Grade 12 Students' Learning Styles and Academic Performance

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Abstract

Aim: The study primarily aimed to determine the relationship between the Learning Styles and the Academic Performance of the Grade 12 Students in Dagohoy National High School, School Year 2022-2023.

Methodology: This quantitative research investigation used a descriptive evaluative design. To determine the respondents of this research a simple random sampling was used, and data gathered through a survey questionnaire form. The gathered data were tallied, analyzed, and interpreted using percentages to describe the demographic profile of the students and the level of academic performance of the students. The Pearson Product Moment-Coefficient of Correlation was used to determine the significant relationship between the learning styles of the students and academic performance. And the Single Factor ANOVA (Analysis of Variance) was used to determine significant variance among the six (6) strands on the learning styles of the students. An adopted questionnaire from the University of Texas Learning Center (2006) was used among students' learning styles.

Results: Results showed that there is no significant relationship between the learning styles of the students and academic performance, thus, the null hypothesis is accepted. The second null hypothesis of the study is also accepted since there is no significant variance among the six (6) strands on the learning styles of the students.

Conclusion: Conclusively, the majority of students at Dagohoy National High School have distinct learning preferences, but this factor does not have a significant impact on their academic achievements, as long as they are motivated to study and work towards achieving their desired grades. Since there is no significant relationship between the learning styles of the students and academic performance, the grades of respondents could potentially be influenced by factors beyond their learning styles. Additionally, the learning styles of the students across the six strands do not exhibit a significant variation, thus, the respondents from all strands displayed the three (3) categories of learning styles (visual, auditory, and tactile). Future researchers may conduct further studies regarding students' achievement based on instructional approaches and students' learning styles.

Keywords: academic performance, auditory learning style, learning styles, tactile learning style, visual learning style

INTRODUCTION

Engaging in education poses challenges and demands for students, as they encounter growing pressures at every step of their academic path in today's rapidly evolving society. Students hold a crucial position within society and play a significant role in shaping its future. Therefore, it is important to pay attention to the psychological characteristics of students and the factors that impact their academic performance. Academic performance encompasses the extent of accomplishment or triumph exhibited by a student in their educational endeavors, usually evaluated through grades, exam results, or other forms of academic assessments. It indicates the proficiency, capabilities, and knowledge acquired by a student within a specific academic environment (Alferez, et al., 2023; Amihan & Sanchez, 2023; Salendab, 2021; Salendab, 2023; Salendab & Akmad, 2023).

Learning is a multifaceted aspect influenced by various factors, including intelligence, motivation, conducive environment, domestic circumstances, community dynamics, school quality, and teacher competence (Carvajal & Sanchez, 2023; Salendab & Cogo, 2022; Sanchez, 2022). Additionally, the learning style of individuals is an additional element that influences their learning process (Taheri et al., 2021; Lajera et al., 2023; Galgo et al., 2023a). Hence,

the academic performance of students plays a crucial role in cultivating competent graduates who will become future leaders and contribute to their respective countries. Various factors, including psychological, social, personal, and environmental factors, influence student performance. One such factor is the concept of 'Learning Styles', which also contributes to the overall academic achievement of students.

Learning styles refer to the methods by which learners acquire, process, organize, draw conclusions from, and store information for future use (Dizon & Sanchez, 2020; Salendab & Dapitan, 2020). These styles are frequently classified based on sensory modalities, which include visual, auditory, verbal (reading/writing), and kinesthetic approaches. Moreover, learning styles vary among learners, with each student having unique characteristics and preferred ways of adapting to their learning environment. Additionally, learning style significantly influences students' preferences for specific teaching approaches and learning environments. Learners consistently choose the styles they perceive as suitable for achieving optimal learning outcomes in their context (Abouzeid et al., 2021; Chick, 2020; Galgo et al., 2023b).

The learning styles of students can have an impact on their academic performance as it influences the potential outcomes of their schooling. Students who do not have a specific learning style may struggle to learn efficiently, which can affect their overall educational achievements. Meanwhile, teachers play a role in identifying students' learning styles based on their experience and knowledge, which in turn can shape their perception and expectations of students' academic performance (Muńoz & Sanchez, 2023; Salendab & Dapitan, 2021a; Sanchez, 2023a; Sanchez, et al., 2022). The prevailing learning style among both strong and weak students was found to be the reading-writing model. Interestingly, most strong and weak students demonstrated a preference for a single learning style, indicating similarity in their learning style preferences. However, no significant correlation was observed between the type and number of learning styles and academic achievement (Mozaffari et al., 2020).

Understanding students' learning styles has advantages in improving learning environments, designing online courses, and enhancing the teaching-learning process. Strong students showed a higher prevalence of the kinesthetic learning style (57.1%), while weak students exhibited a dominant preference for the auditory learning style (37.2%). It was observed that most students in both groups had a singular learning style preference, indicating a tendency towards unimodal learning. However, the study did not find a statistically significant relationship between learning styles and academic performance (Kouhan et al., 2021; Galgo & Balbaguio, 2022).

Contrastingly, most students had visual learning styles (54.5%), followed by auditory (24.2%) and kinesthetic (13.6%) learning styles. Some students exhibited multiple learning styles, such as visual-auditory (3.1%), visual-kinesthetic (3.1%), and auditory-kinesthetic (1.5%). Statistical analysis using the chi-square test showed that there was a significant relationship between learning styles and the academic achievement of prospective mathematics education teacher students (Kurniawan et al., 2020; Galgo, 2020a; Galgo, 2020b).

At Dagohoy National High School, Grade 12 students may face challenges with difficult lessons and topics, which can impact their academic performance. To tackle these demanding subjects effectively, students should be mindful of their learning styles and utilize them to their advantage. By identifying the learning styles that work best for them, students can employ appropriate strategies to navigate and succeed in the necessary tasks and requirements by utilizing effective study techniques that align with their preferred learning style.

Republic Act No. 10533, popularly known as the Enhanced Basic Education Act of 2013, has the objective of enhancing the Philippine basic education system through an improved curriculum and an extended duration of basic education. The law aims to strengthen the quality of education by expanding the curriculum and increasing the number of years, enabling students to be better prepared for future studies or employment. This entails developing a curriculum that focuses on the needs of individual learners, promoting inclusivity and aligning with their developmental requirements. The legislation provides a framework that supports the exploration of different learning styles and their impact on academic performance. It advocates for learner-centered approaches, holistic development, inclusive education, and equal access to education, all of which contribute to understanding the relationship between learning styles, academic performance, and the educational reforms introduced under this law.

The Department of Education "K to 12 Basic Education Program", focuses on learner's complete identity, learning style, developmental needs, and growth. The primary objective is to promote the learner's holistic learning and development. In the classroom, the teacher creates a supportive environment where the learner enjoys the learning process, engages in meaningful experiences, and achieves success. The learner feels respected, accepted, and secure, even when making mistakes during their learning journey. They have the freedom to learn at their own pace and in their preferred learning style. The approach empowers the learner to make choices and take responsibility for their own learning, both in the classroom and throughout their lifetime (Salendab & Dapitan, 2021b; Salendab & Laguda, 2023; Salendab & Sanchez, 2023).

Research Questions

The main goal of this study is to evaluate the learning styles and academic performance of the Grade 12 students in Dagohoy National High School, Poblacion, Dagohoy, Bohol for S.Y. 2022-2023.

Specifically, this study sought to determine the learning styles and the following:

1. What is the level of academic performance of Grade 12 students?
2. Is there a significant relationship between the learning styles of the students and academic performance; and
3. Is there a significant variance among the six (6) strands on the learning styles of the students?

Hypotheses

H01: There is no significant relationship between the learning styles of the students and academic performance.
H02: There is no significant variance among the strand on the learning styles of the students.

METHODS

Research Design

The researchers employed a descriptive evaluative design to assess the learning styles of the students. This involved gathering data to provide a detailed description of the learning styles phenomenon and evaluating its implications on students' well-being and academic performance. The research aimed to obtain a comprehensive understanding of students' learning styles, which would then inform the development of interventions and support mechanisms to foster their belief in their academic growth. Additionally, the descriptive research design employed a systematic approach to gather data that accurately depicted a particular phenomenon, situation, or population.

Research Environment and Respondents

The study was conducted at Dagohoy National High School, Poblacion, Dagohoy, Bohol, S.Y. 2022-2023. The researchers employed a simple random sampling technique to select a representative sample of 60 students from the Grade 12 population, which comprised of 280 students enrolled in different strands. Each strand had an equal number of students, ensuring fair representation. The sample consisted of 30 boys and 30 girls, with a subgroup of 10 students from each strand. To achieve a balanced representation of students from different strands and genders in the Grade 12 cohort, a random selection was conducted by picking names from a strip of paper, as advised by the statistician and the committee. This sampling approach aimed to ensure equal inclusion of 5 boys and 5 girls for each strand.

Research Instrument

To obtain the necessary data for the study, the researchers used an adapted questionnaire on "Student's Learning Styles" from University of Texas Learning Center (2006). The first part is the respondents' demographic profiles such as age, sex, and strand. The second part is all about the statements concerning the students' learning styles. The researchers note the reliability of the instruments in accord with rigorous standards of measurement described in a study report. A validation is done by having a panel of experts.

Data Gathering Procedure

The researchers directly conducted the study by personally handing out survey questionnaires to the participants. The survey questionnaire consisted of two (2) parts from an adapted questionnaire on the "Student's Learning Styles" from University of Texas Learning Center (2006), which aimed determine the relationship between the learning styles of the students and academic performance.

Data Analysis

The study utilized simple percentage, frequency count, and weighted mean score to describe the profile of the respondents and the learning styles. Pearson-Product Moment Coefficient of Correlation formula was used to determine the relationship between the learning styles of the students' and academic performance and the single factor ANOVA (Analysis of variance) was used to determine the variance among the six (6) strands of the learning styles of the students. For the interpretation of the results, the weighted mean score was subjected to the

interpretation scale: 3.26 – 4.00 – Always   2.51 – 3.25 – Often   1.76 – 2.50 - Sometimes   1.00 – 1.75 – Never.

Ethical Consideration

To ensure the trustworthiness and dependability of the study's outcomes, the researchers meticulously followed established research protocol guidelines. Before commencing the study, they obtained permission from the school principal to conduct their research. Informed consent letters were presented to the participants, who were given the opportunity to sign them if they agreed to take part in the study. The survey questionnaire was personally administered by the researchers to the participants. To protect the privacy and confidentiality of the respondents, the collected data was treated as confidential and anonymous, with only the researchers having access to the survey responses. Once the data had served its purpose, appropriate measures were taken to dispose of it securely, ensuring that no personal information was accessible to anyone other than the researchers. The researchers obtained approval from the school, signifying their dedication to upholding ethical standards and safeguarding the rights and well-being of the participants. By adhering to these ethical practices, the study's findings retain their credibility, and the rights and safety of the participants are upheld.

Limitation of the study

This research study focuses exclusively on Grade 12 students from Dagohoy District, Dagohoy, Bohol. The scope of the study is limited to examining the learning styles of the students and their academic performance as measured by their general average. Consequently, the study aims to differentiate the learning styles of the respondents and evaluate their academic performance based on this limited criterion. It does not encompass other aspects or factors beyond learning styles and general average in assessing student performance.

RESULTS and DISCUSSION

Table 1.1 to 1.4 showed the Student's Learning styles which comprised of the following classifications: (1) Visual, (2) Auditory, and (3) Tactile Learning Styles.

Table 1.1. Student's Learning Styles : VISUAL (n=60)

Statements (VISUAL)	WM	DI	Rank
1. I prefer to see information written on the board and supplemented by visual aids and assigned readings.	2.63	Often	5
2. I like to write things down or take notes for visual review.	2.90	Often	2
3. I am skillful with and enjoy developing making graphs and charts.	2.50	Sometimes	7.5
4. I can easily understand and follow directions on a map.	2.68	Often	4
5. I can understand a news article better by reading about it in the newspaper or online rather than by listening to a report about it on the radio or internet.	2.50	Sometimes	7.5
6. I think the best way to remember something is to picture it in my mind.	3.13	Often	1
7. I am good at working and solving jigsaw puzzles and mazes.	2.52	Often	6
8. I prefer obtaining information about an interesting subject by reading about it.	2.80	Often	3
Composite Mean	**2.71**	**Often**	

Interpretation Scale: *3.26 – 4.00 – Always   2.51 – 3.25 – Often   1.76 – 2.50 - Sometimes   1.00 – 1.75 – Never*

The research findings revealed that the highest level of student interest was observed for item 6, which states "I think the best way to remember something is to picture it in my mind." The descriptive interpretation for this item, categorized under visual learning style, indicated an "Often" response, with a corresponding weighted mean of 3.13.

This result suggested that a significant number of students expressed a strong inclination towards using mental imagery as a memory strategy. They believed that forming visual representations in their minds is an effective

approach for retaining information. The weighted mean of 3.13 indicated a relatively high level of agreement among the respondents regarding the effectiveness of this particular learning method.

Moreover, the results of the study showed that students had the least amount of interest in items 3 and 5, which pertained to skills in creating graphs and charts, as well as the preference for understanding news articles through reading rather than listening. The descriptive analysis revealed that participants responded with a "Sometimes" rating, with a weighted mean of 2.50. This further means that students showed a lower level of motivation or enthusiasm when it came to engaging in activities related to creating graphs and charts. Additionally, they displayed a preference for reading news articles as a means of comprehension, rather than relying on listening to reports.

Table 1.2. Student's Learning Styles : AUDITORY (n=60)

Statements (AUDITORY)	WM	DI	Rank
1. I can remember best by listening to a lecture that includes information, explanations and discussions.	2.70	Often	2
2. I require explanations of diagrams, graphs, or visual directions.	2.72	Often	1
3. I can tell if sounds match when presented with pairs of sounds.	2.55	Often	7.5
4. I do best in academic subjects by listening to lectures and tapes.	2.55	Often	7.5
5. I learn to spell better by repeating words out loud than by writing the words on paper.	2.56	Often	6
6. I would rather listen to a good lecture or speech than read about the same material.	2.67	Often	4
7. I prefer listening to the news on the radio or online rather than reading about it in a newspaper or on the internet.	2.61	Often	5
8. I follow oral directions better than written one.	2.68	Often	3
Composite Mean	**2.63**	**Often**	

Interpretation Scale: *3.26 – 4.00 – Always   2.51 – 3.25 – Often   1.76 – 2.50 - Sometimes   1.00 – 1.75 – Never*

The research findings revealed that the highest level of student interest was observed for item 2, which states " I require explanations of diagrams, graphs, or visual directions." The descriptive interpretation for this item, categorized under auditory learning style, indicated an "Often" response, with a corresponding weighted mean of 2.72.

The result indicated a strong inclination among students to seek explanations for visual content, which enhances their learning process. Particularly, students who lean towards the auditory learning style display a keen interest in having visual information explained to them verbally or through auditory methods. Moreover, a substantial number of students regularly seek explanations for visual materials to aid their learning. The calculated value of 2.72 further reinforces that, on average, students have a notably high interest in seeking explanations for visual content.

On the other hand, the research findings revealed that the lowest level of student interest was observed for items 3 and 4, which states "I can tell if sounds match when presented with pairs of sounds" and "I do best in academic subjects by listening to lectures and tapes." The descriptive interpretation for these items, indicated an "Often" response, with a corresponding weighted mean of 2.55.

This further emphasized that students exhibited the least interest in items 3 and 4, which involve the ability to determine sound matches and relying on lectures and tapes for academic subjects. Most students responded with an "Often" for these items, indicating a general lack of strong interest. The computed weighted mean of 2.55 further reinforces the conclusion that, on average, students show relatively low interest in these particular aspects of auditory learning.

Table 1.3. Student's Learning Styles : TACTILE (n=60)

Statements (Tactile)	WM	DI	Rank
1. I prefer to use posters, models, or actual practice and other activities in class.	2.83	Often	1.5
2. I enjoy working with my hands or making things.	2.83	Often	1.5
3. I can remember best by writing things down several times.	2.57	Often	5

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4. I play with coins or keys in my pocket.	**2.66**	**Often**	**4**
5. I chew gum, smoke or snack while studying.	**1.90**	**Sometimes**	**8**
6. I learn the spelling of words by "finger spelling" them.	**2.30**	**Sometimes**	**7**
7. I grip objects in my hands during learning periods.	**2.47**	**Sometimes**	**6**
8. I feel very comfortable touching others hugging, handshaking, etc.	**2.72**	**Often**	**3**
Composite Mean	**2.54**	**Often**	

Interpretation Scale: *3.26 – 4.00 – Always   2.51 – 3.25 – Often   1.76 – 2.50 - Sometimes   1.00 – 1.75 – Never*

The research findings revealed that the highest level of student interest was observed for items 1 and 2, which states " I prefer to use posters, models, or actual practice and other activities in class" and "I enjoy working with my hands or making things." The descriptive interpretation for this item, categorized under tactile learning style, indicated an "Often" response, with a corresponding weighted mean of 2.83. This means that it underscore a strong student interest in utilizing visual aids, hands-on activities, and engaging in creative endeavors, which emphasizes the significance of tactile learning experiences.

In contrast, item 5, which states "I chew gum, smoke, or snack while studying," received the lowest level of student interest. The descriptive interpretation for this item, categorized under tactile learning style, indicated a response of "Sometimes," with a corresponding weighted mean of 1.90.

This finding suggested that a minority of students reported engaging in activities such as chewing gum, smoking, or snacking while studying. The weighted mean of 1.90 reflects a relatively lower level of agreement among the respondents regarding the frequency of incorporating these tactile behaviors during their study sessions.

The result highlighted that the majority of students do not commonly associate tactile sensations, such as chewing gum or snacking, with their studying practices. It implies that these specific activities may not be considered beneficial or conducive to effective learning among the surveyed students. The lower weighted mean of 1.90 indicates a reduced inclination towards employing tactile strategies during study sessions.

Understanding these findings is valuable for educators and students alike. It indicated that tactile behaviors, as described in item 5, may not be popular or preferred among the surveyed students as they engage in their study routines. This knowledge can help educators design learning environments that align with the predominant learning styles and preferences of the students, ultimately enhancing their academic experience and performance.

Table 1.4. Student's Learning Styles (n=60)

Learning Styles	**Composite Mean**	**DI**	**Rank**
Visual	**2.71**	**Often**	**1**
Auditory	**2.63**	**Often**	**2**
Tactile	**2.54**	**Often**	**3**
Overall Composite Mean	**2.63**	**Often**	

Interpretation Scale: *3.26 – 4.00 – Always   2.51 – 3.25 – Often   1.76 – 2.50 - Sometimes   1.00 – 1.75 – Never*

The study resulted that, on average, students in the study exhibited a greater preference for and effectiveness in learning through visual stimuli. The composite mean score of 2.71 with a descriptive interpretation of "Often", which takes into account the responses across multiple items or indicators related to each learning style, was highest for visual learning. This suggested that a significant number of students in the sample demonstrated a stronger inclination and positive response towards learning materials presented visually, such as diagrams, charts, or images.

The auditory learning style received the second-highest composite mean score of 2.63 with a descriptive interpretation of "Often". This suggested that students also displayed a preference for learning through auditory stimuli, such as listening to lectures, discussions, or audio recordings. While not as prominent as visual learning, the auditory learning style still held a notable position in terms of overall student preferences and perceived effectiveness.

On the other hand, the tactile learning style obtained the third-highest composite mean score of 2.54. This implied that students leaned towards a preference for learning through tactile or hands-on experiences. The tactile learning style involves physically interacting with objects or materials to enhance understanding and retention. While it received a lower composite mean score, it is still a recognized learning style among a subset of the students.

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Generally, learning styles are very important, in which students can study with their different learning styles as it concedes a composite mean of 2.63 where students employed it often. Students often utilize visual, auditory, and tactile learning styles due to the principle of multiple intelligences theory, which suggests that individuals have different strengths and preferences when it comes to learning and processing information. According to this theory, proposed by Howard Gardner, there are multiple intelligences or ways in which individuals can excel. These intelligences include visual-spatial intelligence (related to visual learning), musical intelligence (related to auditory learning), and bodily-kinesthetic intelligence (related to tactile learning), among others.

By acknowledging the principle of multiple intelligences, educators recognize that students have diverse learning needs and preferences (Sanchez, 2020a; Sanchez, 2023b). Some students may have a stronger inclination towards visual learning, where they learn best through visual aids such as diagrams, graphs, and posters. Others may excel in auditory learning, where they prefer listening to lectures, audio recordings, or engaging in discussions. Additionally, students with a preference for tactile learning benefit from hands-on activities, manipulating objects, and creating things (Sanchez & Sarmiento, 2020). Therefore, students often utilize visual, auditory, and tactile styles in learning to align with their preferred intelligences and optimize their learning experiences.

Similarly, on the study conducted by Puspaningtyas and Marchamah (2020), using animated videos as a teaching tool for Business Mathematics can improve student learning outcomes by enhancing academic performance and comprehension. Animated videos as part of visual learning style have been found to be effective in facilitating understanding and learning of Business Mathematics concepts among students. Furthermore, when visually presented with English terms, the children demonstrated a 77% recall rate, whereas they retained 50% of the English equivalents of those terms (Yilmaz, Topu, & Takkaç Tulgar 2022).

Table 2 showed the respondents' general average grades describing their academic performance.

Table 2. Students' Grade (n=60)

Grade Interval	Descriptors	Frequency	Percentage	Rank
90-100	Outstanding	46	76.67	1
85-89	Very Satisfactory	14	23.33	2
80-84	Satisfactory	0	0	3
75-79	Fairly Satisfactory	0	0	3
Below 75	Did not meet the expectation	0	0	3
Total		60	100%	
Average		89.9		
Descriptive Interpretation		**Very Satisfactory**		

The findings indicated that among the 60 students in the study, a significant majority of 46 students (76.67% of the total) achieved an average grade falling within the range of 90-100. This grade range is interpreted as "Outstanding," suggesting that these students performed exceptionally well in their academic assessments. Additionally, 14 students (23.33% of the total) obtained grades within the range of 85-89, which is interpreted as "very satisfactory." While not reaching the "Outstanding" level, these students still demonstrated a commendable level of performance.

These results suggested that the majority of the respondents applied their own learning styles in studying and effectively utilized them to excel in their academic performance. It implied that students in the study implemented their preferred methods of learning, such as visual, auditory, or tactile strategies, to enhance their understanding and retention of the subject matter. This also highlighted the positive correlation between applying suitable learning styles and achieving higher academic performance. It reinforced the notion that students who align their studying techniques with their preferred learning styles are more likely to excel in their educational pursuits.

Accordingly, student performance is determined by a wide range of variables that extend beyond the assessment method. These factors include emotional attention, motivational self-efficacy, prior academic performance, student motivation, goal-directed learning strategies, and teaching style and practices such as the use of feedback (Maya, Luesia, & Pérez-Padilla, 2021; Sanchez, Sanchez & Sanchez, 2023).

Table 3 presented the correlational analysis between different learning styles (visual, auditory, and tactile) and the academic performance of the students.

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Table 3. Correlational analysis between different learning styles and students' academic performance (n=60)

IV: Students' Learning Style	DV: Academic Performance		
	r-value	*p-value*	*Interpretation*
1. Visual	0.236	0.070	Insignificant
2. Auditory	0.100	0.446	Insignificant
3. Tactile	0.226	0.082	Insignificant

df = 58; Level of Significance = 0.05

As indicated in the table, it can be seen that the correlation coefficient (r) between Visual learning style and Academic Performance is 0.236, suggesting a positive but weak correlation between the said variables. However, the p-value of 0.070 indicates that this correlation is not statistically significant at a 0.05 level of significance. Therefore, the relationship between visual learning style and academic performance is considered insignificant. While there seems to be a weak positive trend between visual learning style and academic performance, the results suggest that visual learning style alone may not be a strong predictor of academic success. Other factors, such as study habits, motivation, or instructional methods, may play more significant roles in determining academic performance. Similarly, none of the visual and multimodal learning approaches showed a significant impact on the academic performance of students with different achievement levels (poor, average, and high achievers) when compared to their university scores. Contrastingly, in clinical classes, the choice of learning style had a notable influence on academic achievements (Chaudhry et al., 2020).

On the other hand, the correlation coefficient (r) of 0.100 between Auditory learning style and Academic Performance also indicates a very weak positive correlation between the variables. Furthermore, the p-value of 0.446 suggests that this correlation is not statistically significant at a 0.05 level of significance. The results imply that there is little evidence to support a significant relationship between auditory learning style and academic performance. It suggests that relying solely on auditory learning strategies may not be sufficient to guarantee better academic outcomes. Other factors, such as individual learning preferences or instructional approaches, may have a more substantial impact on academic success. In general, tailoring instruction to match a student's auditory learning style did not result in any impact on student achievement. Therefore, it is unnecessary for teachers and schools to allocate time and resources towards instruction based on learning styles (Rogowsky et al., 2020).

Finally, the correlation between Tactile learning style and Academic Performance divulged a correlation coefficient (r) of 0.226, implying a weak positive correlation between the said variables. However, with a p-value of 0.082, the statistical significance of this correlation falls just short of the conventional threshold. Therefore, similar to the previous cases, the relationship between tactile learning style and academic performance is considered insignificant. The results indicate a potential association between tactile learning style and academic performance, but it does not reach statistical significance. This implies that the observed correlation could be due to random chance rather than a genuine relationship. Additional research with a larger sample size or different methodologies may be needed to confirm or refute this potential relationship. Likewise, during the investigation of English III students' learning styles and their correlation with academic performance, it was found that tactile learners had the lowest pass rate for the course. Nevertheless, the test results demonstrated that there was no significant variation in the students' grades based on their learning styles (Brahmakasikara, 2013).

Table 4 presented the analysis of the Significant relationship between the learning styles of the students and academic performance.

Table 4. Significant relationship between the learning styles of the students and academic performance (n=60)

N	Learning Styles X	Academic Performance Y	X^2	Y^2	XY
SUM	162.00	5486.00	442.30	502006.00	14817.20

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MEAN	2.70	91.43			

Computed r =	0.113
p-value =	0.392
Critical value =	0.254
df =	58
Level of Significance =	0.05
Result :	**Accept Ho**
Remarks :	**Insignificant**

Based on the computed correlation coefficient (r) of 0.113, which is lower than the critical value of 0.254 at a significance level of 0.05 with 58 degrees of freedom, the null hypothesis of the study is accepted. This means that there is no significant relationship between the learning styles of the students and their academic performance. The result suggested that the observed correlation between learning styles and academic performance was not strong enough to be considered statistically significant. In other words, the data did not provide sufficient evidence to conclude that there is a meaningful or substantial relationship between the two variables.

The insignificant result indicated that factors other than learning styles might have a more substantial impact on students' academic performance. It suggested that factors such as study habits, motivation, teaching methods, or external influences may play a more prominent role in determining academic achievements. While the data did not show a significant relationship between learning styles and academic performance, it is important to recognize that individual variations in learning preferences may still exist. The statistical analysis conducted in the study did not provide enough evidence to establish a strong and significant connection between learning styles and academic performance within the given sample.

Similarly, in the study conducted by Karatas & Yalin (2021), it demonstrated that students' performance results did not differ considerably based on their learning methods thus, there is no significant change in students' achievement scores based on their learning styles.

Table 4.1 and Table 4.2 presented the significant variance among the six (6) strands on the learning styles of the students.

Table 4.1 Significant Variance among the six (6) strands on the learning styles of the students (n=60)

Groups	N	Sum of x or Σx	Sum of x Squared or (Σx)²	Sum of squares or SS	Variance	Mean x
GAS	10	910	828100.00	68.000	7.556	91.000
HE	10	909	826281.00	50.900	5.656	90.900
AFA	10	925	855625.00	74.500	8.278	92.500
ICT	10	923	851929.00	22.100	2.456	92.300
EIM	10	914	835396.00	52.400	5.822	91.400
EPAS	10	905	819025.00	102.500	11.389	90.500
Total	60	5486	5016356	370.4	41.156	

Table 4.2 Analysis of Variance Table

Source of Variation	SS	Df	MS	F	P-value	Critical Value at 0.05
Between Groups	32.333	5	6.467	0.943	0.461	2.386
Within Groups	370.4	54	6.859			

Total	402.733	59			
			Result:	**Accept Ho**	
			Remarks:	**Not Significant**	

It was found out that the computed F value of 0.943 is lesser than the critical value of 2.386 using 0.05 level of significance at 5 and 54 degrees of freedom, thus the null hypothesis of the study is accepted which means that there is no significant variance among the six (6) strands on the learning styles of the students. Furthermore, this implied that the choice of strand or academic track did not appear to have a significant impact on the learning styles of the students in the given sample. Other factors, such as individual preferences, teaching methods, or external influences, may have a more prominent role in shaping learning styles than the specific strand chosen.

Conclusions

This study concluded that students at Dagohoy National High School have different learning preferences, but this factor does not have a significant impact on their academic achievements if they are motivated to study and work towards achieving their desired grades. Since there is no significant relationship between the learning styles of the students and academic performance, the grades of respondents could potentially be influenced by factors beyond their learning styles. Additionally, the learning styles of the students across the six strands do not exhibit a significant variation, thus, the respondents from all strands displayed a similar learning style.

Recommendations
1. Teachers should strive to incorporate a variety of instructional methods that cater to different learning styles, allowing students to engage with material through visual aids, auditory presentations, and hands-on activities. By embracing a multimodal approach, teachers can create a more inclusive and effective learning environment that caters to the diverse needs and preferences of students. This can enhance student engagement, understanding, and overall learning outcomes.
2. Students would be to remain dedicated, recognize the value of their achievements, set high goals, and continuously strive for improvement by staying organized, managing time effectively, seeking challenges, and seeking guidance when needed. By maintaining focus and drive, they can excel academically and achieve greater success in their educational journey.
3. To ensure equal academic opportunities for all students, school administrators should maintain offering professional development to teachers, enhancing their understanding of diverse learning styles and effective strategies to address them. This fosters an environment that supports adaptable teaching practices and accommodates students' various preferences.
4. Future researchers may conduct further study regarding students' achievement based on teachers' teaching styles and students' learning styles.

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