Learning Styles among High Achievers

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ABSTRACT

The process of teaching and learning will be more effective if teachers and learners know their potential, strength and weaknesses. The aim of this study is to identify the learning style among high academic achievers and students with average academic performance. Students with CGPA above 3.0 at UiTM Pahang are encouraged to join the high achievers club and they were selected as our respondents. An index of learning style questionnaires (ILS) developed by Felder and Solomon(2005) were distributed to the students from this club and selected students with average academic performance from science and social science faculties. The respondents' feedback were analyzed based on the four domains of learning styles which are active-reflective, sensing-intuitive, visual-verbal and sequential-global. The findings revealed that excellent students are more intuitive and more visual than students with average academic performance.

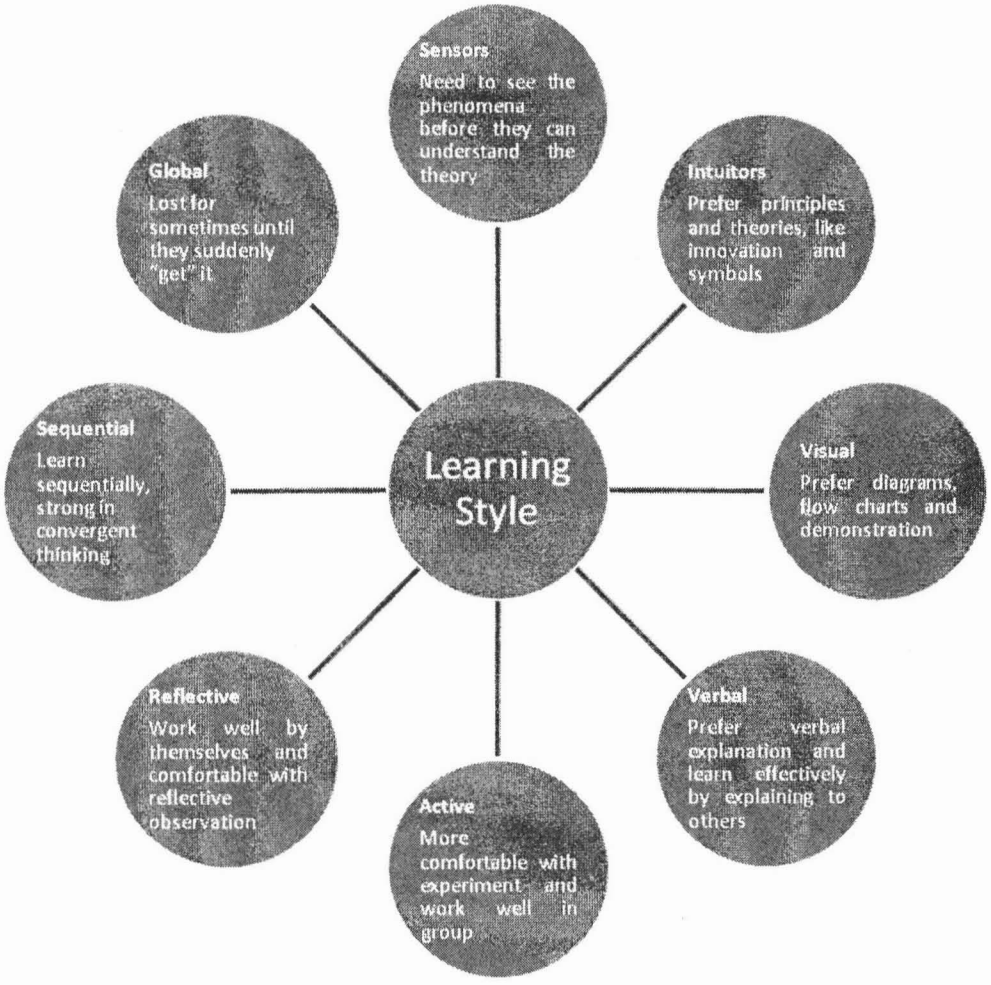
Keywords: *learning styles, active, sensing, visual, sequential*

Introduction

People spend most of their life time trying to understand or to learn new things. Generally, the way a learner learns and thinks varies from one to another. Learning style is defined as the way in which each learner begins to concentrate on process, absorb and retain new and difficult information (Dunn and Dunn's, 1992 as cited by Montemayor, Aplaten, Mendoza and Perey, 2009). Other than learning style, personality types and multiple intelligent are among the criteria being used to understand individual differences. Findings by Shariffudin and Foong (2007), a case study in Sarawak shows there are different patterns of multiple intelligence (MI) possessed by high achievers and students with average academic performance. The high achievers possessed the intelligence in the order of interpersonal, logical/mathematical, visual/spatial, intrapersonal, verbal/linguistic, naturalist, musical/rhythmic and bodily kinesthetic. On the other hand, the students with average academic performance possessed the skill of learning in the order of interpersonal, bodily/ kinesthetic, musical/ rhythmic, visual/spatial, logical/mathematical and verbal/linguistic, intrapersonal and naturalist. Based on data taken from the Centre for Applied Psychological Type (CAPT), as reported by Brightmen (n.d) revealed that 64% of 2282 of the university faculty at Georgia State University were intuitive. He also reported that intuitive students represented almost 83% finalist of the national scholarship in the United State.

Many researches have been carried out to identify learning styles among academic achievers. Montemayor, Aplaten, Mendoza and Perey, (2009) who applied the Dunn and Dunn's Learning Style model found that there is no significant difference in the learning styles between the low achievers and high achievers. They also claimed that learning style does not influence academic performance. Another group of researchers, Rogers and Hill (1980) claimed that the comparison of higher and lower achievers in the academic and fieldwork yielded inconsistent findings. They also suggested that an instructional program can influence learning style preferences. In their study, both bachelor's and master's students preferred learning styles that was teacher-structured, concrete and interpersonal. It is then the purpose of this study to examine the learning style patterns among high achievers and students with average academic performance based on Felder and Silverman (1988) model which comprises of four domains that are active-reflective, sensing-intuitive, visual-verbal and sequential-global. A brief explanation of each learning style is given in figure 1.

Figure 1: Learning Style based on Felder and Silverman(1988) Model.



Objectives

The objectives of this study are:

1. To identify the learning style of UiTM Pahang high achievers.
2. To compare the differences in learning style among high achievers and the students with average academic performance.

Sharing the findings with low achievers may assist them in changing their learning style to be effective learners. According to Donche, Coertjens and Petergem (2010), learning style during university and college are subject to change. The third year students learn in a more directed manner than the first year students. Students who changed from traditional teaching to learning style teaching have been reported to have higher test scores. For example, after applying Learning Style Model in the Frontier district, New York, the percentage of successful students increased to 66% from the previous year, maintaining 90% successful rate in second and third year (Brunner & Majewski as cited in Shaughnessy, 1998). Furthermore these findings can serve as a guide to the lecturers in planning, motivating and conducting high achievers. These students may achieve better academic performance than their peers, but the possibility of not achieving their full potential should be of concern to lecturers. Lecturers tend to pay more attention to low achievers, forgetting that high achievers too have their needs.

Methodology

The index of Learning Styles (ILS) questionnaire was used as an instrument to determine preferences on the four dimensions of the Felder-Silverman learning style model, i.e active-reflective, sensing-intuitive, visual-verbal and sequential-global. It is a forty-four item forced choice instrument developed in 1991 by Richard Felder and Barbara Solomon. The questionnaires were distributed to the students from science and social science faculties as a sample for students with average academic performance and members of High Achievers club of UiTM Pahang as a sample of high achievers. The hypothesis tested in this study is as follows:

H_0: There is no significant difference in learning styles between high achievers and students with average academic performance.

The data was analyzed using PASW 18.0 and the results are as follows.

Findings and discussions

As shown in Table 1, in total, 105 students were selected as sample whereby 41 of them are high achievers.

Table 1:Respondents' Profile

Category	Number of students
students with average academic performance	64
High achievers	41
Total	105

The following Tables 2 and 3 show the overall observation of the strengths of preferences for students with average academic performance and high achievers. Majority of students with average academic performance at UiTM Pahang were visual (92.19%) followed by sequential (73.44%), sensing (64.07%) and active (62.50%). Similarly, the majority of high achievers were visual (85.37%), sequential (63.42%), sensing (58.54%) and active (58.53%). The result of the study revealed that high achievers and students with average academic performance have the same preference of learning style. This finding is similar to the result of studies conducted by Renou (2004), Reyneri, Gerber and Wiley (2003), Drysdale , Ross and Shultz (2001), Castro and Peck (2005) and Tight (2007).

Normality test value shows that the entire data of variables tested in this study are approximately normally distributed. Therefore, the regression analysis and t-test can be used to answer the hypotheses of this study as we aimed to investigate the differences in learning style among high achievers and the normal students.

Table 2:Strengths of Preferences for Normal Students

Strength/ Preference	Active	Reflective	Sensing	Intuitive	Visual	Verbal	Sequential	Global
Mild	39.06	29.69	35.94	26.56	31.25	7.81	48.44	23.44
Moderate	18.75	7.81	25.00	9.38	39.06	0.00	25.00	3.13
Strong	4.69	0.00	3.13	0.00	21.88	0.00	0.00	0.00
Total	62.50	37.50	64.07	35.94	92.19	7.81	73.44	26.57

Table 3:Strengths of Preferences for High Achievers

Strength/ Preference	Active	Reflective	Sensing	Intuitive	Visual	Verbal	Sequential	Global
Mild	41.46	29.27	31.71	21.95	12.20	14.63	53.66	29.27
Moderate	17.07	12.20	26.83	19.51	46.34	0.00	7.32	4.88
Strong	0.00	0.00	0.00	0.00	26.83	0.00	2.44	2.44
Total	58.53	41.47	58.54	41.46	85.37	14.63	63.42	36.59

There is enough evidence to reveal that there is a significant difference between both groups for visual and intuitive (Table 4). This result indicates that high achievers are more intuitive and more visual compared to students with average academic performance. The percentage of visual learners for the high achievers in strong and moderate strength is higher than the students with average academic performance. The same pattern persists in intuitive mode of learning. Similar trend was seen in other groups of students where 92% recipients of Rhodes scholarships who are studying at Oxford University and almost 83% national merit scholarship finalists in the United States of America are intuitive (Brightman, n.d). Study conducted by Kia, Aliapour, and Ghaderi (2001) revealed that students with visual learning style in Payame Noor University in Iran have the greatest academic achievement. For other preferences, there is no enough evidence to reveal that there is a significant difference between students with average academic performance and high achievers.

Table 4:Independent Samples Test between High Achievers and Normal students

Test/ Strength	Levene's Test	t-test Value	p-Value
Active	Equal variance assumed	-1.141	0.258
Reflective	Equal variance assumed	0.582	0.564
Sensing	Equal variance assumed	-0.071	0.943
Intuitive	Equal variance not assumed	2.210	0.036*
Visual	Equal variance assumed	2.310	0.023*
Verbal	Equal variance not assumed	1.000	0.363
Sequential	Equal variance assumed	-0.643	0.522
Global	Equal variance assumed	1.166	0.253

* p-value less than 0.05

Conclusion

Based on the research findings, there is a significant difference in the two modes of learning styles between high achievers and students with average academic performance. However, generally there is no difference in the order of learning styles preferences between students with average academic performance and high achievers. Both groups of students show strong preferences on visual learning style though high achievers are more visual and intuitive compared to students with average academic performance. These are learners who learn best by seeing and need to see the body language and facial expression of the lecturers to understand the content of the lesson. They easily think in pictures and learn best from visual displays including diagram, illustrated text books, videos, flipchart and handouts (Montemayor, Aplaten, Mendoza and Perey 2009).

Finding also shows that the strength of preferences in both groups are in the order of visual, sequential, active, reflective, intuitive, global and verbal. Hence it is recommended that lecturers incorporate various methods in their teaching strategies. It is also recommended that trainings be conducted to equip lecturers on various learning styles since students' preferred learning style changed with the length of study in the university (Saat, Syed Mohamad and Ahmad, 2001). Students who has been exposed to learning styles and been informed about their learning styles preferences perform better academically (Dunn, 1990). Hopefully, by knowing the preferred learning styles of the students can help the lecturers to become more efficient and act as a guide in motivating the students to be high achievers.

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