

# LEARNING STYLES AMONG YEAR 1 SEMESTER 1 NURSING STUDENTS IN COLLEGE OF NURSING KUBANG KERIAN, KELANTAN

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## ABSTRACT

**Introduction:** Students learn in many ways. Some students are visual learners, while others are auditory or kinesthetic learners. The purpose of the study is to identify the learning style of the students and factors that influence their learning styles.

**Methods:** This is a descriptive study with cross-sectional design. Convenient sampling was used. In this study, a total of 51 nursing students were involved. A set of questionnaires using VARK (Visual; Auditory; Read/Write; Kinesthetic) inventory was used. Descriptive statistics and Chi-square test were use.

**Results:** The learning styles of the respondents were mostly kinesthetic learning style and auditory learning styles which is 14(27.5%) for both, ten respondent had combinations of various styles, seven respondents had read write learning style and six respondent had visual learning style which is 13.7% and 11.8% respectively. Chi-square test shows that there was significant difference between learning style and respondents' demographic factors of previous school and number of siblings, where  $p$ -value  $< 0.05$ . For others demographic variables, result was not statistically significant ( $p > 0.05$ ).

**Conclusion:** In order to achieve the goal of student learning it is important to use a combination of teaching methods and to make the classroom environment as stimulating and interactive as possible.

**Keywords:** *Learning Styles, Nursing Students, VARK Inventory*

## INTRODUCTION

Education is commonly referred to as the process of learning and obtaining knowledge at school, in a form of formal education. Education is important, because education provides people with the tools and knowledge they need to understand and participate in today's world. According to Malloy (2007) the teaching-learning process is complex and influenced by many factors. It is measured by student's academic achievement. Marcy (2001) proposed that students need to recognize their learning style which will enhance student's education and be integrated into their study habits. Among many factors that contribute to academic performance, learning styles and personality types have

been identified as significant predictors of academic performance. According to Felder & Brent (2005), learning style is about cognitive, affective, and psychological behaviors that indicate how learners perceive, interact with, and respond to the learning environment. Meanwhile, teaching style is concerned with skills and techniques used by an instructor in conjunction with personal knowledge, preparation, and experience to create an effective learning environment (Reitz, 2007). Learning styles have been found to be one of the most salient personality-related variables when investigating academic performance. This research study is to identify the learning style and the demographic factors associated with learning styles of Year 1 Semester 1 nursing students of College of

Nursing Kubang Kerian, Kelantan.

## **LITERATURE REVIEW**

### **Learning Style Strategies**

The term “learning styles” was probably first used by Thelen (Madeline *et al.*, 2003) who discovered group dynamics at work. Learning style may also be defined as the tendency to adopt a particular strategy of learning. Teachers, then, should have the ability to understand how students learn. There are many models and theories about learning styles. Fleming & Bonwell (2006) listed learning strategies which facilitate students with VARK learning style. The VARK Learning Style Inventory consists of Visual, Auditory, Read/Write and Kinesthetic (hands-on) (Othman & Amiruddin).

### **Visual Learning Style**

The visual learners learn through seeing assisted by pictures, diagram, illustration, videos, flipchart and handouts. Teacher’s body language and facial expression assist students in understanding the content of their lesson. They can improve their learning strategies by highlighting important points in text; create flashcards for key information and mental imaginary. Visual learners prefer maps, charts, graphs, diagrams, and different spatial management (Fleming, 2001). Muhammad *et al.*, (2010) also showed that, in terms of visual learning, most students agreed that when learning a new skill, they would rather watch someone demonstrate the skill than listen to someone talk about the skill.

### **Auditory Learning Style**

The auditory learners learn best through verbal lesson such as discussion, discussion and listening to what others say. They benefited from reading loud and listening to recorded notes. Their learning strategies are group discussion, book on tape, record note and listening to recordings regularly (Coffield *et al.*, 2004).

### **Read/Write Learning Style**

In read/write learners learn through reading or writing. They prefer to work using words and Power Point. Their learning strategies are rewrite and review notes daily, practice writing exam answers and arrange words into hierarchies and points. They also gain benefit by turning reactions, actions or charts into

words (Fleming & Bonwell, 2006).

### **Kinesthetic Learning Style**

The kinesthetic learners learn best through a hands-on approach. They prefer movement and activities. Their learning strategies are skimming through reading material for understanding the main idea. The activities that could be carried out while studying include moving around or working in standing position. They may also listen to recorded notes while exercising. Stay actively engaged in class by taking notes. Write key points and draw chart. Typing notes from text and class, creating spreadsheets, tables, charts to organize material help kinesthetic learner to stay focus in learning (Fleming & Bonwell, 2006).

### **Factors Affecting Learning Style Preferences of Learners**

There are various factors affecting learning style of the students. Literature on factors affecting learning style identified that age, gender and culture affect learners’ learning style preference (Charlesworth, 2008). Dunn & Dunn (1978) theoretical framework listed the environmental, sociological, emotional, physiological and physical as among factors influencing learners’ ability in determining their learning style. Fabumi, Brai-Abu & Adenji (2007). reported that family background factors determined academic performance. Francis & Segun (2008) agreed that the school environment and teacher-related factors were the dominant factors influencing achievements, especially if the student was highly self-motivated. The basic issues of student learning as explored by Muhammed *et al.*, (2008) include family background, learning environment, and government policies.

## **METHODOLOGY**

### **Research design**

This study is a descriptive cross-sectional study.

### **Population and setting**

This study was conducted in College of Nursing Kubang Kerian, Kelantan. There are 51 respondents involved in this study.

### **Sample size**

#### **Sampling method**

The participants selected in this research study

were based on convenience sampling method. A total of 51 participants returned the complete answered questionnaire to the researcher.

### **Inclusion criteria**

Semester one diploma nursing students in College of Nursing Kubang Kerian, Kelantan; Nursing students who are willing to participate in the study and nursing students who are present at the time data collection.

### **Exclusion criteria**

Nursing students semester two until semester six; Nursing students who were not in the class during the data collection period and nursing students who are not willing to participate in the study.

### **Instrument**

The questionnaire that was utilized in this study consisted of two parts which were A and B. Part A of the questionnaire consists of demographic data while part B is the questionnaire of VARK Inventory which were able to determine students learning style in the aspect of Visual, Auditory, Read/Write and Kinesthetic. There are 16 items in the VARK inventory. The students learning style were measured based on the highest frequency of responses in respective to the learning style.

### **Validity and Reliability**

The VARK questionnaire was validated by Ahbul Zailani Begum in Malay version. The reliability estimates for the scores of the VARK subscales were 0.85, 0.82, 0.84 and 0.77 for the visual, aural, read/write, and kinesthetic subscales, respectively, which are considered adequate, given that the VARK is not used for high-stakes decisions (Leite, Svinicki & Shi, 2010).

### **Data Collection Procedure**

The questionnaires were distributed to the participants who were in the class at the specific time. The participants were asked to read each statement carefully and respond to each statement which suits them best. It was a self-reported questionnaire. Instruction was read out to the participants and all necessary information was given to them in a face to face session during the data collection period in order to avoid ambiguity. Time given was 15 minutes.

### **Data analysis**

To analyze this data a test using cross tabulations and Pearson's chi-square was performed. Chi-square tests are nonparametric tests that look for differences between expected results and observed results. A Chi square test was then conducted on the expected and observed data to see if there were any differences. For the expected data and observed data to have a statistically significant difference, the probability (Asymp. Sig. [2-sided]) must be less than or equal to .05.

### **Ethical consideration**

The study was conducted after approval of Director of College of Nursing Kubang Kerian, Kelantan and Bahagian Pengurusan Latihan (BPL). Before starting the study, the request letter was being sent to director in order to ask permission. Written consent was obtained from each respondent. The researchers were given a clear explanation regarding the aim and procedure of study to the respondents. The researchers also told the respondents that their answers are confidential and was only used for the purpose of academic research.

## **RESULTS**

### **Demographic**

A total of 51 respondents participated in this study giving a response rate of 100%. Demographic information on the students is presented in Table 1. Most of the respondents involved in this study were Malay (n=50, 98.0%) and Indian (n=1, 2.0%). The age of the respondents ranged from 18-25 years old. Majority of respondents belonged to the age group of 18-21 i.e. 32(62.7%), meanwhile group of 22-25 years was 19(37.3%). In religion, the majority of the respondents were Islam (n=50, 98.0%) and Hindu (n=1, 2.0%). In education level of participants, most of the participants, 31 (60.8%) were qualified with SPM, 11 (21.6 %) qualified with STPM, 1 (2.0%) obtained certificate and 8 (15.7%) participants qualified with diploma level. For the previous school, most of the respondents, 47 (92.2%) were from ordinary school and from religious school and boarding school were 2 (3.9%) respectively. Majority of the participants, 32 (62.7%) were from rural area while 19 (37.3%) were from urban area. Majority of the respondents, 45 (88.2%) were interested in nursing while 6 (11.8%) were not interested in nursing. Majority of the parent's income of the respondents were within the range of RM 1000 to RM 1999 which is 26 (51.0%),

12 (23.5%) were more than RM 3000, 7 (13.7%) were within the range of RM 500 to RM 999 and 6 (11.8%) were within the range of RM 2000 to RM 2999. For the number of siblings of the respondents, 25 (49%) had 1 to 4 siblings, 21 (41.2%) had 5 to 8 siblings and 5 (9.8%) had 9 to 12 siblings.

**Table 1: Respondent’s Demographic (N=51)**

Characteristics	n	%
<b>Race</b>		
Malay	50	98.0
Indian	1	2.0
<b>Age(years)</b>		
18-21 years	32	62.7
22-25 years	19	37.3
<b>Religion</b>		
Islam	50	98.0
Hindu	1	2.0
<b>Educa tion Level</b>		
SPM	31	60.8
STPM	11	21.6
SIJIL	1	2.0
DIPLOMA	8	15.6
<b>Previous schools</b>		
Ordinary	47	92.2
Religious	2	3.9
Boarding	2	3.9
<b>Origin</b>		
Rural	32	62.7
Urban	19	37.3
<b>Intere st in nursing</b>		
Yes	45	88.2
No	6	11.8
<b>Parent’s income (RM)</b>		
500 – 999	7	13.7
1000 -1999	26	51.0
2000 – 2999	6	11.8
>3000	12	23.5
<b>Number of siblings</b>		
1-4	25	49.0
5-8	21	41.2
9-12	5	9.8

Table 2 shows the learning styles of the respondents. Most of the respondents have kinesthetic learning style and aural learning styles, which is 14 (27.5%) for both. About 10 (19.6%) respondents had combinations of various styles, 7 (13.7%) had read write learning style and 6 (11.8%) had visual learning style.

**Table 2: Distribution of the Types of Learning Style among the Respondents (n=51)**

Type of Learning Style	n	%
Kinesthetic	14	27.5
Auditory (aural)	14	27.5
Read write	7	13.7
Visual	6	11.8
Combination	10	19.6

**The association between type of learning style and age**

The type of learning style and age was determined by conducting Pearson Chi-Square test. The results are shown in Table 3. Pearson Chi-Square value is 20.778, degree of freedom=18 and *p* value is 0.291. The findings show there is no significant difference between type of learning style and age of participants.

**Table 3: The association between type of learning style and age**

	Age			Total
	18-21	22-25	25-30	
Kinesthetic	10	4	0	14
Aural	8	6	0	14
Read write	3	4	0	7
Visual	4	2	0	6
Read write kinesthetic	1	0	0	1
Visualaural	1	1	1	3
Aural kinesthetic	2	1	0	3
Visualread write	1	0	0	1
Aural read write	1	0	0	1
Visual kinesthetic	1	0	0	1
<b>Total</b>	32	18	1	51

**Chi-Square**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.778 <sup>a</sup>	18	0.291
Likelihood Ratio	11.703	18	0.862
Linear-by-Linear Association	0.012	1	0.912
N of Valid Cases	51		

**The association between type of learning style and previous School**

The type of learning style and previous school was determined by conducting Pearson Chi-Square test. The results are shown in Table 4 shows that the Pearson Chi-Square with a vlue of 32.372, degree of freedom=18 and *p* value is 0.02. The findings show there is a significant diffrences between type of learning style difference and previous school.

**Table 4 : The association between type of learning style and previous School**

Learning Style	Previous School			Total
	Boarding School	Ordinary School	Religious School	
Kinesthetic	0	14	0	14
Aural	0	13	1	14
Read write	1	6	0	7
visual	1	5	0	6
Read write kinesthetic	0	0	1	1
Visual aural	0	3	0	3
Aural kinesthetic	0	3	0	3
Visual read write	0	1	0	1
Aural readwrite	0	1	0	1
Visual kinesthetic	0	1	0	1
Total	2	47	2	51

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi -Square	32.372 <sup>a</sup>	18	0.020
Likelihood Ratio	15.234	18	0.646
Linear -by-Linear Association	0.000	1	1.000
No of Valid Cases	51		

**The association between type of learning style and origin**

The type of learning style and origin was determined by conducting Pearson Chi-Square test. The

results are shown in Table 5. Pearson Chi-Square value is 13.619, degree of freedom=9 and *p* value is 0.13. The findings show there is no significant difference between learning style difference with origin of participants.

**Table 5 : The association between type of learning style and origin**

Learning Style	Origin		Total
	Rural	Urban	
Kinesthetic	8	6	14
Aural	13	1	14
Read write	3	4	7
visual	2	4	6
Read write kinesthetic	1	0	1
Visual aural	2	1	3
Aural kinesthetic	2	1	3
Visual read write	0	1	1
Aural read write	0	1	1
Visual kinesthetic	1	0	1
Total	32	19	51

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.619 <sup>a</sup>	9	0.137
Likelihood Ratio	16.187	9	0.063
Linear -by-Linear Association	0.808	1	0.369
No of Valid Cases	51		

**The association between type of learning style and number of siblings**

The type of learning style and number of sibling was determined by conducting Pearson Chi-Square test. The results are shown in Table 6. Pearson Chi-Square value is 126.421, degree of freedom=90 and *p* value is 0.07. The findings show there is a significant difference between learning style and number of siblings of participants.

**Table 6: The association between type of learning style and number of sibling**

Learning Style	Siblings											Total
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	
Kinesthetic	0	1	0	9	2	1	0	0	0	1	0	14
Aural	0	0	2	5	2	1	1	2	0	0	1	14
Read write	0	1	1	2	2	0	0	0	0	1	0	7
Visual	1	0	0	0	1	0	3	0	0	1	0	6
Read write kinesthetic	0	0	0	0	0	0	0	0	1	0	0	1
Visual aural	0	0	0	1	0	0	2	0	0	0	0	3
Aural kinesthetic	0	0	1	0	1	1	0	0	0	0	0	3
Visual read write	0	0	0	0	1	0	0	0	0	0	0	1
Aural read write	0	0	0	0	0	1	0	0	0	0	0	1
Visual kinesthetic	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	2	4	18	9	4	6	2	1	3	1	51

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	126.421 <sup>a</sup>	90	0.007
Likelihood Ratio	73.554	90	0.896
Linear-by-Linear Association	0453	1	0.501
No. of Valid Cases	51		

**DISCUSSION**

The respondents have various styles of learning such as kinaesthetic, auditory, read/write, visual and combinations of various styles. Charleworth (2008) suggested application of multi-style teaching strategies in order to bring about diversity since bigger

dissimilarity of learning preferences exist in multicultural society. This study, showed that there is no significant difference between learning style and participants’ demographics data of age and origin. However, contrast findings were found in study by Cornu (1999), who reported that there is a significant difference between age and learning style. The researcher found that younger group interacted more with structured activities and games which could be utilized in their learning strategy (Cornu, 1999).

The present study found that there were significant difference between learning style and participants’ demographic factors of previous school and number of siblings. This finding was consistent with Dunn and Dunn learning style theoretical framework which listed the environment as one of influencing factors for

students' learning style. Environments referred to programs, policy, faculty, peers and educational experiences of the students in college (Popkess, 2010). According to Malloy (2007) the learning environment focused on interactive and independent method. Student engagement in the learning process influenced the active learning environment in the classroom. The engagement include participating in campus organization, interacting with faculty and peers, attending campus events and spending time studying. When students are able to adapt correct ways of thinking and they carried out appropriate learning style by eliminating the aspect of avoidance and dependence, they will become excellent. O'Hare (2001) reported that students demonstrated a more positive attitude towards experiencing different types of learning styles as compared to traditional learning style. Students achieve higher test scores when taught instructional learning style as opposed to traditional methods (Ishtiaq *et al.*, 2010).

### Limitations of The Study

The generalization of this study within the scope of this study only in College of Nursing, Kubang Kerian, Kelantan, since 99% of the population here is Malay; therefore the results may not be generalized to other races. A small sample size which is 51 respondents cannot be representative of the learning style among nursing students worldwide. Quantitative research was recommended to explore the learning style among the nursing student using focus group discussion.

### RECOMMENDATIONS

Baharin *et al.*, (2007) suggested for a respective workshop or seminar for both students and lecturers to improve awareness on the importance of learning styles and enhance learning skill of the students. It will also provide better view for the lecturers to plan their teaching methods. However the most important aspect is the students themselves, they must have the attitude of eagerness in improving knowledge and discipline in performing effective learning skill. More research is needed to understand the learning styles of the student nurses. A different approach of research will expand the

research finding for future use. Future research with larger sample size could be extended to the student nurses in different places in order to compare and to explore similar diagnosis with other colleges in ILKKM. Qualitative study in exploring learning style of the student nurses will enhance information and help to accomplish more detail about the topic research.

### CONCLUSION

Based on the findings, it shows that the participants have various styles of learning such as kinaesthetic, auditory read/write, visual and combinations of various styles. The findings showed there is no significant difference between learning style and participants' demographics data of age and origin. There were significant difference between learning style and participants' demographic factors of previous school and number of siblings. This finding correlate environmental as one of influencing factors that influence students' learning style. However the most important aspect is the students themselves, they must have the attitude of eagerness in improving knowledge and discipline in performing effective learning skill.

Students need to retain important knowledge in long-term memories for safe and effective nursing care delivery. Students learn in many ways. Some students are visual learners, while others are auditory or kinesthetic learners. Visual learners learn visually by means of charts, graphs, and pictures. Auditory learners learn by listening to lectures and reading. Kinesthetic learners learn by doing it practically. Students can prefer one, two, or three learning styles. Regarding these different learning styles, it is important for nurse educators to incorporate in their curriculum activities related to each of these learning styles so that all students are able to succeed in their classes. In order to help all students, learn, nurse educators need to teach using as many of these preferences as possible. Educators should put hands together for this effort because it is not only important in achieving good grades but also to establish a positive learning system in the long run and for daily life purposes. It makes learning more easy, interesting and meaningful.

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