

Assessing the Learning Styles of Senior High School Students of La Consolacion University Philippines: Implications in the Teaching- Learning Process

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Abstract

The study sought to discover the learning styles of Senior High School (SHS) students of La Consolacion University Philippines using the Canfield Learning Styles Inventory (CLSI). Several studies have long proven that there is a need to modify teaching to suit and accommodate the students' learning styles, and that it works to create an effective learning condition for students. A sample of students (n=399) were gathered for the study and where the Canfield LSI were administered. Results showed that, according to the Canfield LSI scale, most SHS students are Social learners. Recommendations and ideas for differentiation are also provided in this study.

Keywords – *Canfield learning styles inventory, learning styles, Senior High School*

1. Introduction

Learning styles refer to the “view that different people learn information in different ways” (Pashler, et.al., 2009). Psychologists also refer to them in terms of “conditions, contents, modes and expectations (Canfield and Lafferty, as cited in Dunn, et.al., 1981). The study of learning styles has been a growing educational trend, and it is believed that matching the learning styles of students with the mode of instruction actually aids in student learning. This is what the literature calls as the “meshing hypothesis” (Pashler, et.al., 2009). In the same article, it attributed the phenomenon of the hypothesis into two reasons: first is the rise of type-based assessments (e.g., Myers-Briggs Type Indicator) and the other reason is the belief that schools can be held accountable for the education they give in lieu of individualizing or “personalizing” educational processes in favor of the students. The dearth of studies regarding learning styles has been so dense that “the level of ambiguity and debate is such that even the task of selecting an appropriate instrument for investigation is an onerous one, with the unifying of subsequent findings within an existing framework problematic, at best” (Cassidy, 2004). As such, it would not be surprising if the current literature about learning styles have conflicting results, if not very complicated and different methods and approaches.

In most studies, the “meshing hypothesis” as mentioned by Pashler, et.al. has been the main assumption, and some studies go into including this within their very framework (Popoola and Hendricks, 2014). In order to assess this hypothesis, some studies take on different methods in taking this hypothesis to the test. Some studies utilize different methods in assessing the efficiency of matching teaching styles and learning styles within ninth-grade students (Damrongpanit and Reungtragul, 2013). Their method included administering a Teaching Styles Inventory (TSI) and Learning Styles Inventory (LSI), and interpreting the results using descriptive statistics, one-way analysis of variance, and a pairwise comparison (Scheffe's method). However, in the study of Rogowsky, Calhoun and Tallal (2014), the study did not conclude to confirm the “meshing hypothesis”. Instead, the results failed to show a statistical significance for “verbal comprehension attitude” or “learning based on mode of instruction”.

Other studies took a simpler turn and matched the learning styles of students with an appropriate learning material. One study even created an “adaptive taxonomy” from this method (Franzoni and Assar, 2009).

1.1. Learning Styles in the Different Disciplines

In the context of English language learning, one study looked at the differences of learning style preferences between native speakers and non-native speakers (Reid, 1987). The results show variation of data between demographic groups (i.e., nationalities). For instance, most English language learners in this study leaned towards kinesthetic learning, but the Japanese were lesser kinesthetic than other nationalities; the Koreans appeared to be more auditory, etc.

One study proposed an e-learning system that is oriented by learning styles (Ingosan, et.al., 2012). The results of the study confirms the assumptions of related studies that adapting to learners’ learning styles have a positive effect on their academic performance. Two studies confirm the effect of learning styles in the final academic performance of students in distance e-learning classes, one for statistics and its relationship with discipline attitudes (Christou and Dinov, 2010), and another for core computer science courses as related to their self-regulation in learning (Alharbi, et.al., 2011). It is interesting to note that in these studies, the Felder-Silverman learning styles inventory was used, which is apparently popular “to identify learning styles in science and engineering education” (Alharbi, et.al., 2011; Franzoni and Assar, 2009).

One study that also used the Canfield LSI in assessing the learning styles of business education students (Hussain and Ayub, 2012). The study correlated the results with the teaching styles of the business education professors. Wu and Fazzaro (2013) also took on business education students as respondents, and had also utilized an experimental design in confirming the meshing hypothesis. While the study was a confirmed the hypothesis, it also maintains that the results can also be influenced by other factors, like the motivation of the students.

One study considered Medicine students within the framework of learning styles (Najarkolai, et.al., 2015). In using Kolb’s learning styles as primary reference, they found out that medical students are convergent learners. The study correlates this with the demographic information of the respondents in the study.

1.2. Objectives of the Study

The study sought to explore and break new grounds in the study of the Senior High School level, particularly in the way we teach in this new educational paradigm, in the light of the students’ learning styles as determined by the Canfield Learning Styles Inventory. Specifically, the study sought to answer the following:

1. What are the dominant learning styles for each track/ strand of Senior High School students?
2. What are the implications of these learning styles in the teaching-learning process in the Senior High School level in the context of K-12?

It is hoped that this study would be beneficial in determining the academic needs of the Senior High School so as to create more responsive classrooms to their needs, as well as to maximize their learning experience in the University by providing them the appropriate tools to learn the skills they need for the world of work and/or higher education.

2. Method

The study is a descriptive research that aims to uncover the learning styles of Senior High School students and draw implications for teaching and learning. The study will make use of the Canfield Learning Styles Inventory (CLSI), a 30-item questionnaire that consists of nine typologies and three categories: conditions, content and mode. The nine typologies include social, independent, applied, conceptual, social/applied, social/ conceptual, independent/ applied, independent/ conceptual, and neutral preference (Canfield 1988, as cited in Eide, et.al., 2001).

The instrument was administered to a sample size of 339 students from the total population of 2,661 students within the Senior High School (SHS) department of La Consolacion University Philippines. The number was derived by arriving at the sample value by Slovin's formula, and dividing the sample size to two according to the percentage of population of each campuses, with the Bulihan Campus occupying 37.47% and the Barasoain Campus with 62.53%, coming up with 127 and 212, respectively. The numbers were also divided equitably to each track/ strand also according to their percentage share of the total SHS population. The mean average scores and percentages were computed to analyze the data.

3. Results and Discussion

3.1. The Dominant Learning Styles of the Senior High School students

Figures 1 and 2 present the dominant learning style of students per strand from Catmon and Barasoain Campus.

Figure 1. Learning Styles of SHS Barasoain Campus

	SA	A	IA	S	N	I	SC	C	IC
ABM	11	2	2	11	8	1	11	3	4
HUMMS	3	0	4	4	0	1	1	1	0
STEM	7	1	4	8	9	2	11	0	2
TVL	14	6	1	9	6	4	12	4	4
GAS	3	1	0	4	4	1	0	1	0
Arts & Design	0	0	1	1	0	0	0	0	0
Sports	1	0	0	1	0	0	0	0	0
TOTAL	39	10	12	38	27	9	35	9	10

Figure 2. Learning Styles of SHS Bulihan Campus

	SA	A	IA	S	N	I	SC	C	IC
ABM	9	5	3	10	4	1	6	7	6
HUMMS	0	0	0	1	1	3	4	0	0
STEM	5	5	8	10	8	3	7	9	6
TVL	4	0	1	1	0	1	1	1	0
GAS	0	2	1	1	1	0	1	0	0
Arts & Design	2	1	1	1	0	1	1	0	0
TOTAL	20	13	14	24	14	9	20	17	12

The Accountancy, Business, and Management (ABM) Strand students were identified to be Social/Applied learners, Social learners, and Social/Conceptual learners. Social learners learn best when given opportunities to interact with peers and even their teachers.

Humanities and Social Sciences (HUMSS) Strand, this strand helps to build a solid liberal arts foundation, detailed exploration of the theoretical aspects of the students' chosen field and hands-on professional experience. This strengthens logical reasoning and critical thinking which needed skills are once go to college. Majority of the students from this strands specifically from Barasoain Campus are Independent/Applied learners which prefers to work alone toward individual goals in activities closely approximating real-world experience; instruction involving individual labs or unsupervised technical practicums. This contradicts the result from the same strand of Catmon Campus students which are Social learners who prefers instructions involving small group and has no preference for either applied or conceptual approaches.

Science, Technology, Engineering and Math (STEM) strand focuses on equipping with the knowledge and skills to solve tough problems, evaluate evidence, and make sense of the available information in creating innovative solutions through invention and discovery to improve the way of life. The students from Catmon Campus are mainly Social learners who prefers extensive opportunities to interact with peers and instructors while student from Barasoain Campus were much specific as they are Social/Conceptual learners who prefers to have opportunities to interact with students and instructors using highly organized language-oriented materials.

The Technology-Vocational Livelihood (TVL) has three classifications: (1) Home Economics; (2) Industrial Arts; (3) Information & Communication Technology, which mainly focuses on manual, technical, and fundamental skills. Students of this strand from both campuses are identified as Social/Applied learners who prefers instruction involving role playing, group problem solving, and supervised practicums, which fits for their chosen fields.

General Academic Strand (GAS) students are not yet decided on which field they want to pursue in College. Students from Barasoain Campus are identified as Neutral preference learners who tends to have no clear areas of strong preference and may find adequate match in any other type. They are also Social learners that has no strong preference for either applied or conceptual approaches. While students from Catmon Campus are Applied learners who has no strong preference for either social or independent approaches.

Arts & Design this track allows the students to explore different field of arts such as Media Arts, Visual Arts, Literary Arts, Dance, Music and Theater. It also covers a comprehensive discussion and practical studies on appreciation, leadership and management on the said arts fields. Students from Barasoain Campus like HUMMS are identified Independent/Applied learners which prefers to work alone toward individual goals in activities closely approximating real-world experience; instruction involving individual labs or unsupervised technical practicums. Catmon Campus Students from this strand are like TVL students who are identified as Social/Applied learners who prefers instruction involving role playing, group problem solving, and supervised practicums, which fits for their chosen fields.

Sports track includes the fundamentals and psychosocial aspect of Fitness, Sports, Movement and Recreation Leadership. It equip the students with basic coaching skills, exercise programming and first aid training. Only Barasoain Campus has Sports track students and they were identified as Social/Applied learner and Social learners, which really fits their chosen track because of the interaction that they need to have with their peer.

3.2. Implications of Learning Styles in the Teaching and Learning Process

The aims of this study were to uncover the learning styles of Senior High School students and utilize this data in aid of improving the teaching-learning process, in the context of the “meshing hypothesis” as labeled by Pashler, et.al. (2009). There are only a few number of studies utilizing Canfield Learning Styles Inventory as their LSI mode, so looking for parallelisms with other studies concerning the results of this study is sparse. The study of Hussain and Ayub (2012), for instance, utilized the Canfield LSI as their LSI mode, and correlated it with a different scale for teaching styles. Their respondents can be equivalents of ABM students, who are in retrospect, neophyte business education students. While they achieved their study objectives, it wasn’t clear what the learning styles of the students were, neither even the teachers’ learning styles. Regardless of what LSI mode has there been available, the need to investigate the learning styles of students as a guide to improving instruction becomes imperative to make it more effective (Damrongpanit and Reungtragul, 2013).

In light of these studies, it is recommended that future studies consider creating a correlation study for the teaching styles of Senior High School faculty members. This study can also provide evidence as to the efficiency of the teaching faculty and whether their pedagogical practices are psychologically sound, at least with respect to considering their learning styles.

The Students of their respective Strands from both campuses were identified to have their dominant learning styles, however, aside from their identified learning styles, it was also observed through the results that majority of the students from all Strands are Social learners.

Social Learners prefers extensive opportunities to interact with peers and instructors. Social learners has no preference for either applied or conceptual approached and would appreciate instruction involving small groups and teamwork. (Canfield, 1988; from Eide, et.al., 2001)

When choosing an activity, Social learners are more likely to pick something that will involve social interaction, communication, and multiple people. Whether they play team sports, talk on the phone more frequently than most, or enjoy social gatherings, they will find a way to connect with other people on a regular basis. (Scarince, 2003)

Here are some suggested activities for social learner students that teacher might want to adapt.

- **Role-playing**, this is a technique that works well with either one or with a group of people. The students will enjoy this activity while interacting with their classmates, peer or teacher.
- **Panel discussion**, this activity will help the student to discuss the given topic with their classmates. The social learners will be able to appreciate the opinion of their peer and will be more open minded about different things.
- **Mind Maps and System Diagrams**, these are great work on in class. The teacher may appoint a group leader and the rest of the group will work through material and may suggest other ideas. Through this, they will be able to gain new knowledge from their classmates or groupmates.
- **Group Project**, though this may make or break an established group or a new formed group inside the class, this is also an effective way to let the social learners broaden their horizon not just by sharing what they want about the project but to be able to learn new things from their group mates.

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