findings of this study revealed that the development of a supportive and inclusive learning environment is essential in addressing the diverse needs of learners. Knowing that learners have diverse backgrounds, capacities, and experiences underscores the importance of possessing an inclusive environment in which all learners feel valued and supported.

Furthermore, this is testified by Weimer's (2019) findings that teachers should cultivate a strong culture of learning, promote justice and diversity, be a community in how they teach and learn. Inclusivity fosters tolerance, understanding, and empathy in a broader society and is therefore a key element of learning.

Additionally, Sunil's (2024) research also pointed out that building an inclusive classroom for determination students must be underpinned by a commitment strategy based on teachers' attitudes, staff development, interagency collaboration, and the application of inclusive practices such as individualized and personalized learning plans.

**Emphasizing Inquiry to Solve Problems in Learning.** The findings of this study indicated that emphasizing inquiry to problem-solving in learning has a significant contribution to the building of students' critical and analytical thinking skill. It encourages learners to raise questions, analyze different perspectives, and apply knowledge to real-life situations, which enhances their autonomy in thinking and solving complex problems.

Also, this finding is in alignment with Cents-Boonstra et al. (2020), who found that one of the distinguishing strengths of Inquiry-Based Learning is that it can contribute to increasing learners' motivation for learning. By actively involving students in the inquiry process, IBL promotes intrinsic motivation and ownership feelings toward learning outcomes.

In addition, this finding was corroborated by the research of Suntusia et al. (2019) which stressed that problem solving skills are part of higher-level thinking. Such skills educate how to analyze problem situations and make decisions on the basis of analysis.

**Balancing Academic Expectations While Supporting Students' Needs.** The study findings revealed that managing the needs of academics and addressing the needs of students is most critical in

fostering academic achievement and overall well-being. Meeting students to learning standards and addressing their emotional, social, and psychological needs fosters a more positive and productive classroom climate.

In addition, the same is supported by Voisin et al. (2023) and also highlighted that learning environments to foster positive affect can help in the use of flexible, innovative learning strategies that increase one's confidence in ability. Safety in learning environments can enable students to take risks necessary to learn at high levels.

Additionally, this was supported by findings from research conducted by the study Chen et al. (2023) whose finding was that social support level is one of the determinants of satisfaction with life and is positively associated with life satisfaction. Social support has been found to serve as a buffer against psychological distress, a mental health effect, and a protecting effect on life satisfaction, and it is positively related to life satisfaction.

**Enhancing Critical Thinking Through Extracurricular Engagement.** The research findings show that critical thinking through extracurricular activities is part of overall intellectual and personal development for the students. Engagement in activities such as academic clubs, leadership clubs, sports, and arts is always embraced with regards to putting into action knowledge obtained outside the classroom setting, problem-solving abilities, and practicing their concepts for thinking critically

In addition, Research by DC Correspondent (2019) confirmed this finding with emphasis placed on a range of extra-curricular activity benefits such as increased self-esteem, greater sense of belonging and satisfaction with student life, motivation, and improved academic performance. Other positive outcomes that Research revealed were improved teamwork and responsibility and improved communication strategies and leadership capabilities, the overall accumulation of social capital from relationships with other students and wider academic, professional, and business networks.

Furthermore, this finding was sustained by the identification of the research AlAli et al. (2024) that outlined that small group working and collaboration were also mentioned as effective ways of critical thinking achievement. These tasks provide students the opportunity to convey their thoughts, challenge each other's thoughts, and build on common knowledge.

Table 3.4. Insights Shared by Elementary Education Students with Regards to School Culture and Critical Thinking Skills

| Issue Probed                                  | Core Ideas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Code/ Categories                                    | Essential Themes                                              | Theoretical Support |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------|
| Role of School Culture's on Critical Thinking | <ul style="list-style-type: none"><li>A strong school culture encourages students to think, analyze, and solve problems.</li><li>If a school promotes active learning and questioning, it helps students develop their critical thinking skills.</li><li>A culture that values inquiry and diverse perspectives enhances our ability to analyze issues critically.</li><li>When the school allows students to explore ideas freely, they gain confidence in thinking independently.</li></ul> | Recognizing the Role of Inquiry and Open-Mindedness | Understanding School Culture's Influence on Critical Thinking |                     |
|                                               | <ul style="list-style-type: none"><li>A school culture that</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                         | Identifying Barriers to                             |                                                               |                     |

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                 |                                                  |                                         |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------|
|                                                | <p>focuses only on memorization discourages independent thought.</p> <ul style="list-style-type: none"> <li>• Rigid school policies sometimes limit our ability to explore different perspectives.</li> <li>• If teachers only follow a strict curriculum without encouraging discussions, critical thinking is not fully developed.</li> <li>• Schools should balance structure with opportunities for independent learning to enhance critical thinking skills.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Critical Thinking Development                                                   |                                                  |                                         |
| School Culture Influence for Students' Ability | <ul style="list-style-type: none"> <li>• A positive relationship with teachers and peers greatly influences my ability to develop critical thinking skills.</li> <li>• If the teacher is approachable, I won't hesitate to ask questions when I'm confused.</li> <li>• A school culture that fosters discussions allows us to explore different perspectives.</li> <li>• Collaborating with peers during group projects allows me to hear their diverse perspectives, challenging my assumptions.</li> <li>• Some students hesitate to speak up due to fear of judgment, which hinders critical thinking development.</li> <li>• When a classroom environment is judgmental, students avoid sharing their ideas.</li> <li>• School culture should be open for everyone, allowing all students to express their ideas and support creative thinking.</li> <li>• Encouraging diverse perspectives in class helps us refine our</li> </ul> | <p>Creating a Safe Space for Discussions</p> <p>Overcoming Fear of Judgment</p> | Promoting the Sharing of Thoughts and Viewpoints | Bandura's Social Learning Theory (1977) |

|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                            |                                                           |                                           |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| School Culture<br>Encourage<br>Students to<br>Participate in<br>Critical<br>Discussions and<br>Reflections | <p>reasoning without fear of being judged.</p> <ul style="list-style-type: none"> <li>Debates and class discussions improve our critical thinking.</li> <li>Having an open space for discussion improves our ability to argue logically.</li> <li>We engage better when we are asked to defend our perspectives with evidence.</li> <li>Analyzing multiple viewpoints during debates expands our understanding of different perspectives.</li> <li>Teachers who encourage us to reflect on what we learn help deepen our critical thinking.</li> <li>Inquiry-based learning activities push us to analyze rather than just accept information.</li> <li>Critical reflection in learning helps us challenge our own biases and beliefs.</li> <li>Reflective discussions help us connect what we learn to real-life applications.</li> </ul> | Encouraging Debate and Argumentation                       | Encouraging Active Participation in Thoughtful Discussion | Dewey's Reflective Thinking Theory (1933) |
| School Culture<br>Influence<br>Students' Ability to Think Independently and Solve Problems                 | <ul style="list-style-type: none"> <li>A school culture that allows students to explore ideas freely fosters independent thinking.</li> <li>When students are encouraged to find their own solutions, they develop better problem-solving skills.</li> <li>We learn more when we are given autonomy over how we approach learning tasks.</li> <li>Schools that emphasize independent learning help students gain confidence in their critical thinking abilities.</li> <li>Real-world applications of lessons help us develop problem-solving skills beyond theoretical knowledge.</li> <li>Applying classroom</li> </ul>                                                                                                                                                                                                                  | Supporting Independent Learning                            | Cultivating Independent Thinking to Solve Problems        | Vygotsky's Sociocultural Theory (1978)    |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Encouraging Problem-Solving Through Real-Life Applications |                                                           |                                           |

- concepts to real-life problems enhances our analytical skills.
  - Project-based learning helps us think critically about real challenges.
  - Encouraging students to apply critical thinking in practical situations builds lifelong skills.
- 

**Understanding School Culture's Influence on Critical Thinking.** It was discovered in the study that school culture plays a key role in the formation of students' higher-order thinking. Positive and supportive school culture enhances intellectual curiosity, promotes free-thinking discussion, and supports problem-solving, all which lead to the development of higher-order thinking.

In line with this discovery, Shukla et al. (2024) established that policymakers, educators, and stakeholders should be aware of the complex interplay between contextual and cultural influences and critical thinking abilities. Through a systematic overview of the influences, this study seeks to generate informative data that shall be utilized in the formulation of functional evidence-based intervention mechanisms and support structures for equitable problem-solving skill acquisition opportunities among higher secondary school students.

Furthermore, this finding aligns with the research of Sharma (2024) the research investigates that the culture significantly impacts critical thinking, which influences the way individuals think, process, and react to information. With the knowledge of cultural dimensions affecting critical thinking, individuals and organizations can form more efficient problem-solving, decision-making, and communication strategies in multicultural environments.

**Promoting the Sharing of Thoughts and Viewpoints.** The research findings suggested that encouraging students to share their ideas and opinions is a vital role in their cognitive and social development. When students are allowed to express their opinions, views, and participate in meaningful discussions, they acquire confidence, communication skills, and critical thinking skills.

In addition, the discovery is reinforced by King (2023) whose research highlighted that, teachers who facilitate the sharing of differing points of views through students, and those who provide it with safety, communicate implicit, systemic, and exclusionary messages. Course and assignment activities in idea and experience sharing through engagement with classmates from different backgrounds lead to learning outcomes students deem useful for success in a multicultural society.

Moreover, the outcome was also evidenced by Beencke (2024), and the research highlighted that curiosity is one of the basic pillars of critical thinking. Ask students to question what they are learning and test the assumptions they hold. Make it safe for them to share their thoughts and ideas by providing a supportive learning environment. By fostering their curiosity, you can ignite critical thinking and enable students to think outside the box.

**Encouraging Active Participation in Thoughtful Discussions.** This research aimed at finding out the importance of encouraging students to engage in critical discussions in the cultivation of skills in analyzing, evaluating, and using knowledge properly. Having students engage in critical discussions and ponder on what they have experienced significantly enhances their critical thinking skills and increases their critical understanding of concepts.

Also, Indrašienė et al.'s (2023) findings support this outcome by describing that a learner needs to know what they are learning and why and get conscious of changes the learning produces. Critical reflection has worth for bringing into confidence the influences on, and impacts of, thinking and behaviour. This could only be intuited by conceptualizing, reflecting and reconsidering one's learning in an expansive way and in conjunction with others.

Moreover, this research was supplemented with the works of Alabi (2024), the research also discovered that experiential learning focuses on the necessity of ongoing feedback and the possibility for learners to modify and conform according to their experiences. During the learning process, students ought to be given timely and constructive feedback by instructors, mentors, or peers that will assist them in determining areas of improvement, developing their strategies, and improving their performance.

**Cultivating Independent Thinking to Solve Problems.** The findings from the study revealed that encouraging the ability to think independently to solve problems is essential for students to become independent and responsive learners. Encouraging students to think things out, make choices, and solve by themselves enhances their problem-solving and critical thinking abilities.

To this end, Rusmin et al. (2024) emphasized the imperative of developing critical thinking and problem-solving skills as core competencies in order to succeed in the 21st century. As the world is increasingly becoming complex and interconnected, such competencies are not only desired but essential if one is to be in a position to adapt to the challenges and opportunities of modern society.

In addition, this finding was corroborated by Schmidt et al. (2021) who stressed that independent learning is highly crucial to guide oneself towards good behavior that aids learning achievement. Independent learning students will be effortless in learning because students would tend to learn actively.

Table 4. Joint Display of Salient Quantitative and Qualitative Findings

| ASPECT OR FOCAL POINT | QUANTITATIVE FINDINGS                                                                                                                                                                                                                                                            | QUALITATIVE FINDINGS                                                                                                                                                                                                                                                                                             | NATURE OF DATA INTEGRATION | AXIOLOGICAL IMPLICATION                                                                                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| School Culture        | In table 2, on the School Culture in terms of the indicator <i>collaborative leadership</i> , specifically in item number 4- <i>promoting shared responsibility for school improvement</i> . with an overall mean of 4.12 and a descriptive equivalent of high.                  | In table 16 on the lived experiences of the students with a code of <i>Encouraging Open Communication</i> , specifically in the core idea 1- <i>fostering inclusivity, collaboration, and respect among students and teachers, creating a positive environment where individuals feel valued and supported</i> . | Merging-converging         | The high rating of school culture, particularly in collaborative leadership, indicates that a school culture that values teacher and student input fosters open communication, which enhances critical thinking.   |
|                       | In the table 3, on the School Culture in terms of the indicator <i>teacher collaboration</i> , specifically in item number 4- <i>working together to develop and evaluate programs and projects</i> . with an overall average mean of 4.20 and a descriptive equivalent of high. | In table 16, on the insights of the students with a code of <i>Promoting Collaborating in Learning</i> specifically in the core idea 4- <i>encouraging teamwork and respect makes it easier to share ideas and grow academically</i> .                                                                           | Merging-converging         | The high rating of teacher collaboration indicates that when teachers collaborate and observe each other, it models peer learning, encouraging students to develop critical thinking through diverse perspectives. |
|                       | In table 4, specifically in the indicator <i>professional development</i> , specifically in the item number 2- <i>seeking ideas regularly from seminars, colleagues, and conferences</i> , with                                                                                  | In table 16, on the lived experiences of the students with a code of <i>Encouraging Questioning and Inquiring</i> , specifically in the core idea 2- <i>Inquiry-based learning encourages students to</i>                                                                                                        | Merging-converging         | The high rating for professional development indicates that teachers who actively engage in professional development implement strategies that encourage deeper thinking among                                     |

### Critical Thinking Skills

an overall average mean of 4.16 and a descriptive equivalent of high.

In table 6, specifically in the indicator *collegial support*, specifically in the item number 4- *working cooperatively in teams, collaborating effectively to achieve common goals and enhance the learning environment*. With an overall average mean of 4.30 and a descriptive equivalent of very high.

In table 7, on the Critical thinking Skills of the students in terms of the indicator *analyzing*, specifically in the item number 4- *considering the credibility and relevance of online information*, with an overall average mean of 4.25 and a descriptive equivalent of high.

In the table 8, under the indicator *evaluating*, specifically in the item number 2- *articulating my own stance while empathetically considering diverse perspectives during discussions*, with an overall average mean of 4.01 with a descriptive equivalent of high.

In table 10 the indicator *creating*, specifically in the item number 2- *expressing the same content in many different ways*, with an overall average mean of 3.96 and a descriptive equivalent of high.

In table 11, particularly the indicator *remembering*, specifically in the item number 3- *recalling things that I read before and talking about them again if I need to*, with an overall mean of 4.23

*ask questions, analyze problems, and develop critical thinking skills.*

In table 16, on the insights of the students with a code of *Promoting Collaborating in Learning*, specifically in the core idea 4- *encouraging teamwork and respect makes it easier to share ideas and grow academically.*

In table 17, under the category of *Enhancing Reflection Through Inquiry-Based Learning*, specifically in the core idea 2- *inquiry-based learning activities push us to analyze rather than just accept information.*

In table 16 under the category of *Encouraging Collaborative and Leadership Skills*, specifically in the core idea 4- *working with different people, helps to learn and respect diverse perspectives and refine our critical thinking.*

In table 16, under the category of *Expanding Learning Beyond the Classroom*, specifically in the core idea 3- *activities like debates and speech contests encourage us to think critically and defend our ideas.*

In table 17, under category of *Enhancing Reflection Through Inquiry-Based Learning*, specifically in the core idea 1- *critical reflection in learning helps us challenge our own biases and beliefs.*

Merging –  
converging

students.

The high rating for collegial support indicates that a trusting and collaborative school environment helps students encourage teamwork and easy to share ideas that help to grow academically.

Merging-converging

The high rating for Critical thinking Skills, particularly analyzing, indicates that analytical thinking is reinforced when students engage in discussions that require them to extract key ideas and justify their reasoning.

Merging-  
converging

The high rating for *evaluating* suggests that engaging in evaluative discussions allows students to refine arguments and consider multiple perspectives, enhancing critical thinking skills.

Merging-  
converging

The high rating for creating indicates that the ability to reframe content in multiple ways strengthens creativity and critical thinking, especially in argumentation.

Merging-  
converging

The high rating for remembering suggests that retaining and recalling information enables students to engage in critical reflection, helping them challenge biases and refine their

and a description of high.

In table 12, particularly the indicator *understanding*, specifically in the item number 4- *paying close attention to the situations, feelings and hints in what people say*, with an overall mean of 4.23 and a description of high.

In table 13, particularly the indicator *applying*, specifically in the item number 4- *trying to use what I learn in my everyday life*, with an overall mean of 4.37 and a description of very high.

In table 17, under category of *Overcoming Fear of Judgment*, specifically in the core idea 3- *school culture should be open for everyone, allowing all students to express their ideas and support creative thinking*.

In table 17, under category of *Encouraging Problem-Solving Through Real-Life Applications*, specifically in the core idea 2- *applying classroom concepts to real-life problems enhances our analytical skills*.

Merging-converging

Merging-converging

understanding through inquiry-based learning.

The high rating for understanding indicates that an open and supportive school culture fosters students' ability to understand different perspectives, encouraging self-expression and creative thinking without fear of judgment.

The high rating for understanding suggests that encouraging students to apply their learning in everyday life is most effective in a school environment that promotes open communication, creativity, and the freedom to express ideas.

**Collaborative leadership fosters open communication, enhancing critical thinking.** Fostering a collaborative school culture is essential in developing a caring and productive learning community. It is a shared commitment of administrators, teachers, students, and sometimes parents to work together toward educational objectives. This entails a vision, communication channels, cooperation production, decisions based on data to enable inclusivity, trust building, problem solving, continuous improvement efforts, acknowledgment of achievements, and being thoroughly backed by leadership – all with the utmost priority of making students' learning experience central. Collaboration culture honors cooperation as well as achievement.

Also, this is consistent with Parlar et al. (2021) discovered that instructional leadership plays an important role in developing a school culture of collaboration. Their findings indicate principals who actively engage in instructional leadership have a setting where teachers communicate, involve themselves in collaborative decision-making, and take part in professional development activities.

**Teacher collaboration promotes peer learning and enhances students' critical thinking.** Collaboration among the teachers plays a critical role in fostering peer learning as well as nurturing students' critical thinking skills. Through collaboration, since the teachers work together, share teaching methods, and learn from one another's pedagogical practices, they create a study environment that shows multiplicity as well as team effort. This generates debates among the students, critiquing several perceptions, and problem-solving capacity, all of which lead to critical thinking. Research reported that collaborative teacher practice centered on higher student performance and problem-solving had a positive effect on student achievement, demonstrating the relevance of education.

In addition, this was consistent with the results of Viado et al. (2023) found that the use of a collaborative-individual learning approach resulted in a remarkable development in students' critical thinking skills. The outcome was that students who practiced collaborative learning tasks showed improved problem-solving skills, logical reasoning, and better skills to analyze and evaluate information.

### **Professional development enhances teachers' ability to foster deeper thinking in students.**

Engaging in professional development enables teachers to implement strategies that promote deeper thinking among students. Continuous professional development (CPD) activities have been shown to enhance educators' abilities to foster critical thinking skills in their students. CPD activities significantly improved students' learning outcomes, including teamwork, public speaking, and technical competencies, suggesting that as teachers refine their instructional methods through ongoing professional growth, they are better equipped to encourage analytical and evaluative thinking in their students.

Additionally, this aligns to the study of Leibovitch et al. (2024) which indicated that sustained PD led to the transformation of maladaptive beliefs—such as perceiving critical thinking as conflicting with content delivery—into adaptive beliefs that integrate critical thinking with curriculum goals.

**A unified school mission fosters inquiry, independent thinking, and problem-solving skills.** A well-defined and clearly communicated school mission serves as a foundational element in fostering a culture of inquiry and independent thinking among students, thereby enhancing their problem-solving abilities. When educational institutions articulate a unified purpose, it provides direction and coherence to both teaching practices and student learning experiences. This alignment encourages students to engage more deeply with the curriculum, promoting critical analysis and innovative thinking. Research indicates that schools with clearly defined mission statements often experience higher levels of student engagement and academic success, as the mission acts as a guiding framework for educational strategies and objectives.

Moreover, this is congruent to the findings of Parlar et al. (2021) which examined the relationship between school principals' instructional leadership and the development of a collaborative culture within schools. The findings indicated that effective instructional leadership positively correlates with fostering a collaborative school culture, which in turn enhances students' problem-solving abilities.

**A collaborative school environment fosters teamwork and academic growth.** When teachers engage in collaborative practices, such as co-planning lessons and sharing instructional strategies, they enhance the quality of teaching and student learning experiences. This cooperative approach strengthens professional relationships, encourages knowledge exchange, and leads to more effective problem-solving in educational settings. Research suggests that schools that emphasize collaboration among faculty and staff often see improvements in student achievement and overall school performance, as teamwork fosters a culture of continuous learning and shared responsibility.

Similarly, this is in line with the study Kibata et al. (2021) examined the influence of principals' leadership practices on fostering a collaborative school culture in public secondary schools. The findings revealed that principals who actively engage in mentorship and open communication practices contribute significantly to the development of a collaborative environment among teachers.

**Discussions enhance analytical thinking.** Teacher collaboration through co-planning lessons and discussing instructional strategies enhances both teaching quality and student learning outcomes. This cooperative approach fosters professional relationships, promotes knowledge exchange, and improves problem-solving in educational settings. Research indicates that schools that prioritize teacher collaboration experience higher student achievement, as teamwork cultivates a culture of continuous learning and shared responsibility.

Moreover, this aligned with the findings of Dugang et al. (2020) emphasized that discussions play a crucial role in enhancing analytical thinking among students. Their study found that when learners actively engage in discussions, they develop critical thinking skills by identifying key ideas, evaluating different perspectives, and justifying their reasoning.

**Engaging in evaluative discussions enhances critical thinking.** Engaging students in evaluative discussions, where they assess arguments and consider multiple perspectives, enhances their critical thinking abilities. This approach strengthens problem-solving skills, encourages deeper analysis, and fosters intellectual growth in educational settings. Research indicates that classrooms that incorporate evaluative discussions help students refine their reasoning and develop higher-order thinking skills, supporting overall academic success.

Additionally, this aligns to the study of Afify (2019) that examined how group size in asynchronous online discussions impacts students' critical thinking abilities. The study found that smaller group sizes facilitated more meaningful interactions, allowing students to engage deeply in evaluative discussions where they assessed arguments and considered multiple perspectives.

**Reframing content enhances creativity and critical thinking.** Incorporating Playful Design Jams (PDJs) into learning environments enhances critical thinking and creativity among participants. This approach fosters collaboration, strengthens problem-solving skills, and encourages deeper engagement in experiential learning. Research indicates that PDJs, which integrate playful elements and teamwork motivation, effectively improve critical thinking, creativity, communication, and collaboration skills, making them a valuable method for developing essential 21st-century competencies.

Moreover, this is congruent to the findings of Yuliana et al. (2020) which examined the effectiveness of combining collaborative learning with e-learning to enhance students' critical thinking abilities. Utilizing a Research and Development (R&D) methodology, they found that integrating collaborative learning strategies with e-learning platforms significantly improved students' critical thinking skills. The study concluded that this blended approach is effective in fostering critical thinking among vocational school students.

**Retaining information supports critical reflection and deeper understanding.** Incorporating reflective practices and strategic questioning into education enhances student engagement and critical thinking. This approach fosters deeper analysis, challenges existing beliefs, and promotes a more profound understanding of course material. Research indicates that structured reflection and targeted questioning techniques significantly improve critical reflection abilities, leading to better academic performance and comprehension.

Moreover, in line with the study of Loka et al. (2019) investigated the impact of reflective thinking on academic performance among undergraduate dental students. Their study assessed various dimensions of reflective thinking, including habitual action, understanding, reflection, and critical reflection, across different academic years. The findings indicated that higher levels of reflective thinking were associated with better academic performance, particularly among students in their final year.

**A supportive school culture enhances understanding, self-expression, and creativity.** A culturally responsive schools enhances students' academic engagement and success. This approach nurtures a sense of belonging, encourages self-expression, and deepens their understanding of diverse perspectives. Studies show that students who experience strong cultural support demonstrate higher school engagement and academic expectations, emphasizing the importance of incorporating cultural competence and social justice in education.

Moreover, this aligned with the findings of Ahmad et al. (2019) investigated the influence of school culture and classroom environment on the development of soft skills among secondary school students in Malaysia. Their study found that a supportive school culture significantly contributes to enhancing students' abilities in communication, leadership, and critical thinking.

**Learning thrives in open and creative environments.** Fostering a school culture that embraces creative solutions enhances inquiry-based teaching practices. This approach encourages student exploration, promotes problem-solving skills, and supports innovative thinking in education. Research indicates that schools open to creativity are more likely to implement teaching methods that nurture student inquiry, leading to deeper engagement and improved learning outcomes.

Additionally, this align to the study of Vincent-Lancrin et al. (2019) emphasized that fostering creativity and critical thinking in students is significantly influenced by an open and supportive school culture. Their research highlighted that when educational environments encourage open communication and provide opportunities for creative expression, students are more likely to develop essential skills for complex problem-solving.

## 5. CONCLUSION

Based on the findings of the study, the following conclusions were drawn:

First, the level of school culture among elementary education students is generally high. The key indicators—collaborative leadership, teacher collaboration, professional development, unity of purpose, and collegial support—were all rated highly by respondents. This suggests that the students perceive their school environment as supportive, fostering inclusivity, shared goals, and teamwork. Among these indicators, **unity of purpose** had the highest mean, indicating a strong collective commitment to the school's mission and goals.

Second, the findings revealed the significant relationship of school culture and critical thinking skills among Elementary education students using the Mean, R-Value and P-Value. It was revealed that both variables are rejected hence, there is significant relationship between school culture and critical thinking skills among Elementary education students.

Third, the thematic analysis of the qualitative data was conducted based on responses obtained from in-depth interviews (IDI) and focus group discussions (FGD). This analysis provided additional insights into the lived experiences of Elementary education students, specifically regarding the impact of school culture on their critical thinking skills. Qualitatively, Elementary education students have been experiencing different situations in their school culture that impact their critical thinking skills. The following themes were emerged: fostering a supportive and inclusive learning environment, emphasizing inquiring and solving problems in learning, balancing meeting academic expectations and supporting students, and enhancing critical thinking through extracurricular engagement.

Fourth, from the participants responses, other themes are identified which show the insights shared of Elementary education students with regards to the influence of school culture on their critical thinking skills. The following are the themes: understanding school culture's influence on critical thinking, encouraging expressing ideas and perspectives, promoting engaging in critical discussions and reflection, and developing thinking independently and solving problems.

Lastly, to comprehensively assess the impact of school culture on critical thinking skills of Elementary education students, the responses were analyzed thematically to validate the qualitative findings of the study. The results from both phases were integrated according to the planned approach. The quantitative results provided insights into the levels of school culture and critical thinking skills among participants, which were then cross-referenced with the qualitative data. Both sets of findings converged, confirming that school culture significantly influences students' critical thinking skills across various dimensions. This convergence underscores the enhancement of school culture that encourage inquiry-based learning, student collaboration, and open communication create an environment that nurtures critical thinking and prepares students for lifelong learning.

## 6. RECOMMENDATIONS

Based on the findings of the study, the following recommendations were being drawn:

Since the level of perceived school culture among elementary education students reveals that among the five indicators, collaborative leadership and teacher collaboration are crucial in fostering critical thinking skills, schools must focus on strengthening these aspects. Encouraging shared decision-making and teamwork among teachers can create a more engaging and thought-provoking learning environment. Additionally, professional development must be continuously enhanced by offering training and workshops that emphasize critical thinking, problem-solving, and innovative teaching strategies. Schools should also focus on maintaining a strong unity of purpose to align school objectives with student development, ensuring that a collective mission supports critical thinking growth. Furthermore, collegial support among teachers must be reinforced by promoting mentorship and knowledge-sharing sessions to improve instructional methods that enhance students' reasoning abilities.

Moreover, the results indicate that the level of perceived critical thinking skills among students shows that applying knowledge ranks highest, while creating skills have the lowest mean. This suggests that while students can apply learned concepts, they may struggle with generating original ideas and solutions. To address this, teachers should incorporate more activities that encourage creativity, such as project-based learning, brainstorming sessions, and interdisciplinary approaches that allow students to think beyond traditional frameworks. Schools should also integrate inquiry-based learning strategies that prompt students to ask questions, analyze information critically, and develop independent solutions.

Additionally, extracurricular activities must be expanded to provide students with more opportunities to engage in problem-solving and critical discussions outside the classroom. Debate clubs, research groups, and student-led projects can help foster a culture of independent thinking and reasoning. Since the study highlights the significance of school culture in shaping critical thinking, it is also recommended that schools create a more open and discussion-driven classroom environment where students feel comfortable expressing their perspectives and challenging existing ideas without fear of judgment. Providing structured opportunities for students to articulate their reasoning and defend their viewpoints can significantly enhance their analytical abilities.

Lastly, integrating technology into teaching methodologies can further improve students' engagement with critical thinking tasks. Schools should utilize digital learning platforms, interactive simulations, and online discussion forums to facilitate deeper analysis and reflection. Incorporating artificial intelligence-driven educational tools can also provide personalized learning experiences that adapt to students' individual cognitive strengths and weaknesses. By continuously fostering a school culture that values inquiry, collaboration, and reflective thinking, students will develop the necessary critical thinking skills to succeed academically and in real-world decision-making scenarios.

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