

Assessing the Learning Style of Senior High School TVL Students Using the Grasha Riechmann Model

Mikaella S. Quinazo¹, Mickie Jhesney Guma², Jaymar D. Cervantes³, Anton C. Aparente⁴, Allyza D. Ramirez⁵, Lance G. Toldo⁶, Marian G. Buo⁷, Oscar S. Recto, Jr⁸

¹⁻⁷Senior High School Students, Dapa National High School, Dapa, Surigao del Norte, Philippines

⁸Teacher, Dapa National High School, Dapa, Surigao del Norte, Philippines

DOI: <https://doi.org/10.47772/IJRISS.2025.91100535>

Received: 07 December 2025; Accepted: 13 December 2025; Published: 22 December 2025

ABSTRACT

Understanding the learning styles of Technical-Vocational-Livelihood (TVL) students is essential for aligning instruction with how learners process academic and practical tasks. This study utilized a quantitative-descriptive design and the Grasha–Riechmann Student Learning Styles Scale (GRSLSS) to assess the learning preferences of 213 Grade 11 and 12 TVL students selected through stratified sampling, with analysis based on frequency, percentage, mean, and standard deviation. Results showed that the Collaborative learning style was the dominant preference in both grade levels, recording the highest frequencies in Grade 11 (31) and Grade 12 (34) compared with other styles, followed by Participative (Grade 11 = 28) and Independent (Grade 11 = 21; Grade 12 = 23) styles. Across strands, Collaborative was also consistently highest, appearing as the top style in multiple groups such as FCS 1A (5), FCS 1B (5), FCS 2A (7), FCS 2B (3), ICT (2), IA 2 (5), HE 1 (13), HE 2 (8), and EIM (8). In contrast, Avoidant showed the lowest presence across strands, registering 0 in several groups (e.g., FCS 1A, FCS 2B, IA 2) and minimal frequencies elsewhere. These findings indicate that TVL learners prefer group work, peer interaction, and shared problem-solving. Thus, the study concludes that instructional strategies should emphasize collaborative and participatory approaches that align with the dominant learning style patterns across grade levels and strands.

Keywords: Learning Styles, TVL Students, Grasha–Riechmann Model, Collaborative Learning, Quantitative-Descriptive Research

INTRODUCTION

Understanding student's learning styles is essential in the Technical-Vocational-Livelihood (TVL) strand, where learners must balance theoretical knowledge with hands-on skills. Learning styles shape how students absorb and process information, interact with peers, and respond to instruction. When teaching aligns with these preferences, students show greater engagement and improved performance when it does not, learning gaps and reduced confidence may occur. The Grasha–Riechmann Student Learning Style Model offers a useful framework for assessing these differences, as it emphasizes how learners behave and interact in classroom settings. It identifies six styles independent, dependent, collaborative, competitive, participant, and avoidant which reflect varying levels of autonomy, social engagement, and motivation. Applying this model to TVL students helps educators understand their learning patterns and design instruction that supports both conceptual understanding and practical skill development, ultimately promoting a more effective and responsive learning environment.

REVIEW OF LITERATURE

Learning Styles and the Grasha–Riechmann Model

Learning styles describe the consistent ways individuals process and engage with information, shaping how they approach tasks, solve problems, and respond to instructional environments (Aslaksen & Lorås, 2018). Various frameworks exist including Kolb's Experiential Learning Model, VARK, and Gardner's multiple intelligences

but the Grasha–Riechmann Student Learning Styles Model (GRSLSS) is distinct for emphasizing classroom social interaction patterns (Childs-Kean et al., 2020). The GRSLSS identifies six styles: independent, dependent, competitive, collaborative, avoidant, and participant. Independent learners prefer autonomy, while dependent learners rely on structured guidance. Competitive learners focus on outperforming peers, whereas collaborative learners value teamwork and shared problem-solving. Avoidant learners show low engagement, and participant learners actively involve themselves in class activities. Integrating GRSLSS with cognitive-based models like VARK can strengthen team-based learning by addressing both social behaviors and learning preferences (Khamphaya et al., 2022). Research indicates that identifying students' GRSLSS profiles can help teachers design instruction that improves engagement and comprehension by aligning classroom activities with learners' tendencies (Akin et al., 2025). The model also aids in planning balanced group work and supporting diverse participation. However, scholars caution against rigidly matching instruction to perceived learning styles. Overreliance on such models can lead to oversimplification, and evidence-based teaching strategies should still guide practice (Clinton-Lisell & Litzinger, 2024). When applied flexibly, the Grasha–Riechmann model offers valuable insight into student behavior while supporting broader pedagogical goals.

Learning Styles of Senior High School Students in the Philippine Context

Studies on Filipino TVL and skills-based learners consistently show strong preferences for visual and kinesthetic learning, highlighting the importance of demonstrations, hands-on tasks, and practical training. Bartolome (2023) found that TVL Cookery students learn most effectively through blended instruction that combines face-to-face teaching, multimedia tools, and step-by-step demonstrations an approach that strengthens both competence and confidence. Similarly, Gaviola-Delos Angeles (2020) reported that vocational learners commonly favor individual work, written expression, sequential learning, and bodily-kinesthetic activities, with gender differences showing females leaning toward kinesthetic and independent work, while males tend toward visual-auditory and group learning. Other research further emphasizes the value of practical learning environments. Alarcon et al. (2024) note that workshops, facilities, and industry-based training are central to effective TVL instruction. Socioeconomic influences also shape learning behaviors; Chmielewski (2019) demonstrated that students from lower-SES backgrounds face persistent achievement gaps due to limited resources and support. Gender and age likewise affect learning styles. Corbin (2017) found that females often prefer dependent, participant, and collaborative approaches, while males show more independent tendencies, with older students displaying greater self-regulation. In the Philippine setting, Magulod (2019) similarly observed that visual, group, and kinesthetic preferences correlate with higher academic performance, and that family background and study habits significantly influence these learning patterns.

Instructional Approaches and Learning Style Alignment in TVL Education

Research consistently shows that aligning teaching methods with the dominant learning styles of TVL students particularly kinesthetic, visual, and auditory significantly improves engagement and skill mastery. Toth (2012) emphasizes that vocational learners thrive through hands-on practice, demonstrations, and guided discussions, while studies in the Philippines likewise highlight the importance of practical, experiential learning. Bernas and Andal (2023) found that project-based, competency-based, and work-based approaches effectively strengthen technical skills and industry readiness, while Limpiado (2024) demonstrated that customized, TESDA-aligned learning materials enhance mastery of Food and Beverage competencies and improve certification readiness. Both local and international evidence highlight the consequences of mismatched instruction. Letele et al. (2013) observed that when teaching strategies do not align with students' preferred learning styles, motivation, participation, and performance decline especially in resource-limited contexts. Abdullah et al. (2024) further emphasize that assessing learning styles enables educators to design personalized instruction and fair assessments, fostering deeper engagement and more effective skills acquisition. Overall, the literature underscores that responsive, well-aligned instructional strategies are essential to maximizing learning outcomes in the TVL track.

Theoretical Framework

This study is anchored on the Grasha-Riechmann Learning Style Theory (1996), which views learning styles as patterns of social and behavioral interaction rather than purely cognitive preferences. The model identifies six

learning styles independent, dependent, collaborative, competitive, participant, and avoidant each reflecting different levels of autonomy, motivation, and engagement in classroom tasks. These styles highlight how students respond to instruction based not only on how they process information, but also on how they interact with peers, teachers, and learning environments. The theory is particularly relevant to the Technical-Vocational-Livelihood (TVL) strand, where learning requires both individual skill performance and collaborative, hands-on work. Understanding these varied learning styles helps educators design instruction that matches the practical and social nature of TVL education. By examining students' style preferences across grade levels and strands, this study aims to inform more responsive and student-centered teaching approaches, ensuring that instructional strategies align with learner diversity and support improved performance in technical-vocational contexts.

Research Gaps

Although learning styles have been studied in various contexts, research on TVL students using the Grasha–Riechmann model remains limited particularly in understanding their specific learning style patterns, several gaps remain:

Few studies focus on TVL students using the Grasha–Riechmann model-most researchers use VARK or Kolb, so there is not enough evidence on how TVL students learn based on the six GRSLSS styles (Independent, Dependent, Collaborative, Competitive, Participative, Avoidant).

Lack of research in Philippine Senior High Schools, especially TVL tracks.-many studies are done in colleges or foreign schools, leaving a gap in understanding the learning styles of Filipino TVL learners in public SHS.

Research Objectives

The present study was conducted with the following objectives:

1. To identify the most dominant learning styles among Grade 11 and 12 TVL students in Dapa National High School, School Year 2025-2026.
2. To determine the most dominant learning styles among strands in Dapa National High School TVL students.
3. To recommend instructional strategies aligned with the dominant learning styles identified.

RESEARCH METHODOLOGY

Research Design

This study adopts a quantitative-descriptive design to assess the learning style of senior high school TVL students using Grasha Riechmann Model.

Sampling

The target population comprised 455 TVL Senior High School (SHS) students at Dapa National High School, consisting of 251 Grade 11 students and 204 Grade 12 students. A stratified random sampling technique was employed to ensure proportional representation of both grade levels. Using Slovin's formula with a 5% margin of error, the final sample consisted of 213 respondents, with 118 from Grade 11 and 95 from Grade 12, reflecting the characteristics of the target population.

Data Collection

Data were collected using a structured questionnaire adopted from the Grasha-Reichmann Student Learning Styles Scale (GRSLSS) divided into two main parts: (a) respondents' demographic information and (b) contains 60 statements categorized into six learning style dimensions such as independent, dependent, collaborative, competitive, avoidant, and participative with ten items for each category.

Data Analysis Tools

Individual counting were used to obtain the frequency of each learning style as answered by the TVL students. Each response in the GRSLS questionnaire was counted one by one and grouped according to the corresponding learning style category—Independent, Avoidant, Collaborative, Dependent, Competitive, and Participative. After counting, the total frequency for each learning style per strand and grade level was determined. These frequencies allowed the researchers to clearly see which learning style appeared the most and the least, making it possible to identify the dominant learning style among Grade 11 and Grade 12 TVL students. Using individual counting ensured accuracy because every response was accounted for, and it provided a straightforward way to compare learning style patterns across strands and grade levels.

Frequency analysis

Frequency statistics summarize the central tendency and variability of responses, providing insight into the extent of which independent, avoidant, collaborative, dependent, competitive, and participative are manifested.

Grade 11	Frequency	Grade 12	Frequency
Independent	21	Independent	23
Avoidant	8	Avoidant	6
Collaborative	31	Collaborative	34
Dependent	19	Dependent	14
Competitive	11	Competitive	8
Participative	28	Participative	10
Total	118	Total	95

Interpretation

The results show that Collaborative learning styles are the most dominant among both Grade 11 and Grade 12 TVL students. In Grade 11, the highest frequency is seen in the Collaborative style (31), followed by Participative (28) and Independent (21). This suggests that Grade 11 learners prefer working with peers, engaging actively in group tasks, and participating in class activities patterns that align well with the hands-on, workshop-based nature of the TVL curriculum. Grade 12 students exhibit a similar tendency, with Collaborative (34) and Independent (23) being the most prevalent. The steady presence of the Independent style across both grade levels indicates that many learners are also comfortable accomplishing technical tasks on their own, demonstrating autonomy and self-direction, which are essential for skill mastery in vocational settings.

This table present the Grade 11 TVL student highest dominant learning style.

Learning Style	FCS 1A	FCS 1B	FCS 2A	FCS 2B	ICT	IA	IA 2
Independent	3	6	3	2	1	3	3
Avoidant	0	3	2	0	1	2	0
Collaborative	5	5	7	3	2	4	5
Dependent	3	1	1	6	5	1	2
Competitive	3	0	0	4	2	0	2

Participative	3	2	4	2	6	6	5
Total	17	17	17	17	17	16	17

This table present the Grade 12 TVL student highest dominant learning style.

Learning Style	HE 1	HE 2	HE 3	EIM	CSS
Independent	3	3	6	3	8
Avoidant	1	1	2	1	1
Collaborative	13	8	5	8	0
Dependent	1	3	1	5	4
Competitive	1	1	1	1	4
Participative	0	3	4	1	2
Total	19	19	19	19	19

Interpretation:

The results show that Collaborative learning style is the highest dominant learning style among both Grade 11 and Grade 12 TVL students of Dapa National High School. For Grade 11, Collaborative consistently appears as the strongest style across strands, with the highest frequencies in FCS 2A (7), IA 2 (5), FCS 1A (5), and FCS 1B (5), indicating that students prefer working with peers, sharing ideas, and engaging in group-based activities. Participative also shows strong presence, especially in ICT and IA (both 6), suggesting that many learners like actively joining discussions. In contrast, Avoidant records the lowest totals, with several strands showing zero. For Grade 12, Collaborative remains the most dominant style, with very high frequencies in HE 1 (13), HE 2 (8), and EIM (8), showing that senior TVL learners also favor cooperative learning environments. Independent and Participative styles are moderately present, while Avoidant and Competitive remain the least preferred. Overall, the results indicate that both Grade 11 and Grade 12 TVL students learn best through interaction, teamwork, and shared problem-solving, highlighting the importance of collaborative and participatory teaching strategies in TVL classrooms.

DISCUSSION

The findings show that collaborative is the highest learning style among Grade 11 and 12 TVL student of Dapa National High School. This suggests that learners in the TVL strand perform best when working with peers, sharing tasks, and participating in group-based, hands-on activities an outcome strongly aligned with the practical, workshop-oriented nature of vocational education. Collaborative learners tend to seek shared problem-solving and continuous interaction, making them highly responsive to technical tasks that require coordination and teamwork. This dominance reinforces the need for instruction that integrates cooperative learning, guided demonstrations, and peer-supported skill application to maximize engagement and performance in TVL programs.

CONCLUSION

This study concludes that collaborative learning style is the most dominant among Grade 11 and 12 TVL student of Dapa National High School. This suggests that TVL learners thrive in environments where cooperation, discussion, and teamwork are emphasized, allowing them to understand lessons more effectively through shared problem-solving and interaction. Overall, the data highlights the importance of integrating more group-centered strategies in classroom instruction. Since collaborative learning promotes active participation, communication, and peer support, teachers can further enhance student engagement by designing tasks that require cooperation

and collective decision-making. Strengthening these approaches not only aligns with the students dominant learning preference but also fosters essential skills such as teamwork and social interaction skills that are valuable both in academic settings and future workplace environments.

RECOMMENDATIONS

1. Adopt teaching methods that promote collaborative and participatory learning, such as project-based learning, group workshops, and peer mentoring. These approaches align with the dominant learning styles of TVL students and enhance both engagement and retention.
2. Provide professional development programs focused on differentiated instruction and learning style assessment to equip teachers with strategies for addressing varied student preferences.
3. Be aware of personal learning preferences and take an active role in class participation, teamwork, and independent practice to maximize skill acquisition.
4. Integrate activity-based and experiential learning components in the TVL curriculum to reinforce the practical and cooperative nature of the strand.
5. Conduct further studies correlating learning styles with academic performance and practical competencies to develop evidence-based instructional frameworks for technical-vocational education.

REFERENCES

1. Abdullah, G., Arifin, et al. (2024). Assessing the influence of learning styles, instructional strategies, and assessment methods on student engagement in college-level science courses.
2. Akhentoolove, C. (2017). Assessing differences in learning styles: Age, gender and academic performance at the tertiary level in the Caribbean. *Journal of Educational Research*.
3. Akin, E. S., Çilga, G., Gunduz, D. I., & Muratoğlu, M. (2025). Investigation of the relationship between learning preferences and information acquisition and processing processes of physiotherapy and rehabilitation department students
4. Alarcon, et al. (2024). Assessing the effectiveness of the technical vocational livelihood education in terms of implementation and learning environment. *International Journal of Recent Technology and Engineering*, 8(2S11), 471–476.
5. Aslaksen, K., & Lorås, H. (2018). The modality-specific learning style hypothesis: A mini-review.
6. Bachtiar, A. H. (2024). The impact of collaborative strategic reading and cognitive style on students' reading comprehension in senior high school. *Jurnal Pedagogi dan Pembelajaran*, 7(3), 381–392.
7. Baihaqi, B. H., Maryono, D., & Wardani, D. E. (2023). Analysis of learning styles in vocational education in Grade 12 students at SMK Negeri in Surakarta. *Journal of Informatics and Vocational Education*, 6(1), 1–9.
8. Bartolome, S. (2023). Preferred learning styles of technical-vocational and livelihood (TVL) students in public senior high school in Sta. Rosa Laguna.
9. Bernas, R. F., & Andal, E. Z. (n.d.). Project-based learning approach, productive competence, and learning engagement of the Bachelor of Technical-Vocational Teacher Education (BTVTED) students.
10. Cassidy, S. (2004). Learning styles: An overview of theories, models, and measures. *Educational Psychology*, 24(4), 419–444.
11. Childs-Kean, L., Edwards, M., & Smith, M. D. (2020). Use of learning style frameworks in health science education.
12. Chmielewski, A. K. (2019). The global increase in the socioeconomic achievement gap, 1964 to 2015. *Sociology of Education*, 92(3), 207–238.
13. Clinton-Lisell, V., & Litzinger, C. (2024). Is it really a neuromyth? A meta-analysis of the learning styles matching hypothesis.
14. Felder, R. M., & Silverman, L. K. (1988). Learning and teaching styles in engineering education. *Engineering Education*, 78(7), 674–681.

15. Gaviola-Delos Angeles. (2020). Learning style and preferences of students in skills-based courses.
16. Grasha, A. F., & Riechmann, S. W. (1974). A rational approach to developing and assessing the construct validity of a student learning style scales instrument. *Journal of Psychology: Interdisciplinary and Applied*, 87(2), 213–223.
17. Grasha, A. F., & Riechmann, S. W. (n.d.). Student Learning Styles Scales – Grasha-Reichmann.
18. Grasha, A. F., & Richmann, A. L. (2023). College students' learning styles of classroom participation: Role of gender and major. *Learning and Individual Differences*, 94, 102–110.
19. Guardaquiber, I. P. (2019). Learning styles and the class participation rate of Grade 11 students in General Mathematics. *Ascendens Asia Journal of Multidisciplinary Research Abstracts*, 3(2F), 1–6.*
20. Hamidah, J. S., Sarina, M. N., & Jusoff, K. (2009). The social interaction learning styles of science and social science students. *Asian Social Science*, 5(7), 58–64.
21. Handoyo, S., Iriani, T., & Septiandini, E. (2019). Study of the analysis on the characteristics of learning style of the students of the vocational education of building construction study program, Faculty of Engineering, Jakarta State University. *KnE Social Sciences*
22. Johnson, D. W., & Johnson, R. T. (2019). Cooperative learning: The foundation for active learning. *Educational Psychology Review*.
23. Khamphaya, T., Pouyfung, P., & Yimthiang, S. (2022). Enhancing toxicology achievement by the VARK and the GRSLS-mixed models in team-based learning.
24. Lago, F. E. (2021). The learning modalities of senior high school students in a vocational and industrial school and its relation to communication skills. *International Journal of Arts, Sciences and Education*, 1(2), 181–197.*
25. Letele, M. J., Alexander, G., & Swanepoel, Z. I. (2013). Matching/mismatching of teaching and learning styles in rural learning ecologies of Lesotho: Does it enhance academic achievement? *Journal of Human Ecology*, 41(3), 263–273.*
26. Limpiado, M. (2024). Crafting success: Enhancing SHS TVL students' performance in food and beverage services through customized learning activity sheets (CLASs) for TESDA's NCII assessment. *The Educators' Link*, 1(6).*
27. Magulod, G. C., Jr. (2019). Learning styles, study habits and academic performance of Filipino university students in applied science courses: Implications for instruction. *Journal of Technology and Science Education*, 9(2), 184–198
28. Magulod, G. C., Jr. (2020). Learning styles, study habits and academic performance of Filipino university students in applied science courses: Implications for instruction. *Journal of Research in Education and Learning*.
29. Magulod, G. C., Jr. (2022). Learning styles, study habits, and academic performance of Filipino university students in applied science courses: Implications for instruction. *Journal of Technology and Science Education*, 12(2), 181–197.
30. Nobleta, A. F. (2020). Learning style preferences and academic performance in speech and oral communication of college students. *CAPSU Research Journal*, 4(1), 1–9.*
31. Peter, T. (2012). Importance of aligning teaching strategies with students' learning style in vocational education. Retrieved from <https://scholar.google.com>
32. Saleem, Z., Hussain, A., & Shah, F. (2021). Gender differences in VAK learning style model and academic performance. *The Dialogue*, 16(2), 334–344.*
33. Slavin, R. E. (2020). *Educational psychology: Theory and practice* (12th ed.). Pearson.
34. Tripathi, P., & Kumar, S. (2025). The impact of learning styles on academic performance in adolescent students. *i-manager's Journal on Educational Psychology*, 18(3), 50–59.
35. Zenakou, E., Liberi, I., Koutrouba, K., & Antonopoulou, K. (2023). Sensory learning styles & emotional intelligence in adolescents. In *ICERI2023 Proceedings* (pp. 4916–4923).