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The Learning Styles of Penan Ethnicity Students in Institute of Teachers Education Sarawak Campus, Miri, Malaysia

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Abstract

The purpose of this study is to examine the relationship between the learning styles and the academic achievement of the third year PISMP Penan Ethnicity Students in Institute of Teachers Education Sarawak Campus, Miri. This study involved 37 respondents comprising eight male and 29 female students from various options. A set of questionnaire with a four-point scale was used as the instrument to measure the five stimuli of students' learning styles (Environmental, Emotional, Sociological, Physical and Psychological) by Dunn and Dunn (1978). The Alpha Cronbach coefficient value for this study is 0.847. The results indicate that the overall learning style of the respondents is generally moderate ($M=2.89$, $SP=0.17$). The two most dominant learning styles practiced by the respondents are the emotional stimulus learning style ($M=3.03$, $SP=0.22$) and the sociological stimulus learning style ($M=3.09$, $SP=0.22$) followed by the psychological stimulus learning style ($M=2.91$, $SP=0.34$), the physical stimulus ($M=2.83$, $SP=0.34$) and finally the environmental stimulus learning style ($M=2.60$, $SP=0.24$). There is a significant correlation found between the psychological stimulus with the academic achievement ($r = 0.333^*$, $p < 0.05$). However there is no correlation found between the others stimulus learning style with the students' academic achievement. The various learning styles adopted by these students give different effects to the norms and seriousness in their academic performance. Additionally, some areas of study to improve the teaching and learning strategy are also recommended.

Keywords: Learning styles, academic achievement, emotional stimulus, sociological stimulus, Dunn and Dunn Model's, Penan Ethnicity Students

Introduction

Keefe (1979) affirms that the effectiveness of teaching and learning can be improved if the teacher understands the learning style of their students. The learning styles for kids and teenagers are more towards pedagogical meanwhile adults favour andragogical approach (Knowles 1980). Malouf (1994) pinpoints several elements of which can create effective learning environment for adults namely,

- a. the need to learn
- b. secured environment to think and to socialize
- c. purposeful learning
- d. active involvement in teaching process
- e. constructive learning
- f. learners' experience immersion
- g. progression in learning
- h. two ways communication in learning

Reiff (1992) maintains that the frustration experienced by teacher and learner can be diminished by thorough understanding of one's learning style. In order to get a hold of learner's attitude, learning styles is an indicator to show how a learner learns and in what way the learner prefers. Several papers have been published on the international level focusing on the sound academic outcome when the strategies and activities suit the learners' learning styles (Dunn & Dunn 1985; Keefe 1987; Krinsky 1982). Locally, quite a number of these types of researches had been produced (Zalizan et al. 1998; Wan Zakri 2000; Ch'ng 2000; Lourdusamy 1994; Abdul Razak 1999; Badariah 1997; Maktab Perguruan Seri Kota 1996); however the same can't be said for teachers training field.

The foundation program for future teachers in Institute of Teachers Education Sarawak Campus, consists largely of young adult that came from multiple ethnicities. Therefore, the most applicable aspects of learning styles relative to improving their academic achievement should be identified. As for this research, focus was solely centered on students of Penan ethnicity.

Problem Statement

In the interest of making the process of lecture more effective, academic achievement of trainee teachers of multiple ethnicities in Institute of Teachers Education (IPGK) Sarawak Campus, ought to be identified. For trainee teachers of Penan ethnicity, their admittance to IPGK Sarawak is through the normal process and procedures as their counterparts from other ethnicities. However, their SPM result might not as good. This situation should not be taken lightly by lecturers for they must find the best approach in teaching to suit the Penan trainees learning style.

Bahrin et. al. (2007) have done an in-depth research pertaining the matter of learning style of students of Penan ethnicity in a form of questionnaires. The said study enables the researchers to explore and answer these questions what are the conventional learning styles among Penan learners? What are the dominant learning styles of Penan learners? Are there any co-relation between the learning style of Penan learners and their academic achievement? Consequently, a scientific research must be carried out to determine the most suitable learning style for Penan learners so that the learning process can be more effective.

Objectives

The objectives of the research are:

- a) To identify the learning style that has become a practice among trainee teachers of Penan ethnicity.
- b) To spot the dominant learning style among trainee teachers of Penan ethnicity.
- c) To observe the co-relation between the learning style of trainee teachers of Penan ethnicity to their academic achievement.

Research Questions

Research questions are as follow:

- a) What are the learning styles practiced among trainee teachers of Penan ethnicity?
- b) What is most dominant learning style among trainee teachers of Penan ethnicity?
- c) Are there any co-relation between the learning styles of trainee teachers of Penan ethnicity to their academic achievement?

Research Methodology

Conceptual Framework

Conceptual framework is a plan that assert the whole idea of a research (Polit and Hungler, 1995). Meanwhile according to Bell (2005), conceptual framework is a fundamental structure that explains the aspects of a research as a whole as well as the direction of a research. In this research, the researchers put forth the conceptual framework as a basis for the research. The framework contains independant variables (IV) which consist of five learning styles 1) *Enviromental based* 2) *Emotional based* 3) *Sociological based* 4) *Physical based* and 5) *Psychological based*, whereas for dependant variable (DV), the respondents' level of academic achievement. In this research, the researchers would like to enquire about the independant variable, the learning styles based on *enviromental, emotional, sociological, physical, and psychological* and its relation to the dependant variable that is the students' level of academic achievement. Diagram 1 explains the conceptual framework used by the researchers.

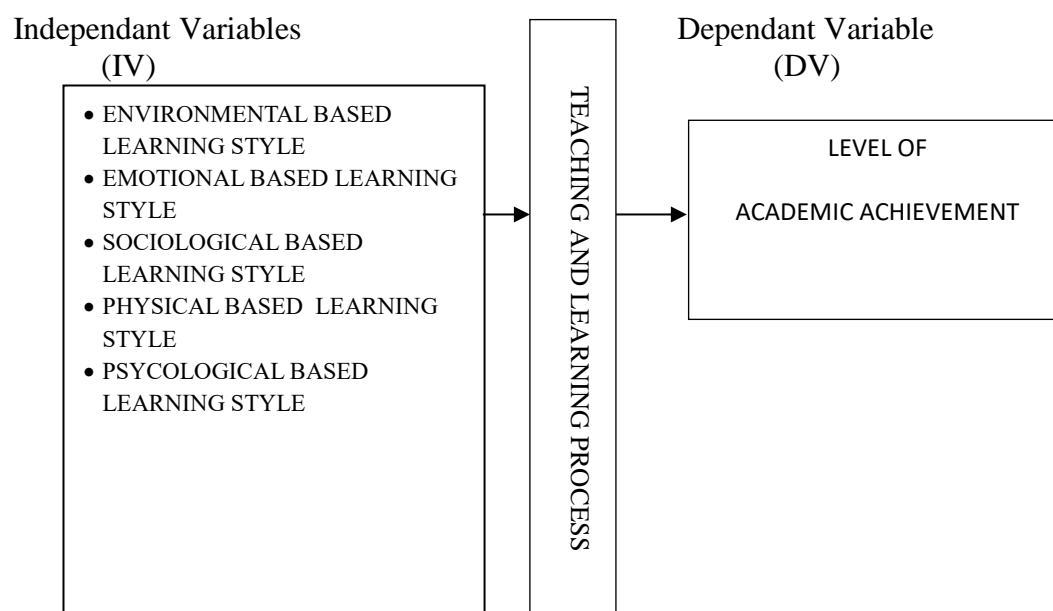


Diagram 1. Conceptual Framework

This research employs the method of review. The reviewing processes were done through the instrument of four points scale questionnaire and the main focus for this research in to observe the co-relation between learning styles to the academic achievement. To obtain the quantitative data, researchers have modified a research instrument based on the research done by Baharin et. al (2007) with four scales, (SD), (D), (A), and (SA) to get to the end result of this research.

To measure the internal consistency and the reliability of the questionnaire, a pilot study was carried out using Cronbach's alpha (Cronbach 1951). From the pilot test, the Cronbach's alpha value acquired was 0.847. The value shows that the items in this questionnaire in homogenous in nature and it means the questionnaire is able to measure a concept or a psychology trait well (Alias 1999).

The number of respondents in this research is 37 teacher trainees which consist of 8 male students and 29 female students from Penan ethnicity. Out of these 37 respondents, 22 are currently undergoing the Teacher Trainee Foundation Programme

for Bachelor of Education (PPISMP) while another 15 were in the 2nd semester undergoing the Teacher Trainee Programme for Bachelor of Education (PISMP).

The quantitative data from the questionnaire were analysed using the software of *Statistical Package for the Social Science (SPSS-PC for Windows-Version 10.0)* to get the descriptive statistic such as frequencies, percentage, mean and standard deviation while co-relation for statistical inference.

Literature Review

For this research, researchers put the focus on the usage of Dunn and Dunn model (1978). There are few reasons why the researchers opted to use the learning style model developed by Dr. Rita Dunn and Dr. Kenneth Dunn from St. John's University, New York in 1978. Firstly, this model was specifically used in education and among the most completed model in term of its scopes and becomes the common practise employed by many educationer (DeBello 1990). Furthermore, this model was thoroughly concluded and completed within a time span of 33 years with more than 850 researches carried out involving more than 135 higher level academic institution. This model has also won numerous accolades and recognitions, and was clinically proven apart from the comprehensively attested result in its approach. Lastly, Dunn and Dunn model was employed in researches from differring level from pre-elementary to higher level academic institution (Dunn & Dunn, 1978).

Dunn and Dunn ascertain in their decades long researches that the learning strategies of an individual is different from another. These learning styles can be categorized into five stimulus 1) *Enviromental* 2) *Emotional* 3) *Sociological* 4) *Physical* and 5) *Psychological*. These 5 stimulus influence the perception towards one's learning environment. Dunn dan Dunn (1978) affirms that the method, sources and appropriate program which suit one's learning strategy are able to improve the academic achievement and play a decisive role in one's academic excellence. Appropriate learning strategy which suits the discipline required in the course taken will aid a positive impact for academic achievement. Moreover, Dunn and Dunn states that a student will be able to improve the academic performance if the teaching and learning process can accommodate their learning style. This is exactly the problem and the objective observed in this research, to identify the dominant learning style and to find the relation between the academic achievement and the learning style of the students of Penan ethnicity. Table 1 explains the elements in Dunn and Dunn learning styles (1978).

Table 1
Dunn and Dunn Learning Style Model (1978)

Stimuli			Elements		
Environmental	Sound	Light	Temperature	Design	
Emotional	Motivation	Responsibility	Task Persistance	Structure	
Sociological	Peer	Alone	Group	Adult	Variety
Physical	Senses Percetion	Intake	Time	Mobility	
Psychological	Analytic	Global	Impulsive	Reflective	Insistence

Note: Table above cited from Dunn and Dunn (1978).

There are several researchers have modelled their researches based on Dunn dan Dunn (1978). Numerous findings about learning styles have been recorded and these researchers looked upon it with different lights and approaches. Locally, there are numbers of researches done in quite a similar light for example Nur Sofurah Mohd Faiz, Maziana Mohamed dan Rosfaszlizah Zahit, 2008; Baharin Abu et al., 2007; Azizi Yahaya, Shahrin Hashim, Jamaluddin Ramli dan Ahmad Johari Sihes, 2006; Kartini Abdul Mutalib dan Ahamad Shabudin Yahaya, 2013; Low Xin Xin, 2003; Yee Mei Heong, 2002; Marazlina Mansor, 2004, Zalizan et al. 1998; Wan Zakri 2000; Ch'ng 2000; Lourdusamy 1994; Abdul Razak 1999; Badariah 1997; Maktab Perguruan Seri Kota 1996), to name a few. On the other hand, there are also researchers that look in to the correlation between learning styles and academic achievement. Among these name are, Alireza Jilardi Damavandi, Rahil Mahyuddin, Habibah Elias, Shafee Mohd Daud, & Jafar Shabani (2011); Mohd Nihra Haruzuan Mohd Said and Chang Guek Ngo (2011); Terragrossa, R. A., F. Englander, & Z. Wang. (2009); Terragrossa et al. (2009); Yufiza Yusof (2004); Baharin Abu et al. (2007); Juliawati Ibrahim (2006); dan Ong Sze Chong (2008); and Yildirim, Acarb, Bulk and Sevinc (2008). Despite having quite a huge numbers of researches, the same study on trainee teachers' field in Malaysia is rather limited.

Based on previous researches, it is noticeable that the successful students learn effectively and they also able to maintain their learned knowledge longer had these students taught based on their conducive learning environment that take their learning style into consideration. Therefore, teachers and lecturers need to know the most suitable learning styles when conducting a lesson so that their students can see themselves progress academically. The failure to manipulate these learning styles can bring an enormous impact in the effectiveness of the learning process due to the students' inability to adapt and going against their learning style (Sims and Sims, 2006).

Findings

The research sample consists of 37 trainee teacher of Penan ethnicity in IPGK Sarawak. The profiles of the respondents are as shown in Table 2.

Table 2
Respondents' Profile

	Profile	Frequencies	Percentage
Gender	Male	8	49.6
	Female	29	50.4
Group	PPISMP	15	30.2
	PISMP 2nd Sem.	22	31.0
Origin	Baram	32	23.0
	Outside Baram	5	10.3

(a) Learning styles practiced by trainee teachers of Penan ethnicity

Table 3

Overall Level of Mean of Learning Styles

Level of learning styles	Mean(M)	Standard Deviation (SD)	Minimum score	Maximum Score
Low (1.00-1.99)				
Medium (2.00 – 2.99)	2.89	0.16	2.54	
Hogh (3.00-4.00)				3.23

Table 3 shows the overall level of learning styles practiced trainee teachers of Penan ethnicity. The result shows that the overall levels of learning styles are on medium level ($M = 2.89$, $SD=0.16$). The minimum score is 2.54 and the maximum score is 3.23.

(b) The most dominant learning style of trainee teachers of Penan ethnicity?

(c)

Table 4

Pattern of dominant learning style

Learning Style	Level	Mean	Standard deviation	Minimum Score	Maximum Score
Environment	Low (1.00-1.99)				
	Medium (2.00 – 2.99)	2.60	0.24	2.11	
	High (3.00-4.00)				3.00
Emotion	Low (1.00-1.99)				
	Medium (2.00 – 2.99)		0.22	2.57	
	High (3.00-4.00)	3.03			3.43
Sociology	Low (1.00-1.99)				
	Medium (2.00 – 2.99)		0.25	2.70	
	High (3.00-4.00)	3.09			3.70
Physical	Low (1.00-1.99)			1.89	
	Medium (2.00 – 2.99)	2.83	0.34		
	High (3.00-4.00)				3.44
Psichology	Low (1.00-1.99)				
	Medium (2.00 – 2.99)	2.90	0.34	2.13	
	High (3.00-4.00)				3.75

Table 4 shows the learning styles of trainee teachers of Penan ethnicity. There are two most dominant learning styles practiced by respondent can be identified,

sociologically stimulated ($M = 3.09$, $s.d = 0.25$) and emotionally stimulated ($M = 3.03$, $s.d = 0.22$). These 2 learning styles are in the highest level of Mean score, which lies between the range of 3.00 and 4.00, followed by Psychologically stimulated ($M = 2.9$, $s.d = 0.34$), physically stimulated ($M = 2.83$, $s.d = 0.34$) and environmentally stimulated ($M = 2.60$, $s.d = 0.24$).

(i) **Mean for Sociologically stimulated learning style**
(ii)

Table 5

Mean Items for Sociologically Stimulated Learning Style

Num	Sociological stimulant	Mean	Level
B24.	I always give full cooperation to others to complete the given tasks.	3.16	High
B25.	I will get assistance from peers when I encounter difficulties in learning.	3.30	High
B26.	I like to get views from adults regarding my tasks.	3.32	High
B27.	I like to do thing my own way.	3.05	High
B28.	I like to study alone.	3.03	High
B29.	I like to study with one or the person only.	2.92	Medium
B30.	I like to study together in a group with large number of peers.	2.78	Medium
B31.	I like to be accompanied by adult while I study.	2.49	Medium
B32.	Sometimes I like to be alone when I study.	3.59	High
B33	Sometimes I like to study together with my peers.	3.24	High
Sum of average mean score		3.09	High

Table 5 shows the mean score for sociologically stimulated learning style. Generally, the mean score for sociologically stimulated learning style placed between the mean score of 2.49 and 3.59. The average mean score for this learning style in 3.09 ($s.d = 0.25$). The high mean score (above 3.0) indicates that the respondents favour sociologically stimulated learning style. Several items that give a huge influence to this style are B24, B25, B25, B27, B28, B32 dan B33. Item with the highest score is item B32, (Sometimes I like to be alone when I study). Item B31 (I like to be accompanied by adult while I study) scored the lowest mean with 2.49.

From this mean score, it is clear that trainee teachers of Penan ethnicity like to study alone, like to get views from adult when it comes to their study, getting help from their peers in study, like to study with peers and giving assistance when needed.

(ii) **Mean Items for Emotionally Stimulated Learning Style**

Table 6 shows mean score for emotionally stimulated learning style. As a whole, mean score for this style of learning are in between 1.73 and 3.89. Average mean

score obtained here is 3.03 (s.d = 0.22). The high value (above 3.0) clearly indicates that the trainee teachers favour this learning style. Items like B10, B11, B12, B13 B16, B17, B20, and B22 gave a significant effect in influencing the outcome in this table. Item with the highest mean score is B10 while item B14 scored the lowest.

Items with high mean score show these trainee teachers aim for a good grade. Besides, the parents' feedback and advice seem to play an important role in driving them in their study as well as to achieve a good result. At their campus, encouragement from lecturers becomes a factor in motivating them apart from the willingness to learn something new. Focus on the given tasks and the compulsion to complete the tasks also played an important part in their study.

Table 6

Mean Items for Emotionally Stimulated Learning Style

Num.	Emotionally Stimulant	Mean	Level
B10	I want to get a good result	3.89	High
B11	Feedback and advice from parents can help me in my learning process.	3.84	High
B12	Feedback and advice from lecturers can help me in my learning process.	3.68	High
B13	I feel happy when I get a good grade in my study.	3.73	High
B14	.Nobody cares about my good grade	1.73	Low
B15	I am able to complete my tasks in brief period of time.	2.22	Medium
B16	In my study, I will give my focus to complete my tasks.	3.22	High
B17	I like to learn something new.	3.49	High
B18	I find it difficult to complete all my tasks	2.51	Medium
B19	I easily feel bored in something that makes me want to do something new.	2.65	Medium
B20	I will finish everything I started.	3.19	High
B21	I will complete my tasks on time.	2.76	Medium
B22	I will do things I have promised to do.	3.11	High
B23	I always forget to do or to complete tasks given.	2.38	Medium
Overall Average Mean		3.03	High

Co-relation between learning styles of trainee teachers of Penan ethnicity to the academic achievement

Table 7

Co-relation between learning styles of trainee teachers of Penan ethnicity to the academic achievement

Learning Styles	Cause of Variation	CGPA
Environmental	Pearson correlation	-0.249
	Sig. (2-tailed)	0.137
	N	37
Emotional	Pearson correlation	0.141
	Sig. (2-tailed)	0.405
	N	37
Sociological	Pearson correlation	0.333*
	Sig. (2-tailed)	0.044
	N	37
Physical	Pearson correlation	0.119
	Sig. (2-tailed)	0.482
	N	37
Psychological	Pearson correlation	0.322
	Sig. (2-tailed)	0.052
	N	37
Overall	Pearson correlation	0.249
	Sig. (2-tailed)	0.137
	N	37

*Significant on 0.05

The outcome for the correlational analysis shows that there is significant correlation on the level of 0.05 for sociologically stimulated learning style ($r = 0.333^*$, $p < 0.05$). Such occurrence indicates a substantial and significant relation for sociologically stimulated learning style to trainee teachers of Penan ethnicity. This finding confirms that sociologically stimulated learning style becomes the biggest influencer to the learning style of trainee teachers of Penan ethnicity as compared to other learning styles.

Discussion

From the research, it is visible that the learning style of trainee teachers of Penan ethnicity is on the medium level ($M=2.89$, $s.d= 0.17$). Meanwhile, the most dominant learning styles practiced by the respondents are sociologically stimulated learning style ($M= 3.09$, $s.d= 0.25$) and emotionally stimulated learning style ($M=3.03$, $s.d=0.22$). For both sociological and emotional learning styles, the mean score recorded were on the highs (between 3.00 and 4.00). As for learning styles based on psychological, physical, and environmental the recorded score were on medium level with ($M=2.91$), ($M=2.83$) and ($M=2.60$) respectively. There is a noticeable similarity between this study and one completed before by Habibah Mohd Samin (2014)

whereby Habibah found out that the most dominant learning style of the respondents was emotional based ($M=3.03$, $SD=0.22$) and sociological based ($M=3.09$, $SD=0.22$), followed by psychological based ($M=2.91$, $SD=0.34$), physical based ($M=2.83$, $SP=0.34$) and environmental based ($M=2.60$, $SD=0.24$). Additionally, in research by Nur Sofurah Mohd Faiz *et al.* (2008) also displays a striking resemblance with emotional based learning style ($M=3.91$) placed highest, followed by sociological based ($M=3.63$), physical based ($M=3.61$) and lastly environmental based with 3.53 mean score. Another likeness can be seen in the research done by Baharin Abu et al. (2007). In their research on Year 2 students of Faculty of Educational Knowledge, UTM, the emotional stimulation learning styles ($M=3.09$, $s.d=0.63$) charted highest. It was followed by psychological, physical, environmental, and sociological learning styles. On the other hand, Kartini Abdul Mutalib dan Ahamad Shabudin Yahaya (2013) also recorded that the most dominant learning styles were emotional based ($M=3.41$), sociological based ($M=2.69$), physical based ($M=2.75$), psychological based ($M=2.69$), and lastly environmental based ($M=2.51$).

This very research shows that sociological based learning style displays a significant correlation to respondents' academic achievement ($r = 0.333^*$, $p < 0.05$). It suggests the trainee teachers of Penan ethnicity could benefit from some aspects of sociological based learning style in order to aim for an admirable academic achievement. Items such as *studying alone, favouring views from adults regarding tasks, benefitting from assistance from peers when encountering difficulties in learning, favouring to study together in a group with large number of peers, ability to give cooperation towards others in completing tasks* should be employed with these trainee teachers in order to improve their academic achievement. In Habibah Mohd Samin (2014), she also found out about the significant correlation towards sociological based learning style ($r=0.669^*$, $p<0.01$). Nik Mohd Rahimi *et al.* (2000) maintain that the respondents keen on all learning on their study namely memorization, discussion, practice and motivation. Mohamad Zailani Jaya (2001) observes the trainee teachers of Orang Ulu ethnicity become more confident, opinionated and willing to take a risk despite having their idea opposed either by lecturers or their peers. Thus, the importance to suit the learning styles with teaching process in classroom must be taken into consideration to improve students' achievement

Conclusion

Learners of different culture, race and creed might have a different outlook on the concept of learning (Wan Zah 2000). Griggs and Dunn (1995) affirms that the value of a culture of certain people might give an effect on their learning process. Background culture of a race might give an impact on opting for the most suitable learning style as the environment can influence the way one think (Tamao-Katsuo 1987). The trainee teachers might have affected by their race, culture, origin, socioeconomic status as well as the difference in environment that make them incline towards one learning style.

In research by Keefe (1979), he affirms that the inclination of the teachers to conduct their lesson based their own learning style preferences and neglecting student' learning style can cause the learning process to be at odds. This is because the strategies and activities employed by teachers might confront the interest and the preferences of their students, thus making the lesson ineffective.

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