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THE CORRELATION OF LEARNING STYLES ON THE CRITICAL THINKING SKILLS AMONG COLLEGE STUDENTS

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Abstract:

In higher education, the increasing diversity of educational and individual needs calls for the systematic means of evaluating students' learning styles and enhancing their critical thinking skills. This research aims to assess the most prevalent learning styles among college students by measuring their critical thinking skills and examining the correlation between the two variables. The study also aims to propose a standardized assessment tool based on the findings. To assess the students' dominant learning styles, the study utilized the Dunn and Dunn's Learning Style Model (1975). Subsequently, to assess their critical thinking skills, the study used ACER Critical Thinking Skill Development Framework (2020). A total of 30 students from different colleges and universities in Mandaue City were administered a standard questionnaire via Google Forms and Messenger. The data analysis indicates that students' learning styles and critical thinking have a significant correlation. This implies that students with certain learning styles in specific domain such as: Environmental (learning in a place where the air is fresh), Sociological (learning by doing interactive experiments in class), Emotional (having the responsibility to learn), Physiological (learning with concrete objects), and Psychological (learning by doing practical tasks) are more likely to exhibit strong critical thinking abilities. This understanding is essential for educational practice, as it allows educators to adapt teaching methods, add critical thinking topics in the curriculum, and consequently develop life-long learning in accordance to each students' learning preferences, which will lead to their improved academic abilities and meet the required skills for their future endeavors.

Keywords: Correlation, Learning Styles, Critical Thinking Skills, College Students

Introduction:

Critical thinking skill is a cognitive skill that plays a pivotal role in shaping someone's intellect. It is a skill that allows individuals to process information, make connections, and organize one's thoughts in a rational and logical way as described in the ACER critical thinking skill development framework by Heard et al. (2020). Moreover, to develop students' critical thinking skills, it is important to consider their learning styles. These are approaches or strategies that students use to make learning more convenient, particularly when it comes to understanding concepts, as well as organizing ideas and solving problems. Specifically, Dunn and Dunn's (1978) Learning Style Model emphasize that each student has different learning styles that helps with their academic performances. According to Shubashree (2023), possessing critical thinking skills empowers every learner to think independently, challenge beliefs, and contribute

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meaningfully to the society they live in. In higher education, the increasing diversity of educational and individual needs calls for the systematic means of evaluating students' learning styles and enhancing their critical thinking skills. Additionally, various research regarding learning styles and its effect on the students' overall ability to conceptualize and apply knowledge have emerged such as the study of Willingham et al. (2015), (Felder, 2020) and Cuevas (2015). These studies focus on the ability of a person through their learning preferences and how they use it in learning. However, despite these existing studies, the correlation between learning styles and critical thinking skill is still unclear, specifically with how learning styles affect the critical thinking skills of the student. More so, there are only a few existing studies conducted in the local context especially when it comes to examining these relationships among college students in Mandaue City. Hence, this study aimed to assess the correlation of the learning styles on the critical thinking skills of the college students in Mandaue City School Year 2023-2024. Specifically, it also aims to assess the students' dominant learning styles, as well as the level of critical thinking skills. Its goal is to establish a foundation for evidence based educational initiatives by carefully assessing the correlation between learning styles and critical thinking skills, making sure that educators are well-equipped to encourage and promote critical thinking skills in all of their students.

Literature Review:

Learning Styles: Dunn and Dunn's Learning Style Model (1978)

In the 1970s, the New York State Department of Education initiated a collaborative effort with the help of Kenneth and Rita Dunn to explore ways to enhance student learning outcomes (Atkinson, 2021). Dunn and Dunn Learning Styles talk about five types of stimuli that can affect a learner and the elements that play into each stimulus to set apart individual learners. This model measures environmental, emotional, sociological, physiological, and psychological preferences as they affect individuals' learning (Mitchel, 2009). In the environmental domain, the study of Ahmed et al (2020) claimed that most of the participants expressed the view that classrooms have adequate ventilation systems in place. This indicates that fresh air has an impact on students' learning capabilities. In the sociological domain, Scribner (2017) stated that hands-on experiments are the best way to teach students that align with the way that students learn best. This implies that students learn differently, and through experiments, it helps them to ask questions, pique their curiosity, encourage them to seek answers, and explore the world around them. In the emotional domain, due to unfavorable teamwork experiences in the past, many students say they would rather work alone than in groups (Pieterse & Thompson, 2010; Tucker & Abbasi, 2016). Therefore, self-regulation is crucial to ensuring that team members take ownership of their learning and positively contribute to team activities (Dierdorff & Ellington, 2012; González-Fernández et al., 2013). In the physiological domain, Rosenbaum et al. (2017) conducted a study in which university students were asked to stand while performing a 72-item Stroop test, which measures inhibition. The findings revealed that the students in the standing condition performed better on the test compared to those in the sitting condition. Lastly, in the psychological domain, Aguilar (2021) claimed that students have low interest in mathematics for several reasons, such as the fact that they do not understand the relevance of math applications in day-to-day life (Kenedi et al., 2019), the fact that they do not understand the explanations of the teacher about the subject (Parrish, 2017), and the fact that they lack the ability and interest in learning mathematics (Ryan et al., 2022).

Critical Thinking Skills: ACER Critical Thinking Skill Development Framework (2020)

In 2020, Jonathan Heard, Claire Scoular, Daniel Duckworth, Dara Ramalingam and Ian Teo developed a critical thinking framework that aims to address the challenges encountered with teaching and assessing critical thinking skills development. With this, they described critical thinking as a valuable skill set to use inside the classroom. Accordingly, they categorized the process of critical thinking into three (3) strands: (1) Knowledge Construction, (2) Evaluating Reasoning, and (3) Making Decision (Heard et al., 2020). When it comes to knowledge construction, during the argumentative reading and writing test, conducted by Song et al., (2017), they revealed that students failed to recognize fallacious arguments, making it a challenge in their reasoning and critiquing abilities. This suggests that the students find it difficult to identify when an argument was flawed, or when reasoning was invalid. In evaluating reasoning, the study of Hasibuan et al. (2020) found out that students lack understanding of logical fallacies, and that "hasty generalization" is the most common logical fallacies that can be found in students' arguments, suggesting a possible weakness in their reasoning skills, which could hinder their ability to interact critically with intricate texts and formulate well-reasoned arguments. Lastly, in terms of making decisions, Liefgreen et al. (2020) discussed how the use of Optimal Experimental

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Design (OED) contributes to people's decision-making strategies, by seeking and maximizing valuable information to reduce uncertainty that improves their capacity to solve challenging scenarios and make well-informed judgments.

Learning Styles and Critical Thinking

In the environmental domain, the study of Cheng (2017) found that the classroom environment significantly impacts students' critical thinking skills. They identified factors such as seating arrangement, lighting, noise levels, and temperature as influential elements. This means that in order for students to focus, the school must provide a conducive learning environment that stimulates the student's critical thinking skills. In the sociological domain, the study of Warsah et al. (2021) revealed that collaborative learning positively affects the critical thinking skills of the students. This implies that collaborative learning helps positively impact the student's critical thinking skills which assess deeper understanding, engagement, and social skills within the group. In the emotional domain, as concluded by Nur'azizah et al. (2021), there exists a positive correlation between students' learning motivation with their academic achievements and critical thinking skills. This means that students' emotional state affects their overall critical thinking skills. When they feel negative emotions, the students make it difficult to concentrate and absorb information. Positive emotion students improve focus and attention and process information more effectively. In the physiological domain, the study of Cavite & Gonzaga (2023) indicated that most respondents gave high ratings to specific indicators, suggesting a preference for using posters, models, or hands-on activities in class. These activities were followed by an inclination for using their hands to create things. They also found that they remembered information most effectively by writing down notes or items multiple times. This could mean that students who fall under the kinesthetic learning style learn best when they engage in experimentation and other real-world activities such as invention, demonstration, or hands-on project. Lastly, in the psychological domain, Psychreg and Bunnell (2022) stated that a student's IQ can influence their performance, but other elements like motivation, interest, and cognition must be considered. This means that a highly motivated learner is more likely to interact with the content, persevere through difficulties, and strive for success. Furthermore, when students are genuinely engaged in a topic, they are more likely to devote time and effort to learning, resulting in improved comprehension and retention of information.

Research Method:

This correlational study is a type of non-experimental research, in which the statistical relationship between the two main variables is assessed using a quantitative research design. This was done through a standardized Likert scale survey questionnaire to gather raw numerical data from college and university students enrolled in the perimeter of Mandaue City. This method allows for a structured analysis of the connections between the variables under investigation, as highlighted by Creswell (2020). Moreover, convenience and cluster sampling were utilized to quickly gather the data from the students based on their accessibility and by clustering the chosen schools: University of Cebu-Lapu-Mandaue, Benedicto College, Cebu Doctors University, and ACLC College of Mandaue. To evaluate the students' dominant learning styles, the researchers employed the Inventory of Dunn and Dunn Learning Styles (IGPDD). This survey is based on the Dunn and Dunn Learning Style model (1978), which categorizes learning styles into five domains: environmental, sociological, emotional, physiological, and psychological. The questionnaire consisted of sixty tasks divided into five sections, with respondents indicating their level of agreement with statements by selecting a corresponding number. Furthermore, to assess the students' critical thinking skills, this study utilized a survey questionnaire developed by Palmina Rosa (2021) of Cambridge University Press, which was divided into three smaller sections: (1) Understanding and Analyzing Ideas and Arguments, (2) Evaluating Ideas and Arguments, and (3) Solving problems and making decisions. These subparts consist of five statements each, modified and provided by the researchers. The Pearson correlation coefficient (Pearson r) and weighted mean were also used in the study to present and measure the strength and direction of the linear relationship between learning styles and critical thinking skills among college students in Mandaue City.

Findings and Discussion:

Part I: Dominant Learning Styles

In this comprehensive analysis, the researchers explored the interpretation and analysis of the dominant learning styles in Tables 1 to 5. These tables contain standardized questions about the different learning preferences of students, including

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environmental, sociological, emotional, physiological, and psychological. The researchers aim to gain a deeper understanding of how students learn by examining these tables, which allows them to pinpoint the dominant learning styles among college students.

Table 1: Environmental Domain

Environmental	M	DE
I love learning with melodious music.	1.13	SP
I love learning with foot-tapping music.	0.73	SP
I like to study in a quiet place.	1.73	SE
I like to learn in a sunny place.	0.73	SP
I always learn in a less luminous way.	1.2	SP
I love learning with a study table lamp only.	1.3	SP
I like to learn in the heat.	0.37	SN
I like to learn in a place where the air is fresh	1.83	SE
I like to study in a cold room.	1.43	SE
I always learn to lie down on the bed.	0.9	SP
I love to learn by sitting on the floor.	1.07	SP
I always learn on tables and chairs.	1.6	SE
Total Score:	**1.17**	**SP**

Legend: 0.00-0.66 = SN (Sounds Nothing), 0.67-1.32 = SP (Sounds Partly), 1.33-2.00 = SE (Sounds Exactly)

The table shows the results of the calculated weighted mean of the dominant learning styles of the students in the Environmental domain. The highest weighted mean is the statement, "I like to learn in a place where the air is fresh" with an average of 1.83, which is interpreted as "Sounds Exactly". Conversely, the table also shows the lowest weighted mean in the Environmental domain, with the statement "I like to learn in the heat" having the lowest average mean of 0.37, which is interpreted as "Sounds Nothing". This finding indicates that students are more likely to enjoy studying in an environment that provides them a sense of freshness. Contrarily, they are not likely to develop a good learning experience in the heat. Hence, this indicates that while some students may tolerate learning in heat, it is not a universally preferred environment for optimal academic performance.

Table 2: Sociological Domain

Sociological	M	DE
I learn better if I learn by myself.	1.4	SE
I prefer to remember things by studying alone.	1.5	SE
I love to learn in pairs.	1	SP
Learning in pairs can improve knowledge on a particular subject.	1.23	SP
love to learn with their peers.	1.2	SP
I like to learn in a large group. (more than 5 persons).	0.87	SP
I like to study in small groups. (5 persons)	1.1	SP
I love learning with the teacher next door.	0.97	SP
I feel good about learning by doing experiments in class.	1.63	SE
I love learning with the teacher next lift.	0.97	SP
I would understand if I learned while talking with friends..	0.97	SP
Learning with the juxtaposition of teachers found it can improve morale and belief.	1.1	SP
Total Score:	**1.16**	**SP**

Legend: 0.00-0.66 = SN (Sounds Nothing), 0.67-1.32 = SP (Sounds Partly), 1.33-2.00 = SE (Sounds Exactly)

The table shows the results of the calculated weighted mean of the dominant learning styles of the students in the sociological domain. The result shows that the statement with the highest weighted mean, "I feel good about learning by doing collaborative experiments in class," with an average of 1.63, is interpreted as "Sounds Exactly." Conversely, the statement with the lowest weighted mean, "I like to learn in a large group (more than 5 persons)," with an average of 0.87,

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is interpreted as "sounds partly." The results show that students strongly identify with the statement that they can learn well in class through collaborative experimenting and that they enjoy absorbing information by actively exploring concepts and gaining practical knowledge from one another. This shows that students preferred collaborative experiments, as it often encourages them to explore, ask questions, and seek answers collectively. However, students who identify with the statement about learning in a collaborative setting may not prefer learning in a larger group, as it can limit their individual participation and engagement compared to a smaller group setting that provides a better balance between collaboration and individual participation.

Table 3: Emotional Domain

Emotional	M	DE
I can stimulate myself to learn.	1.5	SE
I need other people to stimulate myself to learn.	0.87	SP
I need a teacher to stimulate myself to learn..	1.07	SP
I prefer to learn for a long period of time.	1.4	SE
I prefer to learn in a short period of time.	0.7	SP
I take a break before starting a new task.	1.63	SE
I have the responsibility to learn.	1.67	SE
I need a teacher to learn.	1.3	SP
I do not need help from others to complete a task.	0.8	SP
I love to learn by class schedules at school	1.23	SP
I like to study during breaks only.	0.77	SP
I like to learn by providing a timetable at home.	1.33	SE
Total Score:	**1.19**	**SP**

Legend: 0.00-0.66 = SN (Sounds Nothing), 0.67-1.32 = SP (Sounds Partly), 1.33-2.00 = SE (Sounds Exactly)

This table demonstrates the dominant learning styles of students in the emotional domain. The statement "I have the responsibility to learn" got the highest average weighted mean of 1.67, which is interpreted as "Sounds Exactly". Inversely, the statement with the lowest weighted mean of 0.7 stated as "I prefer to learn in a short period of time" and interpreted as "Sounds Nothing". This indicates that most of the students recognize and acknowledge their obligation to engage in the process of lifelong learning. They take responsibility for their learning, are self-directed, motivated and seek out opportunities to learn and acquire knowledge. On the contrary, students do not prefer learning in a short period of time as they find it challenging and less favorable to learn in a limited time frame. This is unfortunately a common phenomenon in today's learning condition. There are instances where students are pressured to learn specific topics in a short period of time due to time constraints and overloaded subjects. As a result, students may feel stress and anxiety, given an insufficient time frame that creates a high-pressure environment. Thus, it can negatively impact the motivation, engagement, and overall well-being of the students if they feel rushed.

Table 4: Physiological Domain

Physiological	M	DE
I would understand better if learning with concrete objects.	1.63	SE
I love to learn to use computers.	1.2	SP
I love to learn that there is a picture chart.	1.57	SE
I love to eat junk food while studying	0.77	SP
I always drink while studying.	1.13	SP
I like to chew gum while studying	0.4	SN
I like to study at midnight	1.23	SP
I like to learn in the morning.	1.1	SP
I like to study in the evening.	1.2	SP
I like to read while traveling	0.9	SP
I love learning while standing.	0.3	SN
I always change seats during the study.	0.53	SN
Total Score:	**1.00**	**SP**

Legend: 0.00-0.66 = SN (Sounds Nothing), 0.67-1.32 = SP (Sounds Partly), 1.33-2.00 = SE (Sounds Exactly)

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The table reveals the results in the physiological domain. The statement with the highest weighted mean is "I would understand better if learning with concrete objects," with an average mean of 1.63, which is interpreted as 'Sounds Exactly'. In contrast, the statement with the lowest weighted mean is "I love learning while standing," with an average mean of 0.3, which is interpreted as 'Sounds Nothing'. This means students would be able to understand and comprehend concepts more effectively when physical or visible objects are presented to them. They can better grasp and relate to abstract concepts when they are presented in a physical way through the use of concrete things, such as models, manipulatives, or real-world examples. In contrast, students also find it less desirable or uncomfortable to learn while they are standing. Studying while standing requires a lot of physical effort which can divert their focus or attention away from studying.

Table 5: Psychological Domain

Psychological	M	DE
I prefer to learn when to study drawing mind maps.	1.5	SE
I have a better understanding of learning by listening to teacher explanations.	1.5	SE
I prefer to study subjects of language.	1.27	SP
I prefer subjects based on the calculations.	1	SP
I learned over time when I can create a model	1.37	SE
I enjoy learning when to do practical work.	1.63	SE
I learned over time when I made something for a class project.	1.5	SE
I love Science subjects.	1.43	SE
I love Mathematics.	1	SP
I love language subjects.	1.1	SP
I love History subjects.	1.23	SP
I love Art Education subjects.	1.43	SE
Total Score:	**1.33**	**SE**

Legend: 0.00-0.66 = SN (Sounds Nothing), 0.67-1.32 = SP (Sounds Partly), 1.33-2.00 = SE (Sounds Exactly)

The table shows the calculated mean of the dominant learning styles of the students in the psychological domain. The highest weighted mean is "I enjoy learning when doing practical tasks" with an average of 1.63, which is interpreted as "Sounds Exactly." Conversely, the statements with the lowest weighted mean are "I prefer subjects based on calculations" and "I love mathematics," with an average of 1, which is interpreted as "sounds partly." Most of the students strongly identify with the statement about practical work, saying that they find the process of actively applying their knowledge and skills in the real world enjoyable. Through practical work, it allows students to actively participate and engage in a hands-on experience that goes beyond passive learning. While some students partially identify with the statement that got a low weighted mean, they have less interest in any activities that involve calculation, especially math. The results imply that students tend to actively engage more in an activity where they can apply their knowledge and skills rather than engaging themselves in an activity that involves abstract concepts and complex calculations.

Part II: Level of Critical Thinking Skills

This comprehensive analysis focuses on the interpretation and analysis of the level of critical thinking skills among college students in Tables 1 to 3. These tables contain standardized questions about the process of information in different aspects, including understanding and analyzing ideas and arguments, evaluating ideas and arguments, solving problems, and making decisions. By delving into these tables, the researchers aim to gain a deeper understanding of the level of critical thinking skills and how students engage in information processing.

Table 6: Understanding and Analyzing Ideas and Arguments (Knowledge Construction)

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Understanding and Analyzing Ideas and Arguments	M	DE
I am able to recognize the main ideas in spoken or written communication.	3.03	O
I have the ability to break down or simplify complex ideas so that they are easier to understand.	2.87	O
I am able to identify underlying assumptions within an argument.	2.53	O
I have no trouble differentiating facts and opinions in many different situations.	2.67	O
I am skilled at summarizing information while keeping its core meaning.	2.67	O
Total Score:	**3.44**	**A**

Legend: 1.00-1.75 = R (Rarely), 1.76-2.50 = S (Sometimes), 2.51-3.25 = O (Often), 3.26-4.00 = A (Always)

The table reveals the level of students' critical thinking in terms of Understanding and Analyzing Ideas and Arguments. The highest weighted mean, 3.03 is the statement, "I am able to recognize the main ideas in spoken or written communication." Conversely, the lowest weighted mean, 2.53 is the statement, “I am able to identify underlying assumptions within an argument.” This result shows an indicator of proficiency of respondents in terms of grasping the main idea behind any form of oral or written communication. In contrast, the respondents find it difficult to recognize hidden assumptions and implicit meanings within arguments. As such, it can be argued that students have challenges negotiating complexities in their reasoning and identifying errors made during argumentation. This finding emphasizes that even though students can identify explicit and definite information, they have problems with the more nuance part of critical thinking. Knowing what is being talked about in any paragraph indicates understanding of the topic at hand and this is a positive outcome. Considering that they are able to reach higher education, this critical thinking skill must have been honed through numerous school related activities that allowed them to engage in different meaningful discussions.

Table 7: Evaluating Ideas and Arguments (Evaluating Reasoning)

Evaluating Ideas and Arguments	M	DE
I am able to evaluate the reliability of evidence that is presented in support of an idea or claim.	2.63	O
I am skilled at spotting logical fallacies in arguments that are presented orally or in writing.	2.5	S
I am able to effectively evaluate the strengths and weaknesses of different perspectives.	2.77	O
I am good at weighing different points of view before making a decision.	2.67	O
When evaluating arguments, I am able to assess the reliability of Information sources.	2.53	O
Total Score:	**3.28**	**A**

Legend: 1.00-1.75 = R (Rarely), 1.76-2.50 = S (Sometimes), 2.51-3.25 = O (Often), 3.26-4.00 = A (Always)

In terms of the students' critical thinking skills in Evaluating Ideas and Arguments, the table shows that the statement, "I am able to effectively evaluate the strengths and weaknesses of different perspectives" got the highest weighted mean of 2.77, interpreted as ‘Often’. In contrast, the statement, “I am skilled at spotting logical fallacies in arguments that are presented orally or in writing” obtained the lowest weighted mean of 2.5, interpreted as ‘Sometimes’. This implies a significant strength in the respondents’ skills when it comes to analyzing and evaluating information from various angles. However, it also showed that they are least confident when it comes to their skills in spotting logical fallacies in written or oral communication. This result highlights an evident discrepancy in students’ abilities where they excel in considering multiple viewpoints but lack the capacity to detect errors in reasoning within arguments.

Table 8: Solving Problems and Making Decisions (Making Decision)

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Solving Problems and Making Decisions	M	DE
When tackling a problem, I weigh the pros and cons of several options before coming up with a decision.	3.07	O
I have faith in my ability to adapt different strategies in the face of unforeseen or unexpected difficulties.	2.63	O
I am able to consider the possible outcomes of various choices or decisions.	2.7	O
I am good at figuring out the root causes of problems before finding a solution to it.	2.7	O
I am able to make decisions by carefully evaluating the information that is available to me.	3.4	A
Total Score:	**3.63**	**A**

Legend: 1.00-1.75 = R (Rarely), 1.76-2.50 = S (Sometimes), 2.51-3.25 = O (Often), 3.26-4.00 = A (Always)

In terms of the students' critical thinking skills in Solving Problems and Making Decisions, the table shows that the statement with the highest weighted mean of 3.4 is "I am able to make decisions by carefully evaluating the information that is available to me," which is interpreted as 'Always'. In contrary, the statement with the lowest weighted mean of 2.63 is "I have faith in my ability to adapt different strategies in the face of unforeseen or unexpected difficulties," which is interpreted as 'Often'. This reveals that respondents are mostly assured of their ability to evaluate any available information to make decisions. While participants often exhibit this skill, there may be some level of uncertainty or lack of confidence in their ability to respond flexibly when faced with unexpected obstacles. This suggests strategies for teaching that will not only reinforce decision making but also develop their confidence and resilience towards unforeseen difficulties. Hence, teachers addressing these areas will produce students who are better prepared to face problems head on since they know how to adapt to expected or unexpected situations with great flexibility and self-confidence.

Part III: The Correlation of Learning Styles and Critical Thinking Skills

In this part, the researchers delve into interpretation and analysis to determine the correlation of learning styles and critical thinking skills among college students with the use of the formula Pearson Correlation Coefficient (r) that is presented in the table. The researchers computed the given data to get the results in order to know if there is a significant correlation between the learning styles and critical thinking skills among the college students.

Table 9: Correlation of Learning Styles and Critical Thinking Skills

Coefficient	N	T-statistics	DF	y value	Decision
0.389353482	30	2.236772214	28	0.03344545965	Reject

The Pearson correlation coefficient (r) of 0.389 indicates a positive correlation between learning styles and critical thinking skills. The correlation is moderate in strength, which indicates that there is an apparent relationship between the variables, however, it is not extremely strong. The T-statistic value of 2.237 suggests that the correlation coefficient is statistically significant, as it exceeds the critical value of the degrees of freedom (df). The y value of 0.03 is less than the alpha ($y < 0.05$), which means that the correlation is considered statistically significant. Therefore, the result suggests that there is a significant correlation between students' learning styles and critical thinking skills, rejecting the null hypothesis.

This finding validates the importance of considering learning styles when promoting critical thinking in educational settings. As shown in second part of the tabulation, most students failed to obtain the higher and more complex part of critical thinking. This is due to the fact that in the present learning conditions, specifically in Mandaue City, most of students' preferred learning styles were only partially or not implemented inside the classroom. This means that the teacher's instructional methods and the students' learning conditions did not align with their preferred learning styles, resulting to them, obtaining only the lower levels of critical thinking. This implies that when students can learn in a way that is best suited to them, they are more likely to exhibit high level of critical thinking.

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Conclusion:

The findings indicated that the students' preferred learning styles did not align with the learning conditions that they were provided with. When it comes to their critical thinking, they were only able to obtain the basic levels of critical thinking, while struggling with the higher levels. Hence, the result shows a significant correlation 77 between students' learning styles and critical thinking skills. This implies that the inconsistency between students' preferred learning styles and the provided learning conditions may be a barrier to their development of higher critical thinking abilities. Students find it difficult to fully comprehend and implement complex ideas if they are not engaged in a way that is in line with their natural preferences for learning. Consequently, this disconnection can cause limited capability of accomplishing higher-level analytical and evaluative tasks.

Limitations and Further Research:

This study is limited in terms of the sampling of its respondents. It utilized a cluster sampling, in which the selection of respondents is solely based on the different schools in Mandaue City and were not furtherly clustered into each department or courses offered in those schools. Future researchers can address this gap by examining different learning styles and how they affect certain aspects of critical thinking, particularly and exclusively in a group of college or university students from a specific course or department. By conducting further research, researchers can contribute to a deeper understanding of the intersection of learning styles and critical thinking, which informs educational practices and curriculum development. Moreover, the researchers highly recommend their proposed learning style assessment tool, as it can help students attain their full potential in both academic and professional situations. Understanding their learning style allows students to adjust their study strategies and approaches to their individual strengths and preferences. This individualized approach to learning can help them engage, comprehend, and retain material better. When students understand their learning style, they may make more educated judgments regarding the study approaches and resources that work best for them. This can lead to better results on tests, projects, and other assessments, as well as enhanced critical thinking skills.

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