Learning Styles and Learning Strategies of Students in Technical Institutes Accredited by Technical and Vocational Training Corporation (TVTC) in Saudi Arabia

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ABSTRACT

The study determined the relationship between the learning styles and strategies of students in technical institutes accredited by TVTC in Saudi Arabia. It assesses the extent of practice of the students' along learning styles and the level of students' preference in the following strategies: Memorization, Problem Solving, Experimentation, Group Study and Immersion. Descriptive method was used and stratified sampling is utilized for the sample having a total of 321 student-respondents. Data were tabulated and interpreted using weighted mean, correlation analysis and analysis of variance. The study revealed that students practiced much of the learning styles; except for memorization which is moderately preferred, other strategies were highly preferred. The extent of practice on the different styles and the level of preference on the different strategies have low correlation. There is no significant difference in the extent of practice of the different styles and level of preference on the different strategies by institute and year level.

KEYWORDS

Education, Learning Styles, Learning Strategies, Accredited Technical Institutes, Technical Vocational and Training Corporation (TVTC), Kingdom of Saudi Arabia, Middle East, descriptive research design, Saudi Arabia

INTRODUCTION

Education is indispensable. It is a treasure that can never be taken away. Students acquire knowledge in their own peculiar way. They have their own style of learning where it affects on how they act in a group, learn, participate in activities, relate to others, solve problems, teach and work. Students preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively and analyzing and visualizing. They differ in styles where they find themselves satisfied and motivated.

Teachers know that students learn in different ways; the experience in the classroom confirms this every day. Classroom teachers who are skilled in adult learning principles and have experience with theories about student-centered learning and constructivism are more likely to adopt student-centered instruction (Stitt-Gohdes, Crews, & McCannon 1999); even if it is not the way they learn or prefer to learn. These teachers have broad views of how teaching can occur and strong beliefs about the need to engage learners in the learning process. They are aware of the changing demographics of classrooms and the influence of technology on the students' ways of learning (Glenn 2000; Stitt-Gohdes, Crews, and McCannon (1999) & Stitt-Gohdes 2003).

According to Glenn, (2000) "they are more likely to substitute self-directed learning opportunities *and interactive learning environments for the traditional lecture and make use of varied resources to create personally meaningful educational experiences".* In addition, well-accepted theories and extensive researches illustrate and document learning differences. Most educators can talk about learning differences, whether by the name of learning styles, cognitive styles, psychological type, or multiple intelligences. Learners bring their own individual approach, talents and interests to the learning situation (Chau, 2005).

An individual learner's culture, family background, and socioeconomic level affect his or her learning. The context in which someone grows and develops has an important impact on learning. Felder & Brent (2005) pointed out that *"students learn in many ways, like seeing, hearing and experiencing things first hand. But for most students, one of these methods stands out".*

The Fielder-Silverman model identifies three different learning styles; they are visual, auditory and tactile or kinesthetic. Visual learners have sharp and clear picture of an experience. Auditory learners identify sounds related to an experience and tactile or kinesthetic learners develop a strong feeling towards an experience.

If teachers teach exclusively in a manner that favors their students' discomfort level may be great enough to interfere with their learning. On the other hand, if teachers teach exclusively in their students' preferred modes, the students mat not develop the mental dexterity they need to reach their potential for achievement in school and as professionals.

FRAMEWORK

In this world where knowledge is very much accessible, acquiring it is no hard task. Keeping and integrating ideas and information in the total experience of a person depends on his learning style. Change is the only permanent thing in this world. Learning is a continuous process. It grows and develops. There is always something to learn and it is shouldered with a style of learning it. Even though these approaches look at learning styles in vastly different ways they all have merit for some students. However, an amalgamation or blending of these concepts is probably more effective than any one approach. The Dunn and Dunn approach would be most effective applied in a building designed to accommodate environmental changes. Many classrooms offer limited opportunities to change the lighting or sound levels, to eliminate visual distracters, or to provide a more casual seating arrangement for students. Varying teaching strategies make sure that students will occasionally learn in a manner compatible with their own learning preference but also expands their repertoire of alternative learning strategies in turn. The Multiple Intelligences Theory is very helpful for helping teachers recognize that students have differing aptitude in different subject areas, but it still requires the application of the kinds of learning strategies listed here to be effective. The MBTI and Gregorc's Style Delineator help teachers recognize how personality differences can either enhance or distract from communication between individuals ("Enhance Learning with Technology," 2011.).

Why is this important? Research has shown that students can perform better on tests if they change study habits to fit their own personal learning styles ("Enhance Learning with Technology," 2011). As observed, students in Saudi Japanese Automobile High Institute (SJAHI), Saudi Electronics and Home Appliances Institute (SEHAI) and Higher Institute for Plastic Fabrication (HIPF) in the Kingdom of Saudi Arabia manifest the peculiarity of each individual in learning. Most of the students are used to passive learning where teachers provide all the information that may inhibit learners to interact and participate actively. Some learn best in an active learning environment where they can observe and do things in real action like physically engaging themselves in workshop activities and immersing themselves in the actual situation through on the-job training. Others prefer to be alone or converse with themselves for reflective thinking while some prefer to discuss their classmates or with other people where they get to explain their own ideas and question things about the lesson. Some learners are just comfortable with listening, some are analytic where they check on accuracy and some just look on the whole picture of the lesson. Some students are taking down notes while the teacher is discussing while others just rely on their sharp memory. Others learn best when they get to picture things in their mind and when they are challenged with difficult learning tasks. Various learning styles and learning strategies are practiced and preferred by the students but all are after assimilating and integrating information in their personal experiences to mold them in entering the real world.

OBJECTIVES OF THE STUDY

The researcher aims to analyze the learning styles of the students and how these relates to learning strategy. As an educator, understanding students learning styles opens up their minds onto various learning strategies that blend each style. It will be an edge on their part to become more effective in facilitating the student's learning process.

METHODOLOGY

Research Design

The researcher used the descriptive method of gathering information about present conditions specifically, descriptive-survey method. A descriptive method describes and interprets relationships that exists; practices that prevail, point of view or attitudes that are held, processes that are going on, effects that are being felt, and trends that are developing. This method is best suited for this study since the descriptive method describes existing condition. It used purely current events. It involved population or universe based on the data gathered from the sample drawn from them (Pagoso, CM, G. and Guerrero DL, CR. 1998).

Participants, Sampling and Setting

The study was conducted at Saudi Japanese Automobile High Institute (SJAHI), Saudi Electronics and Home Appliances Institute (SEHAI) and Higher Institute for Plastic Fabrication (HIPF) in the Kingdom of Saudi Arabia during the Second Semester 2013-2014. The respondents were Levels 1, 2, and 3 students. The stratified sampling is utilized in determining the sample size of this study.

Table 1. Number of respondents for each of the levels and institutes

Groups	Population	Sample
SJHI		
Level 1	301	55
Level 2	291	53
Level 3	212	50
Sub-Total	**804**	**158**
HIPF		
Level 1	182	26
Level 2	180	38
Level 3	152	37
Sub-Total	**514**	**101**
SEHIA		
Level 1	110	15

Sample sizes are computed using the Slovin's formula.

The Respondents

Data Collection

The data were collected using a questionnaire. It has two main parts. The first part pertains to the assessment on the extent of practice of the students on the various learning styles. The second part assessed the level of students' preference on the different learning strategies. It was based on the learning styles questionnaires of Dr. Lawrence Williams, and Henry S. Tenedero of the Center for Learning and Teaching Styles, Philippines and the questions for the learning strategies were based on the gathered data of the researcher regarding the said topic.

In gathering the data needed, the researcher secured permission from the Director of each institute. The questionnaires were floated to the respondents.

For the validation of questionnaire, the draft was presented to the English Lecturers in Technical Higher Institute for Engineering and Petroleum (THIEP), Technical and Further Education (TAFE Arabia) and Petroleum and Natural Gas Institute of Technology and Training (PNGIT) in Dammam, Kingdom of Saudi Arabia. The comments and suggestions were incorporated for the refinement of the instrument.

Data Analysis

When the accomplished questionnaires were retrieved, the data were tallied, classified and presented in Tables using weighted mean, Pearson correlation, Analysis of Variance and one way classifications.

Scale	Range	Descriptive Rating
5	4.21 – 5.00	Very Much Practiced/Very Highly Preferred
4	3.41 – 4. 20	Much Practiced/Highly Preferred
3	2.61 – 3.40	Moderately Practiced/Moderately Preferred
2	1.81 – 2.60	Slightly Practiced/Slightly Preferred
1	1.00 – 1.80	Not at All Practiced/ Not at All Preferred

Interpretation for the computed Coefficient of Correlation was in accordance to the following table (Loftus & Loftus, 1988):

Range	Descriptive Rating
+ 0.90 - + 1.00	Very High Correlation
+ 0.70 - + 0.89	High Correlation
+ 0.40 - + 0.69	Moderate Correlation
+ 0.20 - + 0.39	Low Correlation

To test the significance of r, t-ratio was used (Loftus & Loftus, 1988).

RESULTS AND DISCUSSION

Extent of Practice of Students' Learning Styles

Learning Styles by Institute

Presentation of the level of learning styles of students by institute, the results showed a homogeneous type of students in spite of differences in institutes where they belong. For each of the learning styles, students practice much of them. Learning styles are not determined by inherited characteristics, but develop through experience. Styles are therefore not necessarily fixed, but can change over time, even from one situation to the next (Kolb, 1999; Honey and Mumford, 1992).

Responses of students from the accredited technical institutes revealed that the Tactile Learning Style is much practiced over the other two styles indicated with the computed mean of 3.83 as compared for the weighted means of Visual and Auditory at 3.68 and 3.62, respectively. For the responses of students from SEHAI and SJAHI, it could be observed that results showed consistency to that of the responses of HIPF whereby Tactile (weighted means 3.87 for SEHAI and 3.89 for SJAHI took number one slot for these learning styles.

Thus, given the consistencies in the responses of students from the three accredited technical institutes, overall results revealed that Visual (weighted mean is 3.62), Auditory (weighted mean 0f 3.58) and Tactile (weighted mean of 3.79) learning styles are much practiced by the students.

Learning Styles by Level

In terms of responses of students considering their levels, level 1 to level 2 students practiced much Visual, Auditory and Tactile learning styles. By comparing the computed weighted means, it could be observed that Tactile is consistently in number one slot having weighted means of 3.85 for Level 1, 3.80 for Level 2 and 3.78 for Level 3 while Visual followed at weighted means of 3.70, 3.65, and 3.59 as rated by Level 1, Level 2 and Level 3, respectively.

Auditory learning style is also much practiced by the students in the three levels where Level 1 students rated this style a weighted mean of 3.66, Level 2 students rated this style also with a weighted mean of 3.64 and for Level 3, a weighted mean of 3.48.

The emphasis on learning styles is not simply on the learner but on the interaction between the learner, the context and the nature of the task. Indeed, Bloomer and Hodkinson (2000) argue that learning styles are only a minor factor in determining how learners react to learning opportunities: the effects of contextual, cultural and relational issues are much greater learning styles (adapted from Coffield et. al. 2004).

Level of Preference for the Students' Learning Strategies
Learning Strategies by Institute

Presentation of the level of preference of students learning strategies is undertaken by institute and by levels HIPF students highly preferred them as revealed in the computed means of 4.09 for experimentation taking the highest slot, 4.00 for problem solving, 3.85 for immersion, 3.84 for group study and memorization at weighted mean of 3.42.

The same order of priority was given by students from SEHAI and SJAHI except that memorization is moderately preferred by the students from these two institutes. Overall results taking into consideration the responses of students from HIPF, SEHAI and SJAHI revealed that experimentation, problem solving, immersion and group study are highly preferred while the memorization is moderately preferred.

In essence, students preferred strategies that give them a better understanding of the lessons or topics under the study not merely memorizing them. Learning strategies are problem oriented, action-based; involve many aspects of learner, not just cognitive, since they are beyond cognition and flexible (Oxford, 1990).

Learning Strategies by Levels

Considering by level responses, consistent results to that of responses by institutes. Level 1 to Level 3 highly preferred experimentation, problem solving, immersion and group study are highly preferred while the memorization is moderately preferred. This corroborated with the conclusion that students in order to have a better grasp on the topics or lesson, involving other senses not just the eyes (normally utilized in memorization). Learning strategies are the techniques or skills used by an individual in accomplishing a learning task and appropriate instruction are needed to improve academic achievement (Fellenz, 1989).

Relationship between Learning Styles and Learning Strategies

To match learning strategies to suitable learners, it is important to understand how people learn (Chau, M.Y. 2005). Appropriate strategy training is believed to be able to enhance learning performance. Just as some individuals are heavily dominated by one style, or are particularly weak in another, so are some learning activities dominated by explicit or implicit assumptions about learning styles (Mei, 2004).

It is essential that a learning experience provide the opportunity for all types of learner to benefit. Students approach learning tasks differently. Teachers can help their students by designing instruction that meets the needs of individuals with different stylistic preferences and by teaching students how to improve their learning strategies (Oxford, R. 1998). It is important that we cater for an individual's preferred learning style, but we must also include opportunities to stretch the individual in the areas that they are weak. Knowing the individual's learning style is an excellent way to ensure effective learning, but we must be aware of each of our learners in a particular group. It

is always beneficial to provide opportunities for our learner to experience new ways and means of learning.

The student's extent of practice of the different learning styles is dependent on the student's level of preference over the learning strategies.

There are no significant differences in the perception of respondents or the learning styles and learning strategies when group by school. In spite of the differences in the institutes where students belong, their assessed level of preferences are the same.

Learning strategies are intimately related to learning styles (Ehrman, 1990). Even so, learning strategies are to some extent a function of a particular situation and more amenable to change than are cognitive styles (Henderson, 1984).

Thus, from these analyses, students belonging to the different institutes on the different levels, the assessed extent of practice of the learning styles and the assessed level of preference on the different learning strategies are the same at much practiced and highly preferred. Thus, response could be homogenous.

CONCLUSIONS

Based on the findings of this study, the following conclusions were drawn: (1) the students maximize the use of their senses in learning ideas or lessons. The combination of visual, auditory and tactile has proven to be effective as may be generated from their attitude of practicing much of this learning style; (2) students study and learn their topics or lessons using superficially but more deeply. The students prefer interactive learning such as problem solving, experimentation, group study and immersion where they could share their ideas and could apply concretely what they have learned; (3) the extent of practice on the different learning styles has no significant relationship with the level of preference on the different learning strategies. Hence, students are fairly motivated to adopt a learning style is corresponding to a certain type of learning strategy that the student think would be helpful in his study; and (4) having no significant difference on the students' responses whether they are from different institutes or different levels, they are concluded to be of homogeneous group having the same extent of practice and the same level of preference on the different learning styles and strategies.

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LITERATURE CITED

Bloomer, M., and Hodkinson, P. (2000) Learning Careers: Continuity and Change in Young Peoples Dispositions to Learning. British Educational Research Journal 26, 5, pp. 583-597.

Chau, M.Y. (2005). Connecting Learning Styles and Multiple Intelligences Theories Through Learning Strategies: An Online Tutorial for Library Instruction-http://libres.curtin.edu.au/libres16n1/Chau.htm

Coffield, F. et al/ (2004) Learning Styles and pedagogy in post-16 learning, Learning and Skills Research Centre Retrieved from http://www.lsda.org.uk?files/PDF/1543.pdf

Ehrman, M.E. (1990). Adult language learning styles and strategies in an intensive Training setting. Modern Language Journal, 74 (3), 311-27.

Enhanced Learning. (2011). Enhanced Learning with Technology. Retrieved from http://members.shaw.ca/priscillatheroux/styles.html.

Felder, R.M. and Brent, R. (2005). "Understanding Student Differences." An exploration of differences in student learning styles, approaches to learning (deep, surface, and strategic), and levels of intellectual development. J. Engr. Education, 94 (1), 57-72.

Fellenz, R. (1989). Effective strategies for teaching adults. Columbus: Merrill Publishing House.

Gardiner, H. (1983/2003). Frames of mind. The theory of multiple intelligences. New York: Basic Books.

Gardiner. L.F. (1996).Redesigning Higher Education: producing Dramatic Gains in Student Learning.

Glenn, J.M. (2000). "Teaching the Net Generation." Business Education Forum 54, No. 3, 6-8, 10, 12-14.

Henderson, J.L. (1984). Cultural Attitudes in Psychological Perspective, Inner City Books, Toronto, 72-78

Honey, P. and Mumford, A. (1992). The Manual of learning styles, Peter Honey Publications, Maidenhead

Kolb, D.A. (1999). The Kolb learning styles inventory, Version 3, Hay Group, Boston.

Loftus, G.R. & Loftus, E.F. (1988).Essence of Statistics (end Edition).New York: McGraw Hill.

Mei, C.Y. (2004). The Effectiveness of Strategy Training and Its Relationship with Learning Styles, Dissertation http://ec.hku.hk/maal/dissertation/details.asp?ID=2

Oxford, R.L. (1990a).Language learning strategies and beyond: A look at strategies in the context of styles. In S.S. Magnan (Ed.), Shifting the instructional focus to the Learner (pp. 35-55).Middlebury, VT: Northeast Conference on the Teaching of Foreign Languages.

Oxford, R.L. (1990b).Language learning strategies: What every teacher should know. Boston: Heinle & Heinle.

Oxford, Rebecca (1998). The Role of Styles and Strategies in Second Language Learning.

Pagoso, C.M., Garcia G., and Guerrero D.L., C.R. (1998). Fundamental Statistics for College Students. 333 pages including appendices and Bibliography, First published in 1978 and reprinted in 1992, Sinagtala Publishers Inc, 2nd Edition, 1998, National Bookstore.

Stitt-Gohdes, W.; Crews, T.B.; and McCannon, M. (1999). Business Teachers' Learning and Instructional Styles." Delta Pi Epsilon Journal 41, no. 2, 71-88.

Stitt-Gohdes, W.L. (2003). "Student Teachers and Their Students: Do Their Instructional and Learning Preferences Match?" Business Education Forum 57, no. 54:22-27.

Tenedero, H. S. (2005). "What Parents Need to Know About Learning", Center for Learning and Teaching Styles, Phils. Inc.