Learning Styles among Students Pursing Entrepreneurship Course in Higher Education

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ABSTRACT

The purpose of the study was to identify the learning styles among entrepreneurship course students in higher education. The sample comprised of 270 students who had enrolled in Entrepreneurship Course as a compulsory course in their respective programme of studies at Universiti Putra Malaysia (UPM). Concrete Processing learning style was found to be the most preferred learning style. In particular, technical programme students, science programme students and literature programme students rated Concrete Processing as their most preferred learning styles. The findings of this study are encouraging and have shown a favourable development of entrepreneurship education in universities. The learning styles need to be identified clearly because there is a need to access and apply knowledge for problem solving purposes. They enable policy makers to know how the students learn, how they transform information to knowledge, and how they transfer new knowledge into applications. Students' learning styles can help lecturers to fully understand the learning process and also how a student acquires knowledge. As it can be recommended from the findings of this study, entrepreneurship education should focus on the learning of entrepreneurial competencies needed by the students who must be equipped to reproduce or acquire existing business. Learning entrepreneurial competencies can increase the interest and entrepreneurial intention of the students to choose entrepreneurship as a career. This can offer a solution for the current graduate unemployment problem in Malaysia.

Keywords: Learning styles, entrepreneurship course, literature, technical and science programme

INTRODUCTION

Entrepreneurship Education

Many universities and higher education institutions in Malaysia have recently introduced courses related

to entrepreneurship or majors in entrepreneurship. Entrepreneurship courses are aimed to provide undergraduates to create awareness of entrepreneurship as a career possibility. According to Davidsson and Henrekson (2002), entrepreneurship is an essential factor of the economic performance of a country. The role of entrepreneurship in promoting economic growth and job creation in any nation is now well recognized.

Angelo's (1993) classic article stresses that an investigation of students' learning styles helps teachers to know how their students learn more effectively. Since entrepreneurial competencies can be taught and learned, understanding their learning styles can help to improve teaching performance and enhance student learning. Developing and delivering entrepreneurship can be significantly affected by many factors. According to Custers and Boshuizen (1997), learning is essentially an internal process; only learners themselves can decide to learn and to act upon their learning. Changes occur in the way students learn, what students consider as important, and the context of that learning (Slotnick, 2001; Lloyd, 2007).

Entrepreneurship education which normally includes an exploration on starting and growing a business is often thought to be a likely subject for business discipline students but not for non-business discipline students like technical, science and literature/art students. According to Othman Talib *et al*. (2009), teachers need to identify the learning preferences and learning styles

of their students. The understanding of how best the students learn could then be matched with pedagogical approaches that are deemed appropriate for learning to take place at an optimal level. Thus, it is essential for educators to identify their students' learning styles in order to help them learn effectively and efficiently. An understanding of their learning style will provide students with the knowledge about their learning strengths and weaknesses and also make them more positive towards learning. On the relationship between learners' learning styles and entrepreneurship, Zaidatol *et al*. (2005) argue that learning styles play an important role in learning entrepreneurship at university. Cooney and Murray (2008) suggest that internationally, entrepreneurship or enterprise based modules are increasingly being incorporated into non-business courses and multi-disciplinary approach (Hill *et al.,* 2003; European Commision, 2008), and more significantly, "interest and demand in these modules is growing among science, engineering, and arts faculties." (Cooney & Murray 2008, p. 28). Therefore, there is a pressing need to broaden up the focus from merely business students to learners from other programmes such as science, technical and literature studies.

RESEARCH OBJECTIVES

The objectives of the research reported in this study were:

- To determine students' preferred learning styles in learning entrepreneurship.

- To determine the students'

preferred learning styles in learning entrepreneurship based on their academic programmes of study.

RESEARCH QUESTIONS

In order to accomplish the afore-mentioned objectives, the following research questions were posed:

- What are students' preferred learning styles in learning entrepreneurship?

- What are the students' preferred learning styles in learning entrepreneurship based on their academic programme of studies?

LITERATURE REVIEW

Learning Style

Learning styles are simply different approaches or ways of learning. One of the ways to understand how learners learn is to investigate their learning styles. Dunn and Griggs (2003) observed that the academic achievement of student is related to how they learn. There is no single way to define learning styles. Boyle, Duffy, and Dunleavy (2003) noted that learning is complex and there are gaps to study learning styles and effective learning strategies to examine the interrelationships of different aspects and components of learning. Acharaya (2002) argues that the theories of learning styles can be compacted and examined in four dimensions: 1) personality of the Learners; 2) Information Processing; 3) Social and Situational Interaction among Learners; and 4) Instructional Methods.

Stewart and Felicetti (1992) define learning styles as those learning opportunities that stimulate a student to learn. Fleming (2001) defines learning style as "as individual's preferred ways of gathering, organizing, and thinking about information (p. 1). Vermunt (1996) conceptualizes learning styles not just as generic (habitual) or preferred processing strategies, but rather as consistent patterns of learning activities that are systematically linked to learning beliefs and motivational orientations.

Vermunt considers the way a student learns as a learning style (Vermunt, 1992, 1996, 1998). Learning styles consist of four aspects, namely, processing strategies, regulation strategies, learning orientation and learning conception (Vermunt & Vermetten, 2004, p. 362). Processing strategies are thinking activities that students use to process information in order to obtain certain learning results, such as knowing the most important points in the study material. Metacognitive regulation strategies are activities students use to monitor, plan and control the processing strategies and their own learning processes. Mental models of learning are conceptions and misconceptions students have about learning processes. Learning orientations are personal aims, intentions, expectations, doubts that students may experience during their educational career (Vittorio et al., 1999).

Related Studies on Learning Styles

Various studies have been conducted all over the world on learning styles. In a study in South America, Lima et al. (2006) aimed

at identifying the learning styles of a group of cardiology residents (n=149, aged 29 (+2.7) with 63% being males) undergoing a training programme at the University of Buenos Aires. They also sought to identify the correlations of these styles. Data of their study were obtained through a 120-question survey developed by Vermunt and colleagues at the University of Tilburg in Holland. The study was carried out from April 2001 to April 2002, which identified four different learning styles: construction directed, reproduction-directed, application-directed, and undirected. In order to analyze the level of correlation with learning styles, the predominant learning styles were oriented towards knowledge application. In terms of variables, no differences regarding gender were detected. Those with a low final average registered a tendency towards reproduction-directed learning style, while the residents at public/state medical centres indicated construction-directed learning style tendencies. An application-directed learning style was found to predominate in this group of residents.

In an extensive review of literature on learning styles, Vermunt and Vermetten (2004) focused on a series of studies that have in common (a) the use of the Inventory of Learning Styles (ILS), an instrument aimed at measuring several components of student learning, namely, cognitive processing strategies, metacognitive regulation strategies, conceptions of learning, and learning orientations, and/or (b) an integrative learning theory focussing on the interplay between self-regulation and external regulation of learning processes as a theoretical framework. One of the objectives reviewed is to increase the integration of existing conceptualizations of student learning components and to link metacognitive aspects of students' learning to students' cognitive processing strategies and study motivation. In the theoretical part, this conceptualization is linked to the theoretical notions on teaching and instruction and on the interplay between learning and teaching. The review covers the theoretical framework and conceptualization of students' learning, a description of the instrument, the internal structure of learning strategies, conceptions, and orientations in different educational contexts, as well as developments in learning patterns during the school career, consistency and variability in students' use of learning strategies, dissonance in students' regulation of learning processes, the relationships between learning patterns, personal/contextual factors, learning outcomes and process-oriented instruction.

Research on learning styles has been carried out extensively in many developed countries like the United Kingdom and the United States of America. In Malaysia, research on learning styles has started recently, so the number of studies done is relatively lower than those in the UK or the US. This section presents a review of learning style studies in Malaysia.

Syed Jamal Abdul Nasir bin Syed Mohamad and Ahmad Saat Daud Mohamad (2005) aimed at identifying the learning styles of distance learners at the Institute

of Education Development, Universiti Teknologi MARA in Malaysia. Felder's Learning Styles Index (LSI) was used to analyze 63 male and 99 female students. Based on the results of their study, banking studies students tended to have a sensory style as compared to finance and business studies students who were more inclined towards a visual style. The results also showed that the mass communication and public administration students dominated in the visual and sensory styles.

Moreover, Sarimah Abd Razak, Ramlah Hamzah, and Rosini Abu and Zakaria Kasa (2008) studied the learning styles of 635 technical secondary schools students in Malaysia. The research findings showed that majority of the Civil, Mechanical, and Electronic Engineering students were accommodators and convergers. Meanwhile, Commerce and Agricultural Science students were accommodators, convergers and assimilators. These researchers recommended that teachers use instructional strategies which accommodate their students' learning styles. Four learning styles are defined based on the relative position of an individual along the two dimensions: convergence, divergence, assimilation, and accommodation. Convergers use abstract conceptualization to perform active experimentation. Convergers' action is based on the abstract analysis of the task and projected strategies for successful completion of the task. Divergers apply reflective observation to concrete experience and usually generate a creative solution. Divergers are most often creative learners

because they tend to consider multiple strategies for learning and problem solving. Assimilators, whose primary concern is the explanation of their observation, tend to combine abstract conceptualization and reflective observation. Assimilators get mainly involved with refining abstract theories rather than developing workable strategies and solutions. Accommodators use active experimentation and concrete experience and have a clear preference for hands-on learning. On the contrary, accommodators tend to act promptly and adapt to diverse situations. Kolb's Learning Style Inventory (LSI) scores reflect an individual's relative preference with respect to the four learning orientations and the corresponding learning style.

Additionally, Norhidayah Ramli (2008) carried out a comparative study on the learning styles of second year education (living skills) students (n=50) and the teaching styles of their lecturers at Universiti Teknologi Malaysia. The researcher found that the students felt drowsy during the class and recommended teaching styles which match learners' learning styles in order to ensure effective teaching and learning.

A Framework of Learning Styles

As one of the prominent figures in the area of learning styles, Vermunt (1996) has been interested in finding out how far individuals maintain a degree of consistency across learning situations. He defines learning style as a coherent collection of learning activities and orientation that learners typically apply. It deals not only with cognitive

processing, but also with motivation, effort and feelings (and their regulation). Within Vermunt's (1992 & 1996) framework, four learning styles are defined, namely, meaning-directed, application-directed, reproduction-directed, and undirected.

In order to fulfil the objectives of this study, only two domains of Vermunt's (1990) framework of learning styles, namely, 'cognitive processing' and 'regulation of learning' have to be considered. The other domains, namely, 'learning orientations' and 'learning approaches' were not relevant. Thus, they were excluded from its theoretical framework. Table 1 presents a detailed account of 'cognitive processing' and 'regulation of learning' as the domains of Vermunt's framework that were considered in the theoretical framework of this study.

As it can be observed from the table, in terms of their cognitive processing, learners can be divided into four groups. The first

group that follows 'scale deep processing' seeks for the relationships between concepts and is interested in building an overview of them. 'Concrete processors', on the other hand, find it more helpful to use some concrete examples in their learning activities. The third group of learners follow 'scale stepwise processing' that enables them to highlight the main points. There is a final group of learners, according to Vermunt, that do not often process, and therefore, they find it hard to study.

In terms of regulation of learning, Vermunt also divides learners into four categories. The first category belongs to those learners who are self-guided since they are intrinsically curious to find out what keeps them from learning. The second category belongs to those learners who are both external and self-regulated. They use problems and examples for evaluating their understandings of concepts that are

TABLE 1
Learning styles and their components (Vermunt, 1992 &1996)

Cognitive processing	Scale deep processing	Concrete processing	Scale stepwise processing	Hardly any processing
	Look for relationships between key concepts/ theories: build an overview	Relate topics to everyday experience: look for concrete example and uses	Select main points to retain	Find study difficult; read and re-read
Regulation of learning	Mostly self regulation	Both external and self regulation	Mostly external regulation	Lack of regulation
	Self-guided by interest and their own questions; diagnose and correct poor understanding	Think of problems and example to test understanding, especially of abstract concepts	Use objectives to check understanding; self-test; rehearse	Not adaptive

particularly abstract. The learners in the third category tend to rehearse or self-test. Finally, the last group lacks regulation and is not adaptive at all. It was based on this framework that Vermunt (1992) developed the Inventory of Learning Style (ILS). Based on these previous studies, Vermunt's (1990) framework of learning styles was chosen as the most suitable for the purpose of the present study. The researcher found the domains of this framework and the subscales of Vermunt's inventory directly relevant to the objectives of the present study.

METHODOLOGY

Design of the Study

The study followed the quantitative method. In particular, a survey technique was used to collect the data. The researcher used a descriptive survey and a questionnaire for the selected respondents at Universiti Putra Malaysia. Descriptive statistics, employing measure of central tendency like the mean, median, and standard deviation, was used to obtain an accurate measurement of learning style.

Population and Sample

The population of this study comprised the first and second year students who had registered in the compulsory Entrepreneurship Course at Universiti Putra Malaysia (UPM). The population of the students stood at 903, according to the Registration Department of the Faculty. The actual research focus was on the students who underwent the Entrepreneurship Course

which was taught as a core subject in UPM to Science, Literature and Technical students (n=270) in three different faculties.

Sampling Method and Sample Size

Purposive sampling method was used to determine the appropriate sample. As it was mentioned, a group of Science, Literature and Technical students, who had registered in a compulsory Entrepreneurship Course, were selected for this study. The logic behind this choice was that Science, Literature and Technical students presumably came from different academic areas and were therefore more likely to indicate different learning preferences. Certainly, selecting the sample from other majors and faculties would have added to the reliability of the findings, but the researcher was urged to limit the scope of the study to ensure that she could collect appropriate data to fulfil the objectives of the study, considering the time and financial constraints. The sample size that was determined was a total of 270 students who were randomly selected from the population.

Data Collection Procedure

A structured questionnaire was used to collect the primary data. This data collection method was deemed as more appropriate than other possible methods due to the large size of the respondents. An additional advantage of questionnaires is that they can guarantee confidentiality, which can lead to eliciting more reliable and valid responses (Ary *et al*., 1990).

Prior to data collection, preliminary preparations were made, which included

meeting the administrative officials in the respective faculties in UPM to get the permission to conduct the research. Additionally, lists of the students had to be retrieved from the respective faculties. The researcher also met the course coordinators to get their permission to administer the questionnaires. The researcher administered the questionnaire herself and also assisted the respondents should they encounter any difficulties in responding the questionnaire. The respondents were given 25 minutes to respond to all the items stated in the questionnaire before it was collected.

Data Analysis

A statistical technique was applied to interpret the collected data into meaningful research results for the study. The analysis for this study was carried out using SPSS version 16. The statistical methods used included a descriptive statistics that comprises frequency count, percentages, means, and standard deviation. The level of significance was set at .05.

Instrumentation

In order to meet the objectives of the research, information covering four key areas was investigated. For this purpose, three questionnaires were administered as one to the target respondents. The first questionnaire sought to elicit information on students' personal and academic backgrounds. This demographic questionnaire contained 11 questions on the respondents' personal (Section A: 4 questions) and educational (Section B: 7 questions) particulars. Section C contained two selected domains of the Inventory of Learning Styles (ILS) with 50 questions. Table 2 shows the structure of the survey questionnaire.

TABLE 2
Structure of Survey Questionnaire

Section	Title	No. of Items
A	Personal information	4
B	Educational particulars	7
C	Inventory of Learning Styles (ILS)	50
	Total number of items	**61**

Learning Style Inventory

The instruments selected for this study were chosen based on the research questions and the purpose of the study. One of the objectives of the study was to determine the learning styles of the students. A variety of instruments are available in the literature to study learning styles. The most appropriate instrument for this study is Vermunt's (1992) Inventory of Learning Styles. The ILS was originally designed by Vermunt (1994) for research in the Dutch higher education sector, and it is based on an integrative theory and conceptualization of students' learning that encompasses students' processing strategies, regulation strategies, learning orientations and mental models of learning. Vermunt (1994, 1998, 2004) provides an excellent review of the development, validation and application of the ILS.

The Inventory of Learning Styles (ILS) aims at measuring several components of student learning, namely, (a) a deep processing strategy which combines the learning activities of relating, structuring, and critical processing, (b) a stepwise processing strategy which reflects the learning activities of memorizing, rehearsing, and analyzing, and (c) a concrete processing strategy with concretizing and applying as its major learning activities. Regulation strategies refer to students' activities for regulating and controlling the processing strategies and they therefore indirectly lead to learning outcomes.

The domains of learning styles selected comprised cognitive processing strategies and regulation strategies. The selected domains of Vermunt's (1990) instrument include the following sub-scales:

Domain I: Processing strategies

1. Deep Processing
    b. Relating and structuring
    c. Critical processing

2. Stepwise Processing
    a. Memorising and rehearsing
    b. Analysing

3. Concrete Processing

Domain II: Regulation Strategies

4. Self-Regulation
    a. Self-regulation of learning processes and results
    b. Self-regulation of learning content

5. External Regulation
    a. Subscale external regulation of learning processes
    b. Subscale external regulation of learning results

6. Lack of Regulation

The Inventory of Learning Styles was developed for use in higher education (Busato *et al.*, 1998; Vermetten, Lodewijks, & Vermunt, 1999; Vermunt, 1998). The instrument has been rigorously tested for its validity and the findings have indicated that its components are based on sound educational theories (Boyle *et al.*, 2003; Markham, 2004). Research findings have also indicated that this instrument provides a comprehensive measure of respondents' cognitive, affective, and regulative abilities (Busato *et al.*, 1999; Coffield *et al.*, 2004). Vermunt (1994) reported good internal consistencies for the different scales of the ILS, with alpha coefficients varying between 0.68 and 0.93. Many researchers have investigated its validity and reliability (e.g., Boyle *et al.*, 2003; Coffield *et al.*, 2004; Severiens, 1997; Vermunt, 1998). The instrument has a history of adaptability to the study context (Ajisuksmo & Vermunt, 1999; as cited in Vermetten, Vermunt, Lodewijks, 1999). It has been used for determining the learning styles of adult students (Van Eekelen *et al.*, 2005; Vermunt & Vermetten, 2004) and has a history of international use (Boyle *et al.*, 2003; Vermetten, Vermunt, & Lodewijks, 1999).

Before selecting it as one of the

instruments of the study, the researcher made an analytical examination on the full set of the Inventory of Learning Styles (ILS). A panel of experts was also consulted before making decision to use the ILS. The instrument has other domains, but this study only concentrated on two domains which included processing strategies and regulation strategies. Table 3 shows the selected constructs of the ILS and their respective sub-scales.

The students' learning approaches and regulation strategies were determined using 50 items. They were scored on a five-point Likert scale with scores ranging from 1 to 5, each value signifying a different frequency of occurrence. as follows: (1) I do this seldom or never; (2) I do this sometimes; (3) I do this regularly; (4) I do this often; and (5) I do this always (Vermunt, 1996). Section C of the questionnaire (see Appendix) shows this particular instrument. The ILS scale scores were computed by adding up the item scores. There is no reversed scoring. Both the first (processing strategies) and the second domains (regulation strategies) consisted of 25 items.

An example of a processing strategy statement, belonging to the subscale "relating and structuring" is: "I try to combine the subjects that are dealt with separately in a course into one whole". An example of a regulation strategy statement, belonging to the subscale "self-regulation of learning processes and results" is: "To test my learning progress, I try to answer questions about the subject matter which

I make up myself". An example of a learning orientations statement, belonging to the scale "certificate directed" is: "The main goal I pursue in my studies is to pass exams". An example of a mental model of learning statement, belonging to the scale "stimulating education" is: "The teacher should motivate and encourage me".

As English was not the first language of the respondents, a professional translator translated the instrument into Malay language, the official language of the respondents. In order to test the accuracy of the translated version, the items were back-translated into English by another translator. The original and the back-translated versions of the questionnaire were then cross-checked to avoid probable inaccuracies.

In order to validate the instruments further, a pilot test was carried out on a small group of the target samples (n=30). The commonly accepted threshold value in social sciences is an alpha of .70 or higher in order to consider a questionnaire reliable because at alpha .70, the standard error of measurement will be over half of a standard deviation (Tuckman, 1978). Table 4 illustrates the reliability test results. As shown in the table, the Cronbach alpha test results reveal a good internal consistency with the alpha coefficient of .858 for deep processing, .875 for stepwise processing, .606 for concrete processing, .908 for self regulation, .706 for external regulation and .765 for lack of regulation, respectively.

TABLE 3
Constructs and sub-scales of the ILS

Constructs	Sub-scale
Cognitive processing	Deep processing:
	A) relating and structuring
	B) critical processing
	Stepwise processing:
	A) memorizing and rehearsing
	B) analyzing
	Concrete processing
Regulation of learning	Self-regulation:
	A) learning process and results
	B) learning content
	External regulation:
	A) learning process
	B) learning results

TABLE 4
Reliability test results for the ILS

Component	Cronbach Alpha
Domain I: Processing strategies	
Deep Processing	.858
Stepwise processing	.875
Concrete processing	.606
Domain II: Regulation strategies	
Self-Regulation	.908
External regulation	.706
Lack of regulation	.765

RESULTS

Students' Preferred Learning Styles in the Entrepreneurship Course at Universiti Putra Malaysia

The first research question focused on the students' preferred learning styles. Table 5 illustrates the mean and standard deviation of each learning style. Processing strategies Domain (M=3.16, SD=.62) and Regulation Strategies Domain (M=3.08, SD=.60) indicated a moderate level and were found to be the most preferred learning styles. External learning style (M=3.16, SD=.55) was the second most frequent, followed by Self Regulation (M=3.10, SD= .61), Step Processing (M=3.09, SD=.58), and Deep Processing (M=3.07, SD=.62). Finally, Lack of Regulation learning style (M=2.98 and SD=.64) was the least preferred.

Students' Preferred Learning Styles at Universiti Putra Malaysia Based on Their Academic Programmes of Study

The respondents were students from Literature (14.1%), Technical (11.9%) and Science programme (74.1%). Table 6 shows the students' preferred learning style based on their academic programmes. As indicated in the table, Concrete Processing (M=3.18,SD=.60) was the most preferred learning style among Literature students. The lowest mean score related to these students' was Deep Processing (M=3.11, SD=.51). As for the Technical students, their most preferred learning style turned out to be Concrete Processing (M =3.37, SD=.64). The least preferred learning style of this group was Lack of Regulation (M=3.11, SD=.59). Just like the Technical students, the Science students rated Concrete Processing (M=3.32, SD=.70) and Lack of Regulation (M=2.96, SD=.66) as their most and least preferred learning styles, respectively.

The results indicated that concrete processing was the most and lack of regulation was the least preferred learning style among UPM students. It was also

TABLE 5
Respondents' Learning Style Preferences

Lear ning Styles	low 1-2.33	Moderate 2.34-3.66	high 3.67-5.00	Mean	Standard deviation	Rank
Processing strategies Domain		✓		3.16	.62	
1. Deep Processing		✓		3.07	.62	5
2. Stepwise Processing		✓		3.09	.58	4
3. Concrete Processing		✓		3.30	.68	1
Regulation Strategies Domain		✓		3.08	.60	
4. Self Regulation		✓		3.10	.61	3
5. External		✓		3.16	.55	2
6. Lack Of Regulation	✓			2.98	.64	6

TABLE 6
Students' preferred learning styles based on their academic programmes

Programme	The most preferred learning style	The least preferred learning style
Literature	Concrete Processing Mean=3.18 Standard Deviation = .60	Deep Processing Mean=2.98 Standard Deviation =.51
Technical	Concrete Processing Mean=3.37 Standard Deviation =.64	Lack of Regulation Mean=3.11 Standard Deviation =.59
Science	Concrete Processing Mean=3.32 Standard Deviation =.70	Lack of Regulation Mean=2.96 Standard Deviation =.66

found that concrete Processing learning style was the most preferred learning style of the students in all the three programmes of study, including Literature, Technical, and Science.

DISCUSSION

The findings indicate that the participants rated their learning styles moderately in explaining their perception on overall Processing strategies Domain (M=3.16, SD=.62) and Regulation Strategies Domain (M=3.08, SD=.60). In addition, the results showed the mean scores for both Processing strategies (3.16) and Regulation Strategies (3.08) indicated a moderate level. Concrete Processing (M=3.30, SD=.68) learning style was found to be the most preferred learning style. External learning style (M =3.16; SD=.55) was the second most frequent, followed by Self Regulation (M =3.10; SD=.61), Step Processing (M

=3.09; SD=.58), and Deep Processing (M =3.07; SD=.62). Finally, Lack of Regulation learning style (M=2.98, SD=.64) was the least preferred.

Interestingly, the results of this study are not in line with those by Marambe *et al.* (2007). They carried out a study to compare the learning strategies, orientations and conceptions measured by means of a validated Sri Lankan version of the Inventory of Learning Styles (ILS) at the end of the first academic year for a traditional curriculum student group and a new curriculum student group. The results of their study showed that the students of the new curriculum reported greater use of critical processing (M=2.32, SD=.87), concrete processing (M=3.19, SD=.87) and memorising and rehearsing strategies (M=2.41, SD=.73) during the first year of the course. Marambe *et al.* (2007) reported the Asian students lack proficiency in English and need to rely on critical processing, memorising and rehearsing strategies to learn.

Zaidatol (2005) found that lecturers often utilized the lecture method followed by examination (M=3.85) and discussion method (M=3.71), respectively. Moderately utilized methods by the lecturers were providing reading materials, conducting tutorials and emphasizing group learning as well as using projects and case studies. Lectures seldom utilized games and simulations, field trips or visits, laboratory work, using diary or log book and film. Based on the results of the present study, it can be concluded that the way the students

are taught does not match their learning styles. This may make the lessons boring for the learners and may even result in the failure of the transfer of information to knowledge.

As for the students' preferred learning styles based on their academic programmes of study, Technical students (M=3.37, SD.64), Science students (M=3.32, SD.70) and Literature students rated Concrete Processing (M=3.18, SD.60) as their most preferred learning styles, respectively. According to Vermunt (2005), these students preferred applying the learnt subject matters by connecting the new knowledge to their own experiences and by using in practice what they learned in a course leading to knowledge integration. The results of this study are consistent with Eilington's (1996) who emphasized the importance of role-plays in the teaching and learning process that could allow students to experience real-life situations in a protected environment.

CONCLUSION

Concrete Processing (M=3.30, SD=.68) learning style was found to be the most preferred learning style. Technical students, science students and literature students rated Concrete Processing as their most preferred learning style. The findings of this study are encouraging and showing a favourable development of entrepreneurship education in universities.

Students' learning styles need to be identified clearly because there is a need to access and apply knowledge for problem solving purposes. They enable

policy makers to understand how students learn, how they transform information into knowledge, and how they transfer new knowledge into applications. Moreover, students' learning styles can help lecturers to fully understand the learning process, learn how a student acquires knowledge and conceptualization processing information. As it can be recommended from the findings of this study, entrepreneurship education should focus on the entrepreneurial competencies needed by the students who must be equipped to reproduce or acquire existing business. Learning entrepreneurial competencies can increase the interest and entrepreneurial intention of the students to choose entrepreneurship as a career. More importantly, this can offer a solution for the current graduate unemployment problem in Malaysia.

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