

*Assessing Learning Style of Entrepreneurial Students in MARA Professional College,  
Malaysia*

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Abstract

This study was done to examine different learning styles adopted by 106 randomly chosen Diploma level Entrepreneurship students in Melaka MARA Professional College. This study employed a set of questionnaire measuring on students' different learning styles using five likert scales to determine five categories of Dun and Dun (1978) learning styles which are environment, emotional, sociological, physiological and psychological. The result of the study showed that Emotional category (mean 3.719, SP = 0.461) is the most dominant learning style adopted by the respondents. The second category is the sociological style (mean 3.589 SP = 0.573), followed by psychological as the third preferred style (mean 3.496, SP = 0.402), the fourth dimension is physical style (mean 3.4770, SP= 0.533) and the least adopted style is the environment style (mean 3.157, SP= 0.314). The results from this study showed that the varieties of learning styles gave different impacts on students' academic performances. In addition, recommendations were given to improve the effectiveness of teaching and learning.

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## INTRODUCTION

A higher education institution plays an important role in producing high-quality graduates that will be an asset to the nation. Learning in Higher Education Institutions requires self-learners' commitment. Sheal (1994) states that learning is a process involving mental and physical abilities that leads to a qualitative change in a person's ways of interpreting, understanding and valuing something. The learning process is not only related to improve knowledge and recalling things that have been learned but also to learn on how to get the concept and information, and to apply the knowledge in life as well as the development of good attitudes (Hargreaves 1996).

Each individual has different ways towards the adoption of a teaching and learning process. Individual's method used to find, store and retrieve information is known as learning styles (Felder & Henriques 1995). Learning styles practiced by every person is different from each other. Each student began to form learning styles from early childhood and will continue to use these learning styles in their life. Learning styles practiced by an individual may be affected by the certain factors. According to Dunn and Dunn (1978), an individual's learning style is influenced by elements of environmental, emotional, sociological, physical and psychological.

Learning style is one of the important factors that can influence students' academic achievement (Doris, 1993; Liau, 2000). According to Abdul Ghani Awang, (1996) one of the factors of students' academic achievement deterioration is their failure to adapt to the teaching and learning approach in universities and their inability to find a right learning style for them. As a result, it will affect their academic performances thus unabling them from achieving excellent results in examinations.

Learning styles should be altered so that they are compatible with each lecturer's teaching style. Problems will arise when the lecturers do not diversify their teaching styles to meet the students' needs. Students will feel bored, unfocused, and lost interest in a particular subject and that will discourage them from studying (Darman Ash, 2000). Studies have proven that students' active involvement in the learning process will lead them to success (Hartman 2001; Dewar 1995). Important factor that encourage students to participate actively in the learning process base on their understanding in learning styles to meet the diverse learning styles (Birkey & Rodan 1995; Agogino & His 1995).

A study of the diversity of learning styles was conducted in Malacca City MARA Professional College (KPMBM) and focused on students majoring in Diploma in Entrepreneurship (DEn). KPMBM is an educational institution that operates under the auspices of the Higher Education Division of Majlis Amanah Rakyat (MARA). Apart from DEn programme, the College also offers Diploma in Islamic Banking and Finance (DBF). KPMBM has been in operation since 2009 and has produced a total of 249 graduates. Among of the key factors that contribute to KPMBM graduates' academic achievement is the individual learning style practiced by students. Therefore, a research on learning styles has been made to find out learning styles possessed by the students and its relationship to their academic achievement.

## **PROBLEM STATEMENT**

A survey conducted by Dunn and Dunn (1978) a century ago reported that each individual has his/her own learning style. As a result, each student has a variety of individual styles, strategies and learning rates. This diversity should be identified by the instructor. In addition, the learning style has a strong influence on academic achievement. Among the factors that cause low academic achievement are the students' failure to adapt to teaching style in educational institutions and their inability to find a right learning style (Darman Abu 2000, 2003; Abdul Ghani Awang, 1996). Dunn and Dunn's model (1978) was used in this study to determine different learning styles of the students in Diploma in Entrepreneurship, KPMBM. Beside, this paper also determines whether the students' learning styles/were influence by gender, academic performance and residential area. The main purpose of this research is to answer the questions above.

## **RESEARCH OBJECTIVES**

There are two objectives of this study:

1. Identifying learning styles practiced by Diploma in Entrepreneurship students of MARA Professional College Melaka City as a whole.
2. Identifying learning styles practiced by Diploma in Entrepreneurship students based on their gender, academic achievement and residence.

## **SIGNIFICANCE OF RESEARCH**

1. The college can identify and organize teaching and learning strategies.
2. The college can either improve or modify the regulation and infrastructure in order to provide a conducive environment.
3. Outcome of this study will give a great value in this field.

## **LITERATURE REVIEW**

Learning style of each individual must be understood as each of them will process the information obtained in different ways. From a psychological context, learning is defined as changes in individual behavior produced by the experience and the environment (Carlson 1987). By knowing how and why an individual chooses specific learning styles will add more information in their educational development. Cognitive staging may not be related to their age and achievements. According to Dunn and Dunn (1978), learning style refers to the manner in which the elements of the five basic stimuli that affect a person's ability to understand, interact and respond to the learning environment.

The cognitive theory shown that the development of human learning was based on their age. Although it is not a final determinant but generally the age stage will be associated with a person's maturity and susceptibility to choose or follow a particular learning style. Young male students usually prefer learning through simulation and games while elder students prefer lectures, structured instruction, drill and memorization.

Studies conducted to see the relationships between gender and teaching and assessment strategies show how gender affects problem solving styles (Nelson 1996). Tyson (1996) found that female students did not show a high level of cognitive performance in relative to male students in Mathematics subject but the difference is not very significant.

Harless (1996) mentioned that there is a correlation between learning style and gender but the significant differences between males and females are not obvious. This finding is supported by a survey conducted by Nik Mohd Rahimi (2000) which showed no significant difference between the group of men and women in the four learning styles. Solomon and Kerndall (1979) also raise an issue of gender because women were found to engage in highly structured activities while men prefer activities with lower structure. Mior and Jessel (1989) argue that women are more susceptible to engage in unfair thoughts on personal and collective situations. They should be encouraged to investigate the learning structure and how to work in group.

Individual learning style preference can be identified using Dunn Learning Style Inventory, Dunn & Stevenson (1997). Dunn (1995) stated that the studies of Mohd Najib and Nor Shafrin (2008) about learning styles have the correlation with the achievement of students either high or low achievement. However, Megowan study (1998) on 68 American students from the Faculty of Industrial Technology at the University of Mississippi showed no relationship between students' learning styles and their academic achievements. Similar findings were obtained by Cavanagh and Stephen (1995) in his study of 192 nursing students using Kolb learning style inventor where they found that there is no significant relationship between learning style and achievement. Norihan Abu Hassan (2001) also found that there are no significant differences between the learning styles of excellent, average and poor students in learning mathematics. These findings imply that the positive effects of learning style are the same for all students even if they have different capabilities.

## **RESEARCH DESIGN**

The study design used is descriptive survey and the data were collected using questionnaires. Descriptive study will provide insight or information at a specific time, in addition to developing future plan (Wiersma 1995; Mohd Majid Konting 1999).

## **POPULATION AND RESEARCH SAMPLE**

The population consisted 106 students studying Diploma in Entrepreneurship at Malacca City MARA Professional College. In this research, random sample selection was made (Babbie 2001; Mertens 1998; Mohd Majid 2005). The population was divided by students' gender, year of study, and residence. The sample size was selected based on the determination of the sample size formula presented by the Research Division, National Education Association and tables to determine the sample size presented by Krejcie and Morgon (1970).

## RESEARCH INSTRUMENTS

This questionnaire consists of two parts. Part A includes reference to demographic characteristics such as gender, place of residence and academic achievement. Part B consists of 45 items that have been translated and adapted from the learning style questionnaire Dunn & Dunn (1978). Five aspects of learning patterns studied by Dunn and Dunn model are environmental, emotional, sociological, physiological and psychological. A summary of the number of items by Dunn and Dunn model are shown in table 1.

Table 1 : Distribution of items for each category of learning styles

Category Of Learning Styles	Number Of Item
Environment	9
Emotional	17
Sosiological	5
Physical	9
Psychological	5
Total	45

To get the response, 5 point Likert scale was used wherein '1' stands for strongly disagree and '5' stands for strongly agree. The researcher has used Cronbach Alpha method to get the index of reliability of the questionnaires. Alpha coefficient approaching the 1:00 mark of the scale items that measure the same thing and show those items have high reliability. According to George and Mallery (2001) for an instrument, Cronbach Alpha coefficients level must be at least 0.7. In this study, questionnaire data is continuous type and collected using a scale interval called '*semantic differential technique*'. Thus, the method of Cronbach Alpha (Cronbach 1949; Norusis 2005) was used to measure the reliability between the items. Alpha value less than 0.60 was considered low and not acceptable, Alpha value between 0.60 and 0.80 is acceptable and Alpha values above 0.80 indicate high reliability item. Cronbach Alpha values above 0.60 are often used as an index of reliability in a research. A pilot study was carried out and the reliability of the components of learning styles are between  $\alpha = 0.86$  to 0.91. Implications of the value obtained showed that all of the items used for each component in the questionnaire survey have high reliability and consistency.

## FINDINGS

Studies conducted involved respondents from Diploma in Entrepreneurship students studying in Kolej Profesional MARA Melaka. Interpretations of mean scores shown in Table 2 was used to interpret the average mean score of each item.

Table 2 : Interpretations of mean scores

Mean Scores	Interpretations Of Mean Scores
1.00 to 2.33	Low
2.34 to 3.66	Average
3.67 to 5.00	High

Source : Barnett 2000; Jamil 2002; Jainabee 2005 & Mumtaz 2008

## Profile of Respondents

This study was done in Kolej Profesional MARA Bandar Melaka. Respondents for this study consist of 106 full-time students in Entrepreneurship Diploma program. The distribution number of students according to gender, place of residence, and academic performance are shown in Table 3 to 5.

Table 3 : Distribution of Respondents by Gender

Gender	Number	Percentage (%)
Male	39	36.8
Female	67	63.2
Total	106	100.0

Total of respondents were 106. From this numbers, 39 respondents (36.8%) were male the other 67 respondents (63.2%) were female.

Table 4 : Distribution of Respondents by Place of Residence

Place of Residence	Number	Percentage (%)
Hostel	80	75.5
Rented house	21	19.8
Family house	5	4.7
Total	106	100.0

Based on Table 4 above, it can be seen that 80 (75.5%) of the respondents live in the hostel provided by the collage. Whereas 21 (19.8%) of them live in rented houses and only 5 (4.7%) of them live with their families.

Table 5 : Distribution of Respondents According to Cumulative Grade Point Average (CGPA)

Performance	Number	Percentage (%)
1.66-1.99	1	0.9
2.00-2.49	5	4.7
2.50-2.99	53	50.0
3.00-3.49	41	38.7
3.50-4.00	6	5.7
Total	106	100.0

The majority of the respondents are within the moderate level of academic performance which CGPAs of 2.50 to 2.99 (50.0%), followed by 38.7% at high level performance of CGPA 3.00 to 3.49 and 5.7% of respondents in the excellent performance level of CGPA 3.50 to 4.00. It can also be seen that only 0.9% respondents are at a very low level of performance with CGPA of 1.66 to 1.99.

## The Findings of the Analysis of Learning Styles

This section answers the questions for the variation of learning styles practiced by the students of Diploma in Entrepreneurship of Kolej Profesional MARA Bandar Melaka. Descriptive analysis using the mean value is made by showing students' learning styles based on the 5 categories which are shown in the Dunn and Dunn Model.

Table 6 : Overall Learning Style Mean Analysis

Learning Style	Mean	Standard Deviation	Interpretation
Environment	3.157	0.314	Average
Emotional	3.719	0.461	High
Sosiological	3.589	0.573	Average
Physical	3.465	0.533	Average
Psychological	3.496	0.402	Average

Table 7 : Analysis of Learning Style Mean by Gender

Learning Style	Gender	Mean	Standard Deviation	Interpretation
Environment	Male	3.2707	.67191	Average
	Female	2.9169	.42963	Average
Emotional	Male	<b>3.8039</b>	.54322	High
	Female	3.6418	.40892	Average
Sosiological	Male	3.6103	.68048	Average
	Female	3.3940	.68044	Average
Physical	Male	3.4558	.68055	Average
	Female	3.3101	.55032	Average
Psychological	Male	3.3795	.71051	Average
	Female	3.3075	.59932	Average

Learning Style Analysis by Gender shows that male students have higher mean on learning styles for Emotional category (mean 3.80 SD = 0.543) and moderate for all other learning styles. For the female students, they showed an average mean for all learning styles. However, the highest mean for the girls is the emotional category with mean of 3.64 (mean 3.64 SD = 0.409).

Table 8: Analysis of Learning Style Mean by place of residence

	Place of Residence	Mean	Standard Deviation	Interpretation
Environment	Hostel	3.0595	.56439	Average
	Rented house	3.0265	.59099	Average
	Family	2.9333	.21660	Average
Emotional	Hostel	<b>3.7368</b>	.45381	High
	Rented house	3.6162	.52535	Average
	Family	3.4941	.40026	Average
Sosiological	Hostel	3.5200	.68592	Average
	Rented house	3.4476	.56535	Average
	Family	2.8400	.94234	Average

Physical	Hostel	3.3931	.60289	Average
	Rented house	3.3386	.59367	Average
	Family	3.0000	.63343	Average
Psychological	Hostel	3.3700	.62691	Average
	Rented house	3.2381	.16366	Average
	Family	3.1600	.26077	Average

Based on Table 8, analysis of Learning Styles by place of residence shows that students who live in the hostel have the highest mean in the emotional category. All the other categories are in the average level according to students' place of residence.

Table 9: Analysis of Learning Style Mean By Academic Performance

	Performance	Mean	Standard Deviation	Interpretation
Environment	2.00-2.49	2.9111	.38809	Average
	2.50-2.99	3.2013	.60430	Average
	3.00-3.49	2.8533	.44473	Average
	3.50-4.00	3.0185	.57270	Average
	Min	2.9961	.31450	Average
Emotional	2.00-2.49	3.6353	.21773	Average
	2.50-2.99	<b>3.8135</b>	.43590	High
	3.00-3.49	3.5366	.50946	Average
	3.50-4.00	<b>3.8431</b>	.29451	High
	Min	<b>3.7071</b>	.45932	High
Sosiological	2.00-2.49	<b>3.9200</b>	.86718	High
	2.50-2.99	3.6679	.60884	Average
	3.00-3.49	3.1561	.66860	Average
	3.50-4.00	3.4667	.58878	Average
	Min	3.5527	.57375	Average
Physical	2.00-2.49	3.2222	.52705	Average
	2.50-2.99	3.4990	.60373	Average
	3.00-3.49	3.2358	.56557	Average
	3.50-4.00	3.0000	.59628	Average
	Min	3.2393	.52667	Average
Psychological	2.00-2.49	3.5600	.32863	Average
	2.50-2.99	3.4746	.60140	Average
	3.00-3.49	3.0927	.66045	Average
	3.50-4.00	3.4333	.61210	Average
	Min	3.3894	.40132	Average

Academic performances of the students were categorized by CGPA achievement as follows:



Table 10 : Evaluation Cumulative Grade Point Average (CGPA) and Interpretation

CGPA	Interpretation
2.00-2.49	Low
2.50-2.99	Average
3.00-3.49	Good
3.50-4.00	Excellent

Learning Style Analysis of Academic Performance showed that excellent students have higher mean in the emotional category compared to other categories. This shows that excellent students most prefer emotional learning style (mean 3.843 SD=0.295) with the least preferred learning style is physical category (mean 3.000 SD= 0.596). Students with average performance have highest mean in emotional category (min 3.8135 SD=0.4359) and lowest mean in environment categories (mean 3.201 SD=0.604). Student with low performance have higher mean in sosiological category (mean 3.920 SD=0.867) and the lowest mean is in environment category (mean 2.911 SD=0.388).

## DISCUSSION AND IMPLICATION

The findings showed that emotional learning style is most dominant style adopted by the respondents among the others five learning style categories. The second preferred category of learning style practiced by the students is sociological category. The third category is the physical category and followed by psychological style and finally the environment category. The findings show that students of Entrepreneurship programme have high motivation value. The learning style practiced by students of entrepreneurship program is highly influenced by the emotional elements. The findings of this study agree with Low (2003) and Darman (2003) study who found that the most dominant style adopted by students is emotional category.

Motivation in this emotional category is the most dominant element in learning styles. This shows that motivation and encouragement given to students will help to improve their learnings. Students will be happy when they perform well in studies. Thus, students' emotions and motivations will improve when they obtain good marks or grades. In addition, feedbacks and constructive criticism from friends, parents and lecturers are needed to motivate the students towards a better learning process.

Motivation is categorized into two types: intrinsic motivation and extrinsic motivation. Intrinsic motivation is an internal motivation for students to participate in a learning process. This encouragement are needs, interests, attitudes and emotions naturally or guided by the requirements of the environment and experience. Meanwhile, extrinsic motivation is the insistence and encouragement to take action to get reward. In the learning processes, the intended benefits are in the form of scores, grades, and achievement in class. By having both motivations, students will work hard to achieve success in their field of study. Lecturers also need to give clear directions and aims to enhance students' understanding and encourage them to learn more effectively. Students also need to be exposed with the problem based learning or active learning, so that they will be more participate and involve in the learning process. Entrepreneurship education needs a different teaching pedagogy in which entrepreneurship education is linked to work-related learning (Dwerryhouse, 2001),

experiential learning (Kolb, 1984), action-learning (Smith, 2001) and entrepreneurial training (Gibb, 1999).

A study by Nelson (1993) and Zamri Mohamed Amin (2000) found that suitability and compatibility of learning styles will produce a good academic performance. Findings from the study of Nelson (1993) on the impact of learning style factors on college students' understanding and achievement show positive impact on the learning style of the student's academic achievement, where students who get the exposure to the learning styles usually acquire higher academic achievement compared to students who do not get exposure on the learning styles.

As a result of these findings, the researchers put forward some proposals to the college as follows:

- i. The college should help students to identify and practice learning style by conducting workshops and courses to increase students' awareness about their learning styles.
- ii. Lecturers also need to be exposed in order to understand the students' learning styles in order to plan more effective teaching process to be implemented during the lesson session. In addition, the diversity of the teaching and learning process needs to be applied so that students are more motivated in terms of their emotional aspects.
- iii. Curriculum restructuring for Entrepreneurship Diploma Programme conducted by the college in accordance with the findings of this study by added the curriculum of the 'hands on'. Students are given opportunities to run a business or real simulated business in college to practice what they have learned in class. Capital to buy materials to start a business is given by the "Bahagian Pembangunan Usahawan MARA". This is consistent with the learning style of sociological category owned by the majority of students' average performance. Sociological category involve relationships with peers and adults showed entrepreneurial traits possessed by students who will become entrepreneurs. If the objective of education is to prepare individuals to act as entrepreneurs, the most effective technique is to facilitate experiments by trying entrepreneurship out in a controlled environment, for instance through business simulation or role playing. (Hytti and O'Gorman, 2004).
- iv. The college also should conduct motivation program from time to time to motivate the students to succeed. Responsibilities assigned by the college for students to conduct a business or entrepreneurship carnivals should be continued because finding shows that learning style of emotional category also owned by entrepreneurial students. The college and the lecturer should give a clear and structured instruction for students who have learning styles of emotional category as they requires a clear and structured to perform certain tasks assigned to them.

## **PROPOSED EXTENSION STUDY**

1. Factors that influence learning styles practiced by students.
2. To distinguish between students who have been exposed to learning style knowledge and students who do not get the exposure.
3. The level of understanding of the lecturer towards students' learning styles to adapt teaching and learning process.
4. The relationship between learning styles and students' academic achievements.
5. The same study through qualitative methods such as interviews or combination of the two methods to get a better research results.

## **CONCLUSION**

Students' learning style is influenced by various factors. Among them is the yesteryear learning which is still been practiced by the students or due to the teaching and learning styles adopted by the education system. Each student has different learning style because each individual has his/her own methods to process the information. By identifying the advantages and disadvantages of each learning style practiced by the students, it will help administrators particularly lecturer to develop a teaching and learning process that is suitable and according to the level of their students.

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