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Environmental Elements of Learning Style Preference of High and Low Performing Marine Engineering Students

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Abstract

Identifying the individual differences of students in terms of learning style preference would help them achieve better potential as they go along with their journey in finishing their respective degree programs in college. This study aimed to determine the learning style of the Marine Engineering students in a private Asian university in terms of environmental elements as to facilities, sound, light, temperature and design and to compare the learning styles of high and low performing students. Descriptive type of research was utilized in the study. Results showed that High performing students significantly differ in going to the library and the use of Power Point and they need to be in the quiet place when learning while low performing students can learn the lessons even with the some kind of sounds in the surroundings. Both groups can highly work on lights which depend on what is being done and low performing prefer to always work in a low light compared to high performing students. High performing students can best learn new things in a more formal design of environment compared to low performing students.

Keywords: Learning environment, Learning style, Marine Engineering students,

1. Introduction

Learning could be best acquired in a situation where students can easily adapt to the atmosphere that encourages active participation and cooperation among members of the class. The process of education is indeed very subtle as it involves exchange of thoughts and deals that seem rather intangible (**Kalhotra, 2013).** Mauladin (2013) stated that it is important to provide a method of learning about the good and the bad, what should and what should not be done when one is in a shared living environment. The natural and man-made environments the people live and work within vary greatly (Pagcaliwagan et al., 2013). Learning method provides not only moral ethics against fellow human beings, but also knowledge of the ethics of the environment. Learning or thinking styles refer to the preferred way an individual processes information and also describe a person's typical mode of thinking, remembering or problem solving (Abante et al., 2014).

Students now seem to know less and use despite the availability of the study materials. Likewise, students do not know how to think and study properly and effectively (Laguador, 2013). Stability of utilizing and bringing advances to classroom instruction involves facilities and infrastructures that would support the maintenance of any computer-based teaching. Proper lighting and acoustic of the laboratories and other facilities should be considered to support learning experience of the students. Temperature and design of the classrooms are considered important elements in the learning process. Internet connections are always necessary within the university to provide access to any educational websites needed for instruction and

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classroom discussion. Problems occurred in the inconsistency of integrating technology-driven teaching strategies which become the major issue which was confronted by underlying concerns under the institutional, departmental and student factors (Bay, 2013) in keeping the delivery of instruction interactive. Sustaining the learning environment with appropriate application of technology is necessary to promote innovation in bringing real life scenarios into classroom setting.

Recent developments in instructional technology and multimedia learning environments indicate the need for new requirements or strategies for designers and developers who are responsible for developing project management and the planning of learning processes in education and industry (Ipek & Sözcü, 2014). Making it consistent would provide better knowledge and understanding on the discipline and better satisfaction on the delivery of instruction. Students would realize the benefit of utilizing technology as major instrument to the development of their skills and competencies. Mauladin (2013) stressed the selection of appropriate learning methods where teachers can develop young naturalist intelligence and knowledge that foster the children to about their environment.

Skills of the students can be best acquired from the effective implementation of curriculum through various teaching pedagogies with state-of-the-art facilities and very satisfactory student services (Dotong, 2014). Teacher -centered involves the teachers' action to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation (Abanador et al., 2014).

Providing quality products and services is always the ultimate goal of every educational institution (Laguador, Dotong & De Castro, 2014), therefore, determining the learning style preferences of Marine Transportation in acquiring knowledge and appropriate skills in professional courses would provide insights for the school administration to address the needs of the students for continuous improvement as part of its Quality Management System where satisfaction of the students to the school services is always important input to better serve its clients.

Objectives of the Study

This study aimed to determine the learning style of the Marine Engineering students in a private Asian university in terms of environmental elements as to sound, light, temperature and design and to compare the learning styles of high and low performing Marine Transportation students.

2. Method

Research Design

The descriptive type of research will be utilized in the study. Descriptive survey method is appropriate for data derived from simple observational situations, whether these are actually physically observed or observed through the use of a questionnaire or poll techniques (Zulueta & Costales, 2003).

Participants

The respondents of the study are the 30 percent of the First Year BS Marine Engineering students enrolled during 2nd Semester S.Y. 2013-2014 who finished Ships, Ship Routines and Ship Construction, Engine Room Watch keeping, and Machine Shop 1 courses. They were classified between low and high performing students based on their General Weighted Average during 2nd Semester SY 2013-2014.

Instrument

The survey questionnaire will be utilized in the study. The instrument was adapted from the similar study conducted by Boneo (2007) in the attitude of education students. The questionnaire will still have to undergo content validation of the expert from the university and pilot testing was administered to test its reliability with Cronbach's alpha of 0.72.

Procedure

The questionnaires were administered personally by the researchers during the 1st Month of 1st Semester in SY 2014-2015 among BS Marine Engineering Students. One-hundred (100) percent retrieval rating was achieved to all the randomly selected participants. Documentary analysis of the final grades of the BSMarE students in Ships, Ship Routines and Ship Construction, Engine Room Watch keeping, and Machine Shop 1 courses were gathered from the Dean's Office.

Data Analysis

Gathered data will be coded, tallied, analyzed and interpreted using percentage, weighted mean, rank and T-test as statistical tools. The given scale was used to interpret the result of the data gathered: 3.50 – 4.00: Strongly Agree (SA); 2.50 – 3.49: Agree (A); 1.50 – 2.49: Disagree (D); 1.00 – 1.49: Strongly Disagree (SD).

3. Results and Discussion

Table 1: Learning Style of Marine Engineering Students in terms of Environment Element as to Facilities

Learning Styles as to Facilities	High	Low	Total	VI	Rank	Sig
1. I always go to the library where instructional materials are made available	3.54	3.24	3.39	A	3	.033*
2. I always use the WiFi within the university	3.34	3.42	3.38	A	4	.412
3. I use the internet section to search for my assignments and projects	3.12	3.10	3.11	A	5	.301
4. I prefer PowerPoint presentation to be used in the classroom discussion to learn the lessons	3.65	3.38	3.52	SA	2	.021*
5. I learn new skills when using laboratories	3.59	3.52	3.56	SA	1	.079

*Significant at 0.05

Table 1 shows the learning style of Marine Engineering students in terms of environmental element as to facilities. The high performing students (3.54) prefer to go to the library where instructional materials are made available compared to the low performing students (3.24) as denoted by the computed p-value of 0.033 which is less than the 0.05 level of significance. Meanwhile, there is no significant difference on the use of WiFi within the university; the use of internet section to search for their assignments and projects as well as the way they learn new skills when using laboratories as denoted by the p-values which are greater than the 0.05 level of significance. However, high performing (3.65) students prefer to use power Point presentation in the classroom discussion to learn the lessons compared to the low performing students (3.38) as denoted by the computed p-value of 0.021 which is less than the 0.05 level of significance. This signifies that high performing students significantly differ in going to the library and the use of Power Point compared to low performing students. Reyes (2013) emphasized that education aims to create teaching and learning environment that would bring about desired changes in learners such as making them more knowledgeable, skilful or acquired positive attitudes and values. Improving the kind of facilities would bring better experience for the students to learn necessary skills that would be appropriate for their working environment in the ship as engine cadets.

Table 2 shows the learning style of Marine Engineering students in terms of environmental element as to sound. The two group of students do not differ on the need to be quiet while learning and sound would depend on what is being learned which sometimes they need to be quiet and sometime they do not as indicated by the computed p-values of greater than the 0.05 level of significance. However, High performing students (3.45) preferred to be quiet when learning compared to low performing (3.33) as denoted by the computed p-value of 0.045 which is less than the 0.05 level of significance. Meanwhile low performing students prefer to work with some kind of sound from the radio and TV and they can learn lessons even they

hear some conversations compared to high performing students who preferred to be quiet when learning as denoted by the computed p-values which are less than the 0.05 level of significance. This signifies that high performing students need to be in the quiet place when learning and low performing students can learn the lessons even with the some kind of sounds in the surroundings but the level of absorption of information cannot be assured in this study if they get the same amount of learning in two different environments.

Table 2: Learning Style of Marine Engineering Students in terms of Environment Element as to Sound

Learning Styles as to Sound	High	Low	Total	VI	Rank	Sig.
1. I always need to be quiet while learning.	3.37	3.27	3.32	A	4	0.167
2. I usually need to be quiet when learning.	3.45	3.33	3.39	A	3	0.045*
3. It depends on what is being learned: Sometimes I need to be quiet and sometimes I do not.	3.56	3.45	3.51	SA	1	0.087
4. I always work with some kind of sound from the radio and TV	3.18	3.24	3.21	A	5	0.032*
5. I can learn lessons even I hear some conversations	3.34	3.45	3.40	A	2	0.048*

*Significant at 0.05

Table 3 shows the learning style of Marine Engineering students in terms of environmental element as to light. High performing students (3.65) prefer lights which do not have to extremely bright but more light to less compared to low performing students (3.41) as denoted by the computed p-value of 0.034 which is less than the 0.05 level of significance while low performing (3.35) prefer to always work in a low light compared to high performing students (3.12) as denoted by the computed p-value of 0.034 which is less than the 0.05 level of significance.

Table 3: Learning Style of Marine Engineering Students in terms of Environment Element as to Light

Learning Styles as to Light	High	Low	Total	VI	Rank	Sig.
1. I always work in a low light	3.12	3.35	3.24	A	4	0.034*
2. I sometimes work in a low light	3.38	3.26	3.32	A	3	0.072
3. It depends on what is being done.	3.56	3.45	3.51	SA	2	0.173
4. I like light. It does not have to be extremely bright but I prefer more light to less.	3.65	3.41	3.53	SA	1	0.034*
5. I prefer them very bright.	3.21	3.11	3.16	A	5	0.121

*Significant at 0.05

Both groups can highly work on lights which depend on what is being done as denoted by the p-value of 0.173 which is greater than the 0.05 level of significance and they prefer working in very bright light which obtained the lowest total weighted mean score of 3.16 with computed p-value of 0.121 which is greater than the 0.05 level of significance where the variance between groups is not enough to establish any difference.

Table 4 shows the learning style of Marine Engineering students in terms of environmental element as to temperature. There is no significant difference between groups in terms of having temperature which depend on what is being done on what season and what they feel with the highest total weighted mean score of 3.56 and they like warm which is not very warm, but nowhere near cool and feeling better in the warmth of the sun which obtained the least total weighted mean scores of 3.31 and 3.23 on rank number 4 and 5, respectively. This implies that both groups do not want to work on warm environment. However, high performing students (3.54) like it more cool than warm but they can adjust if they need to compared to low performing students (3.33) but low performing students (3.45) like it very cool compared to high performing (3.25) as denoted by the computed p-value of 0.033 which is less than the 0.05 level of significance.

Table 4: Learning Style of Marine Engineering Students in terms of Environment Element as to Temperature

Learning Styles as to Temperature	High	Low	Total	VI	Rank	Sig.
1.I like it very cool. I feel warm when others are cool.	3.25	3.45	3.35	A	3	0.033*
2.I like it more cool than warm, but can adjust if I need to.	3.54	3.33	3.44	A	2	0.041*
3.It depends on what is being done, the season and what I feel.	3.65	3.47	3.56	SA	1	0.065
4.I like warm- not very warm, but I nowhere near cool.	3.23	3.39	3.31	A	4	0.187
5.I feel better in the warmth of the sun, I love sunshine.	3.19	3.23	3.21	A	5	0.263

*Significant at 0.05

Table 5: Learning Style of Marine Engineering Students in terms of Environment Element as to Design

Learning Styles as to Design	High	Low	Total	VI	Rank	Sig.
1.I always do my best thinking in bed, on a lounge chair or on the floor.	3.21	3.45	3.33	A	4	0.015*
2.I often do my best thinking in an informal environment.	3.11	3.37	3.24	A	5	0.034*
3.It depends on what is being done.	3.56	3.38	3.47	A	3	0.052
4.I think best in a wooden chair placed behind a desk, as in a library, classroom or the kitchen	3.67	3.32	3.50	SA	1	0.029*
5.I always work in a formal setting, I don't do my best unless I'm on a hard chair.	3.54	3.44	3.49	A	2	0.082

*Significant at 0.05

Table 5 shows the learning style of Marine Engineering students in terms of environmental element as to design. High performing students (3.67) can best think in a wooden chair placed behind a desk, as in a library, classroom or the kitchen compared to the low performing (3.32) as denoted by the computed p-value of 0.029 which is less than the 0.05 level of significance with the highest total weighted mean score of 3.50 on rank number 1. There is no significant difference on working in a formal setting, where they don't do their best unless they are on a hard chair and the design depends on what is being done as indicated by the computed p-values of 0.082 and 0.052, respectively. However, low performing students can always do they best thinking in bed, on a lounge chair or on the floor and in the informal environment as denoted by the p-values which are less than the 0.05 level of significance. This signifies that high performing students can best learn new things in a more formal environment compared to low performing students.

4. Conclusion and Recommendation

High performing students significantly differ in going to the library and the use of Power Point compared to low performing students. This signifies that high performing students need to be in the quiet place when learning and low performing students can learn the lessons even with the some kind of sounds in the surroundings. Both groups can highly work on lights which depend on what is being done and low performing prefer to always work in a low light compared to high performing students. High performing students can best learn new things in a more formal design of environment compared to low performing students. To provide a viable educational environment for all students, teachers should try to identify the learning styles of their students; match their teaching styles to students' learning styles for difficult tasks, capitalizing on students' preferred learning styles; and reinforce the knowledge through secondary and

tertiary modalities (Park, 2000). Having an effective classroom management is a skill that needs to be mastered by the Maritime Professional teachers (Laguador & Alcantara, 2013).

Student-centered teaching and learning is the recommended approach to modern day pedagogy especially in the Outcomes-based Education where the teachers served as the facilitator of learning activities rather than performing the traditional lecture method (Laguador, 2014). Classrooms may need to be equipped with complete sound system that would stimulate the enthusiasm of the students to learn the lessons with interactive sounds from the presentations of the teachers. Acquiring software application for laboratory courses of the students would provide hands-on experience for them to learn directly certain skills. Teachers are required to attend training and workshop to maximize fully the features of educational technology. Learning to adapt the environment and operations of a certain computer application would be somehow difficult especially to those baby boomers who are not really inclined with the new trends of digital natives.

English proficiency is manifested in the learner's ability to express facts, ideas, feelings and attitudes clearly and with ease as well as the ability to understand what they hear or read (Haber, 2014). Students could best learn the English Language if the environment even outside the classroom can consistently adapt English conversation in all transactions anywhere in the university. The singular cycle of communication that operates simply in the classroom, has grown into plural complexities due to the proliferation of information technology and the growing networks of telecommunication everywhere in the world (Fajardo, 2014).

Air-conditioning units of each classroom may need periodic maintenance to sustain the cold temperature which prefers the students to stay and study. The lighting system must also be checked if the amount of light in the library, laboratory and classroom is enough to provide for reading and activities during daytime and night time.

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