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LEARNING STYLES IN RELATION TO ACADEMIC PERFORMANCE OF BTVTED STUDENTS

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Abstract

The study is descriptive-correlational research which aims to determine the significant relationships between students' learning styles and their academic performance. The study focuses on the learning styles of the first year BTVTRD students who are officially enrolled during the first semester of the school year 2019 – 2020. A survey is utilized in the collection of data while in its statistical analysis the Person Correlation Coefficient was employed. The results revealed that, on learning styles, diverse characteristics define the nature of learners in the BTVTED program. Their learning styles encompass physical, cognitive, affective, and physiological elements that influence learning. On academic performance, majority of the BTVTED students are classified above average. Applying the parametric test using Pearson Product – Moment Correlation, the study concludes that there is a significant relationship between students' learning styles and their academic performance on the physical, cognitive, and physiological elements of learning. However, on its affective aspect, the contrary hypothesis is proved. Overall, the study finds the need for specific actions that will address the issue on pedagogical strategies employed in teaching the curriculum, approaches in the delivery of instructional content, monitoring, evaluation, and adjustments of key issues in the teaching and learning, institutional program to help students in difficult circumstances, and other studies that will help the college improve its quality education and services.

Keywords :Learning styles and Academic Performance

INTRODUCTION

Learning styles are specific patterns of educational practices utilized in processing information, mastering competencies, producing outputs, and achieving outcomes for the purpose of learning. Learning styles are therefore relevant to the learners' needs, interests, and abilities as they thrive along the multiplicity of challenges in the acquisition of desirable knowledge, skills, and attitudes towards the completion of academic goals.

Many people recognize that each person prefers different learning styles and techniques. Learning styles group common ways that people learn. Everyone has a mix of learning styles. Some people may find that they have a dominant style of learning, with far less use of the other styles. Others may find that they use different styles in different circumstances. There is no right mix of learning styles nor are learning styles fixed. One can develop the ability in less dominant styles, as well as further develop styles that are already used well.

Nowadays, the concept of learning styles has become a popular topic in recent literature, with many theories about learning styles put forward to better understand the dynamic process of learning [1]. This is caused by the ever-changing landscape of global education which has become more learner-centered, more relevant to the needs and challenges of the contemporary global society, and more inclusive. Hence, more research initiatives should be done to streamline appropriate learning activities for the modern-day learners that would make bigger impacts in their lives; after all, the learners are the centerpiece of the teaching and learning process, a universal principal that cuts across educational systems. This principle was highlighted in the study of Carague [2] which states that the greatness of the Philippines and its people has always been proportionate to the investment of education and the broadening of the intellectual pursuits of their population. She also emphasized that education should be made available for all as a matter of constitutional rights (Article IV Section 1 of the 1987 Philippine Constitution). Thus, in Philippine education, the learners are at the center of any educative process. Similarly, Alamgir [3] shares the same principle by saying that the learners should be the major focus in any educational system and policy and that they should be picked up easily, captivated comfortably and satisfied perfectly.

However, in today's diverse classroom environment, learning styles vary from learner to learner. In fact, the assumption of the number of learning styles per class is already associated to the number of officially enrolled learners in the same class. Therefore, if there are 40 students per class, there could also be at least 40 observable learning styles per classroom setting. This is due to the diverse nature of learners upon consideration of their needs, interests, abilities, capabilities, difficulties, circumstances and challenges; along with geographical, social, economic, and cultural positioning. It can be noted that *Howard Gardner's Theory of Multiple Intelligences* explains this assumption. According to Gardner [4], there are at least 8 intelligences in which learners are endowed with, such as: visual-spatial, linguistic-verbal, interpersonal, intrapersonal, logical-mathematical, musical, bodily-kinesthetic, and naturalistic, and a possible 9^{th} intelligence which he named existential or existentialist.

Many people recognize that each person prefers different learning styles and techniques. Learning styles group common ways that people learn. Everyone has a mix of learning styles. Some people may find that they have a dominant style of learning, with far less use of the other styles. Others may find that they use different styles in different

circumstances. There is no right mix, nor are learning styles fixed. In fact, learning styles adapt to a lot of factors; physical, emotional, intellectual, and physiological aside from other factors that results from the interplay between the learners and their environment.

Students who understand their own learning preferences can utilize their strengths, tactics or tricks to fascinate learning and make it more productive or exciting which in turn stimulates the students' curiosity and enthusiasm to learn more. This manifests that learning style is what engines the desire of learners to learn; it does not have anything to do with how intelligent you are and what skills you possess.

Students preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning and generalizing, and analyzing and visualizing. In the same manner, teachers vary their teaching approaches and methodologies based on the learners' ability to cope with instructional content and pedagogy. Hence, a number of instructors utilize lecture method to address students learning believing that it is among the available methodologies that could respond to the diverse attributes of their learners; others demonstrate or lead students to self-discovery, some focus on principles and its practical application to different circumstances, and a huge number emphasize on memory enhancement and skills development and mastery. However, these approaches do not work right when teachers are not fully aware of the characteristics and learning styles of their learners. Thus, when a mismatch exists between teachers' chosen pedagogies and the learning styles of the students, the achievement of the learning objectives for a specific lesson becomes farfetched. This also results to boredom, inattentiveness, disinterest, discontent, poor performance, and other similar learning gaps between the effectiveness in the delivery of content and the achievement of learning objectives and acquisition of desirable competencies.

In Camarines Sur Polytechnic Colleges, particularly in the College of Education and Arts and Sciences, teachers of Bachelor in Technological Vocational Teacher Education (BTVTED) are faced with similar experience. This is due to the absence of an inventory of students' learning styles that will provide teachers with essential database to vary their teaching strategies. In fact, most teachers utilize lecture and recitation methods in the development of learning competencies and some employ reporting method to expose learners to the actual teaching process. Though these techniques are found to be effective in most cases, there are still clamors for more meaningful classroom experiences among the

BTVTED students; considering that they are expected to be in the same profession after the completion of their undergraduate program.

These conventional methodologies have resulted to some notable observations, such as: low test grades, unresponsive or hostile classes, poor attendance, significant number of drop-outs, unproductive teaching and learning environment, and insignificant instructional and learning activities. This condition has led a few students to start questioning their career choices in higher education. They begin to wonder if BTVTED is really the right profession they want to spend their lifetime with. Considering the nobility of the teaching profession and the crucial role played by teachers in the educational experiences of the young, just so, they can be better 'prepared for the challenging task of nation=building, especially in this time of public health emergency as the COVID – 19 continues to threaten peoples' health and safety across territories. Future teachers should be carefully imbued with essential knowledge, skills, and attitudes necessary in treating diverse types of learners; and it should start from having deeper understanding of the various learning styles that they themselves can make use of in designing an appropriate lesson that will matter to the nature of learners they will soon have in the classroom. Hence, the study entitled "**Learning Styles in Relation to Academic Performance of BTVTED Students"** was designed.

Taking into consideration of the rigor and risk of conducting a scholarly work in this trying time, the study contemplates on utilizing its main beneficiaries as its target population, the Bachelor in Technical Vocational Teacher Education. By understanding the variations in their own learning styles, the BTVTED learners can have a better and deeper appreciation of the professional environment that they themselves would live for the rest of their lives. Thus, learners who are not inclined to teaching can still reflect on their career choices and make the necessary decision to redirect their career path toward their desired profession. It must be borne in mind that the society is now losing teachers with the best potential to make teaching and learning interesting, challenging, relevant, and engaging for learners. One reason is that, students of education program are rarely exposed to various pedagogical strategies that address the contemporary learning styles of today's learners. In most instances, teachers who are entrusted for the pre-service training of would be teachers are stuck to the conventionality of the teaching process since they do not have much information about the needs, interests, and learning styles of the trainees under their care. This is the gap the present initiative takes on as its primary target. To overcome this issue, professors should strive for a balance of instructional methods (as opposed to trying to teach each student exclusively according to his

or her preferences). If the balance is achieved, all students will be taught partly in a manner they prefer, which leads to an increased comfort level and willingness to learn, and partly in a less preferred manner, which provides practice and feedback in ways of thinking and solving problems which they may not initially be comfortable with but which they will have to use to be fully effective professionals.

Moreover, learning is not only a function of what a teacher does say or provide a learner; it is also about how the brain works most efficiently to process, comprehend and learn new information and how the educational experiences is structured or presented to accommodate learning preferences. There is no such thing as a "good" or "bad" learning style. We all have our own particular way of learning new information. This learning ability depends on the content and approach to learning task which is affected by educational and socio-cultural background and personal experiences; including students' learning styles. Joseph Perkins [5] revealed that learning is effective according to interest of learner himself. What one need is, however different from that of the others. Parents should have positive attitude toward the development of the learners in the form of assistance, love, care and attention, so as to achieve better work. Learning style, therefore, defines the learner's preferences. Students have their own preferences for individual work or group or activity. Learning style is one output of a student innate uniqueness. Schools should be one of the joyful places in the world because when the students feel secured in the school, they will strive more to learn. Recent studies revealed that: "When teachers develop and expand their instructional method and techniques according to individual learning style of their students, there was a marked increase in performance and achievement and a decrease in discipline problems, students are not failing because of the curriculum, students can learn any subject matter when they taught with methods and approaches responsive to their learning style and strengths and if there is a genuine effort to first understand an individual's needs, the result is trust and rapport leading to higher proficiency and productivity".

The implementation of the K to 12 Basic Education Program in the Philippines underscored the importance of teachers who are versatile and adaptive to the ever-changing needs and challenges of Philippine education under different circumstances. In its policy statement, it lays down the principles it adheres to relative to teaching and learning in DepEd schools and those under its regulatory functions. In the first place, the program envisions a learner-centered, inclusive, developmentally relevant and appropriate curriculum (**RA 10533, Va**) which places the needs and interests of the center of the teaching and learning process.

Second, the program foresees a relevant, responsive and research-based curriculum (**RA 10533, Vb**) which based on learning theories, principles, sound research, and studies in teaching and learning dynamics. Third, the program also calls for a culture sensitive curriculum (**RA 10533, Vc**) which entails respect for diversity in beliefs and practices of the learners. Fourth, the curriculum shall be contextualized and global (**RA 10533, Vd**) which imposes the use of localization and indigenization of learning experiences while making such experiences competitive across the world. Fifth, the curriculum shall use pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative, differentiated, and integrative (**RA 10533, Ve**) which mandates multi-strategies in the teaching and learning processes. [6] These policies are reflected to provide the training ground for teachers concrete guidelines on the kind and quality of educators the country needs in order to achieve the Philippine Development Goal in education which is to ensure inclusive and equitable quality education and promote lifelong learning for all. This is an indication that institutions for learning like CSPC and would be teachers like the BTVTED students must keep track of these mandates to make sure that its curriculum ie relevant and responsive to the needs of the time and its graduates are competent and competitive in the field. Hence, the study recognizes the vitality of understanding the diverse characteristics of its students and makes them critically aware of its significance in having a successful career in the future.

In this study, the researcher's goal is to collect relevant information about the learning styles of BTVTED and determine the degree of relationship between learning styles and academic performance among the first year BTVTED students enrolled for school year 2019-2020. In particular, the study revolves around the following problem statements: 1) What are the learning styles of the first year BTVTED students of Camarines Sur Polytechnic Colleges, along: physical, affective, cognitive, and physiological elements?; 2) What is the level of performance of the first year BTVTED students during the first semester of the academic year 2019 – 2020?; 3) Is there a significant relationship between students' learning styles and academic performance?; and 4) What recommendations can be proposed to address the findings of the study?

The study is conducted in the College of Technical and Vocational Education of CSPC and is designed for the first year BTVTED students of the academic year 2019-2020. The first year BTVTED students are chosen as the research subjects since they are among the college population whose career choices in the teaching profession are not yet secured and may still change over time depending upon the influences surrounding their first year

experience within the college. Two hundred ten (210) officially enrolled students are chosen to participate in the survey. They comprise the total number of population desired by the study, hence, no sampling methodology was employed instead the total enumeration technique was applied. The study is delimited by their status of enrollment during the school year; hence those who are not in good standing, meaning, irregular in attending classes and those who are at risk of dropping out due to non-attendance are deemed excluded to participate in the study. In appreciating the data, only those items with clear entries will be considered, since the respondents identity is not a mandatory requisite of the study. Anyway, the design is confined to describing the frequency and percentage distributions of the responses in order to determine its rank ordering pattern for purpose of analysis and interpretation.

METHODOLOGY

The descriptive survey and correlational design was used in the conduct of the study. The descriptive method is employed in the data collection, analysis anf interpretation while the correlation method in determining the relationships between learning styles and academic performance. A researcher-made questionnaire was utilized as the survey tool in gathering the research data needed to satisfy its problem statements. The research instrument was formulated through personal experiences of teachers and students and was refined through corroboration using available information shopped from different sources after a thorough review was made. After the completion of the pre-requisites of validation, the research instrument underwent a test trial to check its appropriateness, clarity, and sufficiency; then, it was distributed to 210 first year BTVTTED students of Camarines Sur Polytechnic Colleges.

The study used the following statistical tools in the presentation and analysis of the generated data: Frequency count was used to describe the responses of the respondents along the key result indicator; Rank Order was used in determining the sequence standing or the rank orders of the responses, which is first, second, third and so forth; Kendall Coefficient of Concordance was used to determine the significant relationship between students' learning styles when grouped according to their profile; and T-test to determine the significant relationship of the students' learning styles and to their academic performance.

The data was supplemented by an interview to validate specific responses that seems to be ambiguous, indefinite, or unclear due to circumstances beyond the researcher's control.

RESULT/FINDINGS

After the data collection, the responses are sequentially tallied, computed and analyzed using tabular and textual techniques; hence, the results are discussed in the order provided at the problem statement of the study.

The Learning Styles of the First Year BTVTED Students of CSPC

In determining the students' learning styles of the first year BTVTED, the research focuses on four specific elements. These elements are physical element, affective element, cognitive element, and physiological element. The **Physical Element** is composed of factors like; sound, light, temperature, design and setting, and time of the day (see Table 1). In learning, sound may help stimulate interest but can also impair learning progress while light can attract learners' attention if not distract one's focus. On the other hand, temperature can affect the students' comfort and drive towards learning which could result unpredictable performance while design or setting can create impacts on students' well-being and motivation, positively or negatively. Finally, the period in which students are found to be more productive in learning can engine academic accomplishments and achievement. Hence, the following results reveal the respondents' preferences on identified indicators along the aforesaid elements.

Table 1. Learning Styles of the First Year BTVTED Students associated with Physical Element

Physical Element	Number	%	Rank
Sound			
I prefer to study with soft music	92	43.81	1
I study when it is quiet	77	36.67	2
I can work with a little noise	28	13.33	3
I can block our noise when I work or study	12	5.71	4
Noise usually keeps me from concentrating	1	.48	5
Total	**210**	**100**	
Light			
I like to study with lots of lights	122	58.10	1
I like to read outdoors	37	17.62	2
I usually study under a shaded lamp while the rest of the room is dim	28	13.33	3
I like to study when it is dim	22	10.48	4
I study only for a short time if the lights are dim	1	.46	5
Total	**210**	**100**	
Temperature			

I can study productively in a warm accommodation	102	51.00	1
I can study productively in both warm and cold accommodations	58	29.00	2
I can study productively in a cold accommodation	40	20.00	3
Total	**200**	**100**	
Design/Setting			
When I study, I like to seat on floor	88	43.56	1
I like to study in bed	62	30.69	2
When I study, like to seat on a soft chair or couch	38	18.81	3
I work/study best in library	14	6.93	4
Total	**202**	**100**	
Time of the Day			
I finish my task or homework before I go to bed at night	175	84.54	1
When I have homework do, I like to get up early in the morning to do it	32	15.46	2
Total	**207**	**100**	
I can remember things best when I study them			
In the morning	124	60.19	1
After dinner	35	16.99	2
Late at night	22	10.68	3
At lunchtime	14	6.80	4
In the afternoon	10	4.85	5
Before dinner	1	.49	6
Total	**206**	**100**	

As shown in the table, in terms of **sound**, majority of the respondents prefer to study with soft music (Rank 1 with 92 responses or 43.81 % of the 210 respondents), some students prefer to study when it is quite (Rank 2 with 77 responses or 36.67% of the total), a smaller number of students can work with little noise (Rank 3 with 28 responses or 13.33% of the total), a few block noise when working or studying (Rank 4 with 12 responses or 5.71% of the total), and rarely a student is motivated to study with noise around as it stimulates concentration (Rank 5 with 1 response from the total number of respondents with an equivalent percentage of .48 only). This finding articulates the diverse appreciation of sounds while students are engaged in their studies or any productive work. Thus, teachers must be extra cautious in designing lessons that will make sense to the learners. It must be understood that in learning, no "one-size fits all" principle applies. But in classroom setting, there are factors in the environment that are not controlled by the institution due to structural positioning or geographical setting. Nevertheless, variations in the modalities of teaching will help learners appreciate different conditions of the learning environment.

In terms of **light**, data show that a huge number of responses identify students productive learning when the learning area is fully lighted or when lights are on with 122 responses or 58.10% of the respondents who prefer to study with lots of light (Rank 1), 37 responses or 17.62% of the respondents who prefer to read outdoors (Rank 2), and 28 responses or 13.33% of the respondents who prefer to study under a shaded lamp (Rank 3). The rest of the respondents prefer to study with dimmer backgrounds with a total of 33 responses or 10.94% (Ranks 4 and 5). The result shows that learners react differently to the learning environment, particularly with respect to the presence of light. Naturally, learning areas must be equipped with lighting facilities that can aid the teaching and learning process. Lights provide essential support that will strengthen visual functioning which is necessary for learning. Though there are students who are more comfortable with dimmer surroundings, still it cannot be discounted that the delivery of instruction must always be ensured with quality and visibility, whatever is the strategy used in its delivery.

Under **temperature**, it was found out that of the total number of 200 respondents who answered the survey, 102 or 51% can study productively in warm accommodation only (Rank 1), 58 or 29% in both warm and cold accommodations (Rank 2), and 40 or 20% in a cold accommodation only (Rank 3). Based on this result, it can be deduced that majority of the first year BTVTED students find warm classrooms more conducive to learning. Though this does not mean that air-conditioned classrooms are not as convenient as when learners are housed in a well-ventilated learning environment without air-conditioning facility. On this note, CSPC through the academic units must provide learning venues that are equipped with facilities that promote comfort and convenience to students. It must be understood that learners learn best when learning venues are at an ideal room temperature other than well-structured, well-organized, and well-managed.

In **design or setting**, the following results were noted: 88 responses or 43.56% of the respondents feel more comfortable studying while seated on the floor (Rank 1), 62 or 30.69% while in bed (Rank 2), 38 or 18.81% while seated on a soft chair or couch (Rank 3), and 14 or 6.93% while in the library. From these findings, it was observed that the respondents have considered the present learning continuity modal of the college in responding to the survey. This only means that, while having their classes at home with the distance learning modalities adopted by CSPC, modular distance and online learning, students were able to exercise their choices as to how they would make learning experiences

more comfortable and convenient. However, it must be underscored, probably through parents' orientation that BTVTED students, as would be teachers, should be provided with appropriate learning spaces where they can practically comply with the learning activities and tasks of the current school year. Having been exposed to appropriate learning set-ups even at home will help the students appreciate more the goals of education, whether in a formal, non-formal or informal setting. One critical observation is the very low turnout of student responses on studying best in the library which is usually the place where learners can get access to all possible materials that can support learning progress. This finding seems to be unacceptable in the normal learning condition but for the "new normal" this can be justified especially if the students are equipped with learning resources and access to open educational resources provided in both soft and electronic copies in available web sites. But for would be teachers, the use of the library must always be upheld to all learners.

When it comes to the period of **time** by which learners find it more productive to work on with their learning outputs, the data shows a huge margin between finishing learning tasks or homework before going to bed at night with 175 responses or 84.54% of the total number of respondents (Rank 1) and completing the learning tasks early in the morning, perhaps after getting up in bed with 32 or 15.46% only (Rank 2). This is a very visible sign that learners can still do more productive work even after completing the daily tasks which are scheduled as part of the routinely activities in school. An implication can also be assumed that these students are the best ones that can truly adapt to the requisites of the teaching profession, since the job commonly requires preparation of the lesson in the evening and delivery of the plan in the morning of the next day but this does not apply to teachers who have successfully made their daily lesson plans or logs in a more convenient schedules.

However, when asked about the best time where students learn best using memory as the ultimate indicator of learning, the study revealed that majority of the respondents agree that retention of learning can be best achieved in the morning with 124 responses or 60.19% of the respondents (Rank 1), some find it best in the evening, specifically after dinner with 35 responses or 16.99 of the respondents (Rank 2), a few of the respondents find their memory working at night with 22 responses or 10.69% of the respondents (Rank 3), and a smaller number of 14 responses or 6.80% of the respondents find their memory more active during lunch time (Rank 4), 10 responses or 4.85% of the respondents in the afternoon (Rank 5), and 1 response or .49% of the respondents before dinner (Rank 6). These findings reinforced the results in the immediately preceding indicator where BRVTED students work best in the

completion of learning tasks and the production of learning outputs before going to bed, which do not require the use of too much memory work. However, in periods where memory works best, from early morning to late afternoon, students are working closely on the learning activities that require higher order thinking skills.

The **Affective Element** includes motivation, persistence, responsibility, structure, social needs and the things students like doing best. In this study, motivation is believed to have direct impact on how an individual learns as it increases students drive and energy in the attainment specific educational goal. In fact, motivation determines the persistence of students in reaching a specific goal. The study also considers persistence as a driving force towards academic achievement; hence, it is made an essential component of the survey. In higher education, persistence is what makes students endure the rigor of tertiary education. Likewise, responsibility is an important characteristic that ensures academic accomplishments. Being responsible for one's own learning makes it easier to identify strengths and weaknesses that every student must acknowledge in order to thrive successfully in the chosen career path; strengths must be enriched and reinforced while weaknesses must be overcame and remediated. Once these have been identified you can work on a learning plan that focuses on the areas that you need most help with, increasing the speed of your learning, and build the skills you have been trying to perfect. Further, structure represents the system by which students are immersed every school day. This is also the practices that the school imposes upon its learners and how they react to these practices. On the other hand, social needs define existing relationships that could provide support when things are getting out of control. It serves as an educational network that can be capitalized to achieve one's educational purpose. Finally, personal interest is a powerful motivational process that energizes learning, guides academic and career trajectories, and is essential to academic success. These are among the indicators that comprise the affective element of the survey (see Table 2).

Table 2. **Learning Styles of the First Year BTVTED Students associated with Affective Element**

Affective Element	Number	%	Rank
Motivation			
I feel good when my parents are proud of me when I do well in school	104	52.00	1
I feel good when I do well in school	48	24.00	2
I love to learn new things	36	18.00	3
A good education will help me to get good job	12	6.00	4

Total	**200**	**100**	
Persistence			
I try to finish what I started	86	40.95	1
I usually finish what I started	82	39.05	2
Sometimes I lost interest in doing things	39	18.57	3
I often get tired of doing things I have already started and what to start a new	2	.95	4
I rarely finish things I have started	1	.48	5
Total	**210**	**100**	
Responsibility			
I always do what I promise to do	105	50.00	1
I have to be reminded often to do something	60	28.57	2
I do keep my promises most of the time	44	20.95	3
I keep forgetting to do things I've been told to do	1	.48	4
Total	**210**	**100**	
Structure			
I like to be able to do things in my own	78	37.86	1
I like to be told exactly what To do	54	26.21	2
I do the best I can whether or not the teacher will check my work	46	22.33	3
I like other people tell me how to do things	18	8.74	4
I do better if I know my work is going to be checked	10	4.85	5
Total	**206**	**100**	
Social Needs			
I like to work with my friends	88	42.31	1
I like to work alone	76	36.54	2
I like to work with a couple of friends	34	16.35	3
I like adults to stay away until I complete my work	10	4.81	4
Total	**208**	**100**	
The things I like doing best, I do it:			
With a friend	78	37.50	1
Alone	60	28.85	2
With a member of the family	46	22.12	3
Couple of friend	24	11.54	4
Total	**208**	**100**	

Along m**otivation,** it was noted that parents' support is a very strong motivational factor for students sustained academic engagement. As reflected, students feel good when their parents are proud of them with 104 responses or 52.00% of the respondents (Rank 1). This is an obvious result since the parents are the most important support system at home. Self-motivation is noted with 48 or 24.00% of the respondents, as students feel good when they do well in the college (Rank 2). The desire to know things that are not yet within the students' grasp comes next with 36 or 18.00% as students love to learn new things (Rank 3) and the desire for a stable and successful job with 12 or 6.00% as students believed that good education will help them get their job (Rank 4). The results along the affective element seem

to be a natural course in the academic life of the students, family first then the self. In an interview, when one respondent is asked without the presence of the family in the option, preference would be placed on the self: beginning with the desire for discovery, quality education, quality job, and quality life.

On **persistence**, it was observed that majority of the respondents are accustomed to trying their best to finish their activities with 86 responses or 40.95% of the respondents (Rank 1). Some on finishing what they have started with 82 or 39.05% (Rank 2). Others have articulated that sometimes lost their interest in doing things with 39 or 18.87% (Rank 3). The results under the persistence indicator are clear manifestations of the learning conditions upon which contemporary students are dealt with. In this circumstance, motivation is considered a powerful tool to engine the students' passion for learning. Thus, the roles of the family and the school with the intervention of the community and the government are material elements that shape students pursuit for quality education.

In terms of r**esponsibility**, a large portion of the respondents affirmed that they always do what they promised to do 105 responses or 50.00% of the total number of 210 (Rank 1). This is an indication that students' words are material basis in determining responsibility and responsiveness in the completion of academic tasks. The other half is unevenly distributed to the importance of constant reminder to get things done with 60 responses or 28.57% of the total (Rank 3), and keeping their promises most of the time with 44 responses or 20.95% of the total (Rank 4), Based on this results, it can be inferred that despite initiative on the part of the learners to accomplish a desired task, there are instances that their focus is distracted by a lot of factors, within and outside of the self, even if within the control of the learners. Thus, people surrounding them at home and in school must take an active role in helping them keep track of their schedules and target accomplishments. Especially for first year students who, now, are still trying to check whether their career choices are within the range of their interests and community needs. But as would be teachers BTVTED students must be imbued with the tenets of discipline and character building which the college is obligated to instill, so much so, learners can already adapt to the teaching and learning environment; the work environment they will soon live and love.

With respect to **structure**, the data affirm the diverse nature of learners in appreciating structure of college education and the different ways by which they react to practices or circumstances they usually encounter in school, especially with their teachers. As

shown, 78 or 37.86% of the respondents like doing things on their own (Rank 1), 54 or 26.21% prefer to do what exactly is told to them (Rank 2), 46 or 22.33% do their best whether the teacher checks their outputs or not (Rank 3), 18 or 8.74% like to be to be told how to do things (Rank 4), and 10 or 4.85% perform better when they know that their outputs are religiously checked by their teachers (Rank 5). This results clearly show the typology of students in the TVTED program. Some students have the initiative to do things based on their ability to produce results, others need the assistance of teachers to do things right or in accordance with desired standards, and still others feel comfortable been directed and supervised in all phases of the educative process. This is an indication that the more students are diverse in the manner by which they respond to educational challenges, the more the teachers should have to be flexible in designing the learning activities and tasks of their lessons. This will greatly influence the perspective of future teachers regarding pedagogical skills and strategies that will create meaningful impacts on their career.

Under the s**ocial needs** category, the value of collaborative and cooperative learning is likewise underscored, as learners react differently to different situations provided in the survey. As presented, majority of the respondents are effective in working with groups, like; 88 or 42.31% of the respondents love to work with friends (Rank 1) and with smaller groups (other than friends) with 34 or 16.35% of the respondents (Rank 3). In fact, in an interface with a number of respondents, it was noted that working with groups make academic work easy. With groups, students can capitalize on the individual strengths of each member making it possible to support what one does not possess aside from learning from each other which in turn expands thee base of what students know and can do. Therefore, teachers must also consider groupings by individual choice in the performance of learning activities. As one educator puts it, “learners learn best when they are grouped to learners who they love working with”. However, there are also some students who still benefits from independent learning or from working alone with 76 or 36.54% of the respondents (Rank 2) and 10 or 4.81% of the respondents cannot concentrate on their work with people in sight (Rank 4). In the teaching profession, would be teachers should be well oriented about the nature of work they would have. Given the opportunity to land a teaching job in the Department of Education, one should clearly understand that to choose who to tech and to work with is not a personal option. Tasks assigned to whosoever is anointed to do the job; regardless of specialization and experience, especially if the implementing unit is facing scarcity of human potential. This is the kind of flexibility and adaptability that teachers are expected to have if they want to stay long in the profession.

Finally, with regards to the issue on how the students do the things they want to do and with whom they want to do it with, the responses show that there are 78 students (37.50% of the respondents) who chose to have it with a friend (Rank 1), 60 students (28.85% of the respondents) alone (Rank 2), 46 students (22.1% of the respondents) with a member of the family (Rank 3), and 24 students (11.54% of the respondents) with couple of friends. This is a clear acknowledgment of the flexibility of learners under given circumstances. This could be a huge advantage if would be teachers are able to adjust in various circumstances as the profession suggests. The more teachers are endowed with characteristics that are responsive to inclusive education, the better they can function in the contemporary educational setting, locally or internationally.

The Cognitive **Element** encompasses processing of information, retention of information, and perceptual mode. **Processing of information** in tertiary education is a critical component of learning. This concept advances the idea that individuals process information through their senses. As students take in information, that information is first stored in a short period in the sensory storage. Then it is transferred to the short-term memory which is also called the working memory from which it is transferred to the long-term memory if not completely forgotten. For learning to occur, it is important that information is transferred from the short-term memory to the long term memory, because if not, it will cause an information overload since the short term memory can only manage few information. On the other hand, retention of information is part and parcel of information processing. It is indeed the final stage by which information is stored in the long-term memory of the brain. But for the study, processing of information refers to the process by which BTVTED students most likely to learn information while retention of information speaks of the sources of information that students retain the most. At another angle, perceptual mode is the specific way in which a person makes sense of images that the eyes could see. This is the strategy by which the brain draws conclusions based on what the eyes perceived whether the brain changes its mode of perception. However, in this study, perceptual mode revolves around what the students find effective in terms of modals of learning.

Table 3. **Learning Styles of BTVTED Students as to Cognitive Element**

Cognitive Element	Number	%	Rank
Processing of Information			
When I have to learn something new. I most like to learn it by:			

Reading about it	107	51.44	1
Listening to lectures	43	20.67	2
Watching shows or viewing from a source	40	19.23	3
Going to places and learning from the experience	14	6.73	4
Listening to a recorded material	4	1.92	5
Total	**208**	**100**	
Retention of Information			
The things I remember best are the things that:			
My teacher tells me	64	30.62	1
Someone shows me	52	24.88	2
My friends and I talked about it	38	18.18	3
Other people tell me other than my teachers	26	12.44	4.5
I saw on a television	26	12.44	4.5
I hear a record or tapes on a radio	3	1.44	6
Total	**209**	**100**	
Perceptual Mode			
I really like to:			
Read books, magazines or newspapers	60	29.13	1
Talk to people	48	23.30	2
Look at pictures	46	22.33	3
Learn new things with my hands	30	14.56	4
Use typewriters, computers. calculators or other machines	22	10.68	5
Total	**206**	**100**	

As a result, **information processing** registers a huge margin between reading and other indicators, such as: hearing or listening, and viewing. Based form the data gathered, 107 or 51.44% of the respondents prefer to learn something new and like to learn it by reading (Rank 1). This is a manifestation that most students still considers reading as one of the most effective ways of collecting information for purpose of learning, despite the presence of a lot of media from where new knowledge can be taken. One of the underlying reasons behind this result, after aa close conversation with a number of BTBTED students, is the availability of and accessibility to reading materials which are more available to majority of the students, in varied forms, like: books, journals, research papers, documents on file, etc. On the other hand, 43 or 20.67% of the respondents learn something new by hearing or listening to their teachers (Rank 2), 40 or 19.23% by watching shows and programs (Rank 3), 14 or 6.73% by going to places and learning from the experience (Rank 4), and 4 or 1.92% by listening to a recorded material (Rank 5). From these results, it can be assumed that students' learning styles are also influenced by the availability of learning materials that can be made available to students and the kind and quality of educational technology that learners are equipped with, at home and in school. Thus, schools should provide avenues to support students;

learning, especially if the family cannot provide essential learning resources at home. On this note, teachers at the college should also initiate to produce varied learning materials that are relevant to students' context; as what the principles of contextualization and differentiation suggest.

In terms of **retention of information**, it was observed that a popular result is noted among 64 respondents (30.62% of the respondents) who remember things best through their teachers (Rank 1). This is is an indication that the degree of respect and truust students accord to teachers are still overwhelming despite the presence of a lot of media or channels that can aide students in strengthening their memories. Subsequently, it was also noted that students remember things best via watching and viewing with 52 responses or 24.88% of the respondents (Rank 2), 38 responses or 18.18% of the respondents through visual mode (Rank 3), 26 responses or 12.44% through conversation with people and by watching television (Rank 4.5), and 3 responses or 1.44% of the respondents through listening to recorded materials (Rank 6). This is a clear manifestation of the relevance of teachers in the learning process, regardless of the conditions and circumstances of Philippine education. Truly, teachers' presence alone can make meaningful changes in the lives of the learners, thus, justifying the ever-promising cliché that learners' learn best under the supervision and guidance of teachers.

For the last indicator, **perceptual mode**, the data convey a strong reliance of students to print media, conversational or interactive media, visual arts, manipulative activities, and other forms of classic and digital media. As reflected, 60 or 29.13% of the respondents loved to read books, magazines or newspapers (Rank 1), 48 or 23.30% of the respondents love to talk to people (Rank 2), 46 or 22.33% love to view pictures, (Rank 3), 30 or 14.56% by manipulation through the use of bare hands (Rank 4), and 22 or 10.68% through the use of typewriters, computers and other learning devices (Rank 5). This indicates that contemporary BTVTED students are flexible enough to adapt to multimedia learning which could be their competitive advantage in achieving a well lived career in the teaching profession.

The P**hysiological Element** of the human being is identified in the functionality of its body. In learning, the main physiological aspect is memory, hence in this study, the indicators are determined on the basis of its influence in the enhancement of the memory, such as: auditory, visual, tactile, pedagogic, and nourishment – auditory is for the sense of hearing and speaking, visual is for the sense of sight, tactile is for the sense of touch, pedagogic is for

the sense of feeling or appreciation, and nourishment is for need sense. Table 4 provides the data physiological element of the first year BTVTED students of CSPC.

Table 4. **Learning Styles of BTVTED Students as to Physiological Element**

Physiological Element	Number	%	Rank
Auditory			
I learn best by listening and participating actively in class discussions	94	46.08	1
I learn best by just listening to discussions without the need of engaging in class discussions	62	30.39	2
I learn best by asking questions about the things I want to know about the lesson	48	23.53	3
Total	**204**	**100**	
Visual			
I am more interested in discussions with visual elements, like: graphics, images, motion pictures, etc.	132	62.86	1
I am more effective by reading mere texts of any selection from a learning material.	78	37.14	2
Total	**210**	**100**	
Tactile			
I am motivated to actively engaged if learning activities require the use of senses and physical mobility	190	90.48	1
I am comfortable with learning activities in worksheets and other tasks while seated	20	9.52	2
Total	**210**	**100**	
Pedagogic			
I enjoy learning activities and tasks that are differentiated	55	26.19	1
I enjoy learning activities and tasks that are contextualized based on learners' nature and experiences	48	22.86	2
I enjoy learning activities and tasks that are collaborative	46	21.90	3
I enjoy learning activities and tasks that require higher order thinking skills	40	19.05	4
I enjoy learning activities and tasks that require self-discovery and research	12	5.71	5
I enjoy learning activities and tasks designed for individual learner	9	4.29	6
Total	**210**	**100**	
Nourishment			
I am comfortable studying while eating or drinking	95	45.24	1
I am not comfortable studying while eating or drinking	56	26.67	2
I love to eat and drink before actively engaging	31	14.76	3

in academic works			
I love to eat and drink after completing my academic tasks	16	7.62	4
I usually eat and drink when I am pressured	12	5.71	5
Total	**210**	**100**	

As shown, along **auditory**, 94 or 46.08% of the respondents can learn best by listening and participating actively in class discussions (Rank 1), 62 or 30.39% of the respondents can learn best by just listening to discussions without the need of engaging in class discussions (Rank 2), and 48 or 23.53% of the respondents can learn best by asking questions about the things I want to know about the lesson (Rank 3). This is a manifestation that BTVTED students are more inclined to the use of listening and speaking skills in absorbing lessons. In fact, based on an articulated experience of a respondent, learning is most effective when teachers acknowledge students participation after a prolonged lecture and by recognizing students' ideas based on their understanding of instructional content.

In the second indicator, **visual,** it was noted that 132 or 6.86% of the respondents are more interested in discussions with visual elements, like: graphics, images, motion pictures, etc. (Rank 1) while 78 or 37.14 of the respondents are more effective by reading mere texts of any selection from a learning material (Rank 2). This is a clear representation of the significant impact of visual learning support in making the lesson more interesting to learners, as interest is believed by most respondents as effective motivation to learning. In one of the researcher's conversations with a group of students, it was disclosed that even if lesson objectives are well-define and the learning content is very ideal but not relevant to the needs and interests of the learners, its delivery will not matter much to students. Therefore, teachers must be very sensitive to the type of learners they deal with in their classes.

In the third indicator, **tactile**, the study records a huge margin between the use of senses and physical mobility and self-learning and independent learning. As projected on the table, 190 or 90.48% of the respondents feel motivated to learn when actively engaged in learning activities that require the use of senses and physical mobility (Rank 1) while 20 or 9.52% of the respondents feel more comfortable with learning activities in worksheets and other tasks while seated on their respective chairs (Rank 2). While it is true that most learners today find learning more engaging when it requires multiplicity of competencies relevant to diverse learners' characteristic, still there are students who find themselves more efficient

when doing their activities and tasks in solitary mode. Hence, teaching strategies must accommodate this diversity to make learning more equitable and meaningful

In the fourth indicator, **pedagogic**, 55 or 26.19% of the respondents enjoy learning activities and tasks that are differentiated (Rank 1), 48 or 22.86% of the respondents enjoy learning activities and tasks that are contextualized based on learners' nature and experiences (Rank 2), 46 or 21.90% of the respondents on collaborative and cooperative learning activities and tasks (Rank 3), 40 or 19.05% of the respondents on learning activities and tasks that require higher order thinking skills (Rank 4), 12 or 5.71% of the respondents enjoy on learning activities and tasks that require self-discovery and research (Rank 5), and 9 or 4.29% of the respondents enjoy learning activities and tasks designed for individual learner (Rank 6). This result describes the characteristics of learners as to how they appreciate learning pedagogies employed by teachers in the delivery of instruction. In the college, there is a growing issue about the conventionality of learning strategies, which are confined to lecture or reporting and question and answer types. These approaches, according to respondents, are not helping them to become more flexible and versatile as would be teachers. According to the respondents, their teachers are the best visual examples they expect to provide meaning situations on how to affect learners given their varied nature. Therefore, it is incumbent upon them to expose BTVTED students to various pedagogical skills that could address different classroom circumstances and conditions.

Finally, in the fifth indicator, **nourishment**, 93 or 45.24% of the respondents are comfortable studying while eating or drinking (Rank 1), 56 or 26.67% of the respondents are not comfortable studying while eating or drinking (Rank 2), 31 or 14.76% of the respondents love to eat and drink before actively engaging in academic works (Rank 3), 16 or 7.62% of the respondents love to eat and drink after completing my academic tasks (Rank 4), and 12 or 5.71% usually eat and drink when I am pressured (Rank 5). The study shows the relevance of nourishing the body in the effective functioning of the brain. The results articulate varying modes that characterize learners' mode in addressing nutritional support to learning. As multi – tasking becomes more relevant to teaching and learning, majority of the students are also associating the principle to learning and eating. Though ethically not acceptable, teachers should also have to consider that by allowing students to take their meals while doing their activities and tasks simultaneously with eating will not cause to much distraction to whole especially if there is a well-defined rules in its observance.

The Academic Performance of the BTVTED Students

The students' academic performance is based on the general weighted average (GWA) of the BTVTED students during the first semester of the academic calendar year 2019 – 2020. In determining the verbal interpretations for the students' GWAs, the researcher employed class intervals of five (5). This is to make sure that each class or group has an equal value and that no overlap of values would appear in each category. Hence, the GWAs are grouped as indicated in the verbal interpretations in Table 5.

Table 5. Academic Performance of BTVTED first year students

Scale	Frequency	Verbal Interpretation	Rank
1.0 - 1.3	32	Excellent	3
1.4 – 1.75	152	Very Good	1
1.8 – 2.2	43	Good	2
2.25 – 2.6	1	Fair	5
2.7 – 3.0		Passing	
5.0	13	Failed/Dropped	4
Total	**210**		

As determined from the academic report of the first year BTVTED students, a huge number of the respondents have very good academic performance (with GWA ranging from 1.4 to 1.75; 152 or 72.3% of the respondents), followed by those with good academic performance (GWA between 1.8 – 2.2; 43 or 20.%), and those with excellent performance (GWA between 1.0 – 1.3; 32 or 15.2%). This result is obviously the offshoot of the selective admission implemented by the college to ensure the standards prescribed by CSPC as one of the premier higher education institutions in Region V – Bicol. However, despite standards, a big number of 13 students are found non-compliant to the minimum requirement for academic standards. No report was filed at the office to inform the college of this account; hence, no intervention program was initiated by the department to assist students who are at risk of failing or dropping, which can be an instrumental program for academic services of the college. However, at the level of instruction, teachers could have made an initiative by instituting specific action that could assist learners in addressing their own difficulties.

Relationship of Learning Styles to the Academic Performance

To assess the statistical relationship between learning styles and academic performance, the study made use of Parametric Pearson Product – Moment Correlation Technique.

Table 6. Relationship of Learning Style to the Academic Performance

Learning Styles	df	Academic Performance		Ho	Decision
		CV	TV		
Physical Element	21	0.4227	0.8394	Rejected	Significant
Affective Element	21	0.4227	0.2397	Accepted	Not Significant
Cognitive Element	13	0.5139	0.7121	Rejected	Significant
Physiological Element	18	0.4438	0.6754	Rejected	Significant

Table 6 shows the relationship of the learning styles to the academic performance of the first year BTVTED students of CSPC. From the result, it was noted that the null hypothesis which states that "there is no significant relationship between students' learning styles and students' academic performance" was rejected, since the absolute computed value along physical, cognitive and physiological element was less than the absolute tabular value. This only shows that a significant relationship is determined between the learning styles and the academic performance of the first year BTVTED students particularly on physical, cognitive, and physiological elements. On the other hand, the tabular value along the affective element is greater than the absolute computed value, hence the hypothesis was accepted. This means that on the affective element no significant relationship is observed between academic performance and learning styles of the first year BTVTED students.

DISCUSSION

After a thorough analysis of the data generated by the study, the following conclusions were drawn: 1) The learning styles of the first year BTVTED students of Camarines Sur Polytechnic Colleges are diverse. Most of them are motivated by auditory learning experiences with visual support. Likewise, they are inspired by learning activities that require manipulation and use of creative skills. Further, they find a conducive learning environment with teachers who are equipped with pedagogical skills that respond to the nature, needs and interests of the students; 2) Majority of the students are classified "above average" in terms of academic performance. But the number of students who dropped and failed during the semester is something that the college must study critically considering its effectiveness and efficiency standards; 3) The learning styles of the first year BTVTED students invariably affect academic performance, thus, learning experiences must be responsive to the diverse nature, needs, and interests of the students; and 4) Specific actions

must be done to make learning experiences, especially in BTVTED, more motivating and meaningful to students, thus, improving the quality of academic performance in the succeeding terms or levels.

CONCLUSION

Based on the study conclusions, the following recommendations are herein formulated: First, the college must ensure that pedagogical strategies employed by teachers in their respective courses are relevant and responsive to the needs and interests of the students particularly in teacher education. Second, teachers handling professional courses should implement differentiated, contextualized, and integrative instructional delivery techniques to accommodate various learning styles and different learning circumstances. Third, regular monitoring and evaluation of instruction must be conducted to see the actual condition of teaching and learning at the level of the classroom and identify specific issues subject to change or innovation. Monitoring and evaluation must focus on content and pedagogy, effectiveness and efficiency of delivery, and relevance and responsiveness to students' learning. Fourth, the college must design an institutional program to identify learners in difficult circumstances and those that are at risk of dropping and failing to ensure a 100% cohort survival rate of students enrolling in the program. Fifth, similar studies should be conducted to determine other issues encountered in the implementation of the college curriculum to improve learning conditions and instructional delivery.

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