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A STUDY OF LEARNING STYLES OF ADULT LEARNERS IN THE FACULTY OF EDUCATION, UiTM

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ABSTRACT

Research has demonstrated that learning styles preferences and how they are taken into account are closely related to learner achievement and satisfaction. This study investigated learning style preferences of adult learners between the age of 20 to 50 years old at the Faculty of Education. The Productivity Environmental Preference Survey (PEPS) (Dunn, Dunn, and Price, 1982) was used to assess adult's individual learning styles. The results suggest that adult learners at the Faculty of Education prefer to block out sound with music, like to study in bright and cool environment and prefer to learn in formal environment. They are also quite motivated, feel very comfortable sharing responsibility with others when they are working and they feel motivated if they learn with persons of authority. In addition, they like to learn by 'hands on experience', would prefer liquid intake when they study and they are most effective learners in the morning. Even though there is no significant statistical difference between learning styles of older adults and younger adults, between male and female learners, and between learners of different majors at the Faculty, there is variation in the preferred learning styles of the older and younger adult learners, which should not be dismissed easily. Implications of findings are discussed.

INTRODUCTION

Learning Styles

Very often, we hear students make remarks like "no matter how hard I try, I just can't understand what the teacher teaches" or remarks by teachers like " Zarina is so rude, she keeps asking me to repeat the instruction ". This appears to be an issue related to learning styles. Without a more in-depth understanding of learning styles, there might be a 'clash' between the teaching styles of the teachers and the learning styles of the students. Researchers like Oxford, Hollaway' and Murillo (1992) call it 'style war'.

The Adult Learners

The recent report by the Census Bureau and National Institute on Aging stated that the number of people aged 65 and older has tripled over the past half-century to a record of 420 million worldwide. The 65-and-over population in Singapore, Malaysia, Colombia and Costa Rica are expected to at least triple in size ("World's population triples: biggest increase in less developed nations," 2001). Hence, many countries are already heeding to adults' learning needs; for example, 'International Association of Third Age

Universities' (UIUTA) in United Kingdom has been formed to cater to the needs of their third age citizens (age between 50-74 years old) (Jarvis, 2001).

It appears that knowledge now can become obsolete in a shorter period. Merriam & Caffarella (1999) has noted that half of what most professionals know when they finish their formal training can be outdated in less than five years, and could be even less for technology related jobs. As Merriam and Caffarella (1983, p.21) observe, ' The most important learning needs are not among children, but among adults-especially our political, intellectual, scientific, corporate, and religious leaders – the decision makers who will be shaping the Information Society over the next two decades.'

As Malaysia is moving towards the era of K-economy and has been vigorously promoting life long learning among individual learners, many adults are inevitably required to equip with latest knowledge and skills. It is thus crucial to carry out a study to understand how adult learners learn, to uncover some insights of their preferred learning styles.

OBJECTIVES

The main objective of this study is to identify learning styles of adult learners at the Faculty of Education, UiTM. More specifically, this study attempts to answer the following questions:

1. What are the preferred learning styles of adult students at the Faculty of Education carrying out learning activities?
2. Is there any difference between learning styles of adult learners from different majors at the Faculty of Education? (i.e. TESL students and Music Education students)
3. Is there any difference between learning styles of younger adult learners and older adult learners?
4. Is there any difference between learning styles of male and female adult learners at the Faculty of Education?

LITERATURE REVIEW

With the emergence of theories of multiple intelligences and emotional intelligences, research in educational psychology over many years tended to adopt a more humanistic approach where individual learners' needs, and preferences are considered when trying to understand how information is processed (Biggs, 2001a). Hence, since 1960's, many models and instruments were designed to identify learning styles, with an ultimate aim to enhance the process of individual learning. Curry (1990) proposed that all of these instruments may be grouped into three main categories or 'strata resembling layers of an onion. The three types are instructional preference, information processing styles, and cognitive personality style. Recently, Sternberg & Grigorenko (2001) have categorized research on styles into three broad categories. The first category is cognition-centered styles, exemplified by Witkin's Embedded Figures Test (1962), and Kagan's

Reflection-Impulsive Test (1966). The following type is personality-centered styles, exemplified by Myers-Briggs Type Indicator (1962) and the third category is activity-centered styles, exemplified by Kolb's Learning Styles Inventory and Dunn & Dunn Learning Styles Inventory (1975)(all cited in Sternberg & Grigorenko, 2001).

Conflicting issue arises when definitions of styles, strategies and abilities are compared and contrasted when using different measures of learning styles.(Sternberg & Grigorenko, 2001). Nevertheless, the most comprehensive definition of learning style may have been that of the National Task Force on Learning Style and Brain behavior (Keefe & Languis, 1983)

"Learning style is that consistent pattern of behavior and performance by which an individual approaches educational experiences. It is the composites of characteristic cognitive, affective, and physiological behaviours that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment. It is formed in the deep structure of neural organization and personality (that) ...is molded by...the cultural experiences of home, school, and society. (p. 1)

Implications of learning styles research are multifaceted. Curry (1990) claims that learning style has been related to a) curriculum design; b) methods of instruction; c) assessments; and d) guidance in both the educational and business settings. Furthermore, learning style research have been studied in relations to culture (Dunn & Gemake, 1990; Griggs & Dunn, 1996; Hill, Puurula, Sitko-Lutek, & Rakowska, 2000; Park, 2000), ability/achievement (Boles & Pillay, 1999; Pillay, 1998; Price, 1996), age (Price, 1987, 1996; Price, Dunn, & Dunn, 1977; Truluck & Courtnenay, 1999), gender (Price, 1987, 1996; Price et al., 1977), and other social construct such as self-concept (Price et al., 1977). It has also been compared and contrasted with other learning models (Murray-Harvey, 1994; Price, 1996).

Even though research on learning style has been rigorous in USA and UK, and Australia, research carried out in Malaysia on learning style has been limited. One of them is a study on learning style preferences of Malay ESP learners carried out by Hashim (1995). There is another replication of Reid's study on ESL learning style preference of Chinese students in the Tunku Abdul Rahman College carried out by Rajamony (1999).

METHODOLOGY

In this study, Productivity Environmental Preference Survey (PEPS) (Price, 1996), the adult version of the "Learning Style Inventory' (LST), (Dunn & Dunn, 1975) is used. PEPS, based on factor and content analysis, can help identify how adults prefer to function or learn with regard to the following; immediate environment, emotionality, sociological needs and physical needs (please refer to Kirby, 1979 and Keefe 1982, both cited in Carbo, Dunn & Dunn, 1986 for reliability and validity of the instrument). It consists of 100 questions/items. These 100 items are grouped to 19 areas, which reveal the way in which an individual prefers to learn. The 19 areas are sound, light, warmth, formal design, motivated/unmotivated, persistent, responsibility, structure, learning alone/peer oriented, authority-oriented learner, auditory preferences, visual preferences, tactile preferences, kinesthetic preferences, requires intake, evening/morning, late morning, afternoon, needs mobility.

The questions were answered on a Likert scale of 1-5 from 'strongly agree to strongly disagree'. The survey also elicited demographic information such as age, major and gender.

A total of 380 questionnaires were distributed to the whole population in the Faculty of Education i.e. TESL students, Art Education students and Music Education students. The age of the respondents ranges from 21 to 50 years old. The questionnaires are self-explanatory. A total of 218 questionnaires were returned.

DATA ANALYSIS/DISCUSSION

Part I

Table 1 **Descriptive Statistics**

	N	Mean	Std. Deviation
	Statistic	Statistic	Statistic
SOUND	211	17.0474	2.3006
LIGHT	212	17.6887	3.0349
WARMTH	210	*21.6476	3.1026
FORMALD	208	18.2885	2.3639
MOTIV	212	*28.5425	3.5161
PERSIST	208	*21.7596	2.9879
RESPONS	213	*7.1643	1.2872
STRUCTUR	206	14.7913	2.1000
LOPO	205	**34.2585	35.2756
AOL	210	*25.8524	3.0107
AUDPREF	211	13.6540	2.6617
VISPREF	210	*29.2238	3.5531
TACTPREF	211	10.5118	1.9624
KINPREF	207	15.6087	1.9174
REQINT	207	18.6039	2.6998

EVEMORN	212	*24.0896	20.9621
AFTERN	211	8.1754	2.0148
NEEDSMOB	209	15.0096	2.3615

Table 1 represents an overall descriptive statistics of the total respondents in 19 areas of preferred learning modes. As indicated, adult learners in the Faculty of Education prefer warm environment; they are quite motivated and persistent but would prefer to share responsibilities when they study. This is evident in the highest mean score of the area 'learning alone/peer' ** as many of them indicated that they are both effective when they learn alone and with peers. They are also highly visual and are more effective learners in the morning. The following elaborates the 19 areas of learning preferences.

Environment

Sound

Most students in the Faculty of Education find noise or sound distracting when studying, with 63% of them stating that noise or sound usually keep them from concentrating. However, fifty-five percent (55%) of them agree that they prefer to work with music playing when studying, thus explaining why some of them invariably turn on music or even television whenever they study as a screen against random noise distraction. It has been observed that quite a number of students even switch on portable radio when they attend lectures. Only 22.7% of them indicated that they dislike studying with music switched on.

Light

Statistics shows that most subjects prefer working in brightly lighted room, and dislike working in shaded room. Ninety-two percent (92%) of them agree that they prefer to work in bright light, 71% of them disagree that they prefer to work or read where lights are shaded, and only 20% indicated that they prefer to work under a shaded lamp with the rest of the room dim.

Warmth

Cool temperature is needed for most students in the Faculty of Education to study, with 83% of them agree that they prefer cool environment when they study, and 71% of them indicated that they find it difficult to concentrate when the temperature is warm. Only 12% of them agree that they often wear a sweater or a jacket indoors when they study. This could be related to the climate in Malaysia, which is bright most of the time and hot throughout the year. Therefore, learners could have got used to the bright environment and the use of air-conditioners to cool the environment

Formal Design

Generally, adult students in the Faculty of Education concentrate better when seated in a more formal design. i.e. to sit on straight back chair. About 59% of them indicated that they concentrate better when they sit up rather than when they recline, and 54% of them disagree that they think better

when they lie down. Only 20% of them agree that that they study better when lying down.

EMOTIONALITY

Motivated/Unmotivated

It is positive to note that students in the Faculty of Education are quite motivated in their studies. Fifty-six percent (56%) of them disagree that they need people to keep reminding them to complete work, and 22% of them need people to remind them. Seventy percent (70%)of them feel self-motivated and only 7% are unmotivated. Eighty-one percent (81%)of them indicated that they always do the best they can, and only 4% of them disagree with the statement. It is also interesting to note that these students feel good when colleagues or supervisors praise them for doing well, with 77% of them agreeing to the statement. Learning new things is also positively indicated, with 82% of them agreeing to this statement.

Non-Persistent/Persistent

Sixty-three percent (63%) of them agree that that they usually complete the tasks, which they start and only 8% of them said that they do not. Sixty-eight percent (68%) will keep trying to accomplish a task even if it appears that they may not succeed but indicate that they tend to lose interest (62%).

Irresponsible/Responsible

Adult learners in the faculty of Education prefer to share responsibilities with their peers for a learning task, with 87% of them agreeing to this statement. Some of them are also both inner and outer directed as 35% of them agree that they do not have to be reminded to do things they would do and 37%of them disagree that they have to be reminded. That explains why group work is more popular among the learners at the faculty.

Structure

More than half of the adult learners in the faculty need structure to learn. Seventy-one percent (71%) of them agree that they prefer completing one thing before they start something else, 65% find it difficult to start new task before they finish the task they are doing, 64% prefer someone carefully outline a task that should be done, and 68% agree that if they go through each step of a task, they always remember what they learn. Generally, only about 10% of them claim that they do not need structure, or specific directions or explanations prior to undertaking or completing an assignment.

SOCIOLOGICAL PREFERENCES

Learning Alone/Peer Oriented Learner

It is interesting to note that on one hand, adult learners in the Faculty of Education prefer to share responsibility with others, on the other hand when asked whether they like to work alone, about 57% of them state that

they prefer to study by themselves, about 15% of them prefer to work with others. However, when asked whether they like to work with their peers or another individual, 56% of them agree, 17% disagree and 27% of them are uncertain.

Thus, these students realize that they are effective in learning when they work alone but also feel very comfortable when they work with a few other individuals. This also accounts for the relatively high percentage of 'uncertain' response i.e. about 30%. This is congruent to other research carried out on Malaysian Malay learners (Reid, 1987, Hashim, 1995), which reported that Malay learners preferred group learning. This could be related to cultural factor or previous educational experience.

Authority Figure Present

Most students feel better or more comfortable when someone with authority is present when they learn. Seventy-six percent (76%) of them agree that the job they like doing best, they like to do with an expert in that field, only 5% disagree to the statement. Most of them also agree that their performance improves if they know that their performance will be checked (70%), and like their supervisor/instructor to recognize their work (72%). In addition, Forty-seven percent (47%) of them prefer the persons of authority to stay away until they have completed their work.

PHYSICAL NEEDS

Auditory Preferences

About half of the adult learners learn best when listening to verbal instruction, with 51% agree that 'The things they remember best are things that they hear, and 52% of them like to learn about something new hearing a tape/lecture.

Visual Preference

Generally, adult learners at the Faculty of Education are more visual than auditory, as about 70% of them prefer this mode of learning. However, it is crucial to point out that they prefer audio-visual mode, like movie (74%) and television (71%), compared to reading. This is obvious when only 41% of them indicated that they learn better by reading than listening to someone, 59% agree that if they learn something new, they like to learn by reading.

Tactile Preferences

Seven-five percent (75%) of the learners like to take notes in lecture to remember. Nevertheless, only about 50% of them would agree that they prefer to draw diagram or build things when they learn. This could be due to two factors; one being the fact that they have been trained to take notes to learn in their past learning experience and they have not been exposed to or trained to adopt strategies like mind-mapping or diagrams to learn. Secondly, being social sciences students (TESL, Art Education and Music Education), they may not be so involved in building things or drawing diagrams in their learning processes.

Kinesthetic Preferences

Adult learners of the Faculty of Education prefer to use kinesthetic mode, with 82% of them said that they learn best by being directly involved in what they are doing (e.g. drama, role playing, real life experiences), 80% of them prefer to learn new thing by actually doing it, 73% of them said that they would rather learn by experiencing than by reading. Nevertheless, only 65% of them enjoy doing experiment when they are engaging in learning. This comes not as a surprise, perhaps they perceive the 'experiment' as science experiment and being social science students, they might perceived this statement as 'not so relevant'.

Of the four perceptual modalities, visual preference is the most preferred, followed by kinesthetic auditory and tactile preference. The least preferred mode is tactile mode. This also explains why TESL students prefer more 'kinesthetic' assessments like drama, and audio-visual text like the television.

Requires Intake

Most students prefer NO food intake when studying. Fifty-eight percent (58%) of them disagree that they could concentrate better when they eat. However, 74% of them like to have something **to drink** when they work. This could be related to their previous classroom background in schools as food intake was prohibited but drinking was allowed in the classrooms.

Functions Best In The Evening/Morning

Sixty-nine percent (69%) of the students prefer to learn in the morning, and 67% of them would rather work in the morning than in the evening. About 24% of them are most alert in the evening. In addition, 61%of them find it easy to concentrate late at night.

Function Best In The Afternoon

Statistical data shows that most adult students in the Faculty of Education are less effective in learning in the afternoon. About 18% say that they can concentrate best in the late afternoon. Despite having quite a number of students from the faculty complaining that they have problems waking up for morning lectures, the findings show that adult learners at the Faculty of Education prefer learning in the morning. Many of them claim that they are least effective in learning in the afternoon. This could be related to the preference for cool environment, as temperature in the morning is cool.

Mobility

Eighty- two percent (82%) of the students enjoy tasks that allow them to take breaks, 66% of them agree that they constantly change position in their chairs, 72% agree that it is difficult for them to sit in one place for a long time.

PART II

Even though statistical analysis using Mann-Whitney Test shows NO statistical significance on 'age', 'gender', and 'major', variation in the preferred learning styles of the younger and older adults should not be dismissed easily. As noted by Burns (2000, p.157), 'Of more concern is the way important information is overlooked in studies that fall short of significance.', hence, the reason to scrutinize the variation. There could be a few reasons as to why statistical results show no significance, when variables like gender, age, and major are compared.

Firstly, all the respondents the Faculty of Education are Malay or 'Bumiputra' students and they may come from socio-cultural background, which may be quite similar. Most of them may have gone through the same educational system. i.e. The National School System. Perhaps it is through these environments that they have formed these patterns of behavior in learning. As learning styles are molded very much by the cultural experiences of home, school and society (Keefe & Languis, 1996), these homogeneous subjects may display very similar learning styles even though they are from different social science backgrounds.

Secondly, there is a huge discrepancy in the number of respondents for age above 30 and below 30 years old. There are 151 respondents (88%) who are below 30 years old and only 20 respondents (12%) who are above 30 years old. This may have affected the analysis of the data.

Thirdly, there is also an imbalance in the number of questionnaires returned from the three major departments. Frequency table shows that there are 188 respondents (86%) for ED220 (TESL) major, 24 respondents (10%) for ED224 (Music Education) major, and only 8 respondents (4%) for ED222 (Art Education). The exact number of populations for these departments are ED220 (TESL) 292 (77%)students, ED224 (Music Education) 30 (8%)students, and ED222 (15%)(Art Education) 58 students.

Nevertheless, data analysis using Mann-Whitney Test (in table 2), shows some variation which requires further attention and discussion.

Table 2 Mann-Whitney Test

	N below 30 and above 30			Mean Rank below 30 and above 30	
	below 30	above 30	Total	below 30	above 30
SOUND	146	20	166	82.67	89.55
LIGHT	147	19	166	83.71	81.89
WARMTH	145	20	165	81.14	96.47
FORMALD	143	19	162	82.96	70.53
MOTIV	147	19	166	84.03	79.37
PERSIST	144	19	163	81.30	87.32
RESPONS	147	20	167	85.08	76.05
STRUCTUR	142	20	162	83.03	70.65
LOPO	142	20	162	81.45	81.85
AOL	144	20	164	83.67	74.10
AUDPREF	146	20	166	81.77	96.10
VISPREF	145	20	165	85.52	64.72
TACTPREF	145	20	165	80.08	104.15
KINPREF	144	20	164	81.58	89.13
REQINT	143	20	163	84.64	63.10
EVEMORN	146	20	166	83.45	83.85
AFTERN	145	20	165	83.06	82.57
NEEDSMOB	144	20	164	82.83	80.13

Compare to learners who are below 30 years old, adult learners who are above 30 years old do not like noise, much prefer warmer environment, and less formal environment when they engage in learning activities. Even though they feel less motivated, they indicated that they are more persistent, and prefer to share responsibilities compared to their younger counter parts. They also appear to need less structure and less help from person of authority when they learn. Besides, they are more auditory, more tactile, and kinesthetic learners; but they are less visual learners. They also do not prefer intake as much as the younger learners when they learn.

CONCLUSION/IMPLICATION

The findings may have implications for educational administrators, teachers involved in designing the learning and teaching environments for adult learners at the Faculty of Education. Galbraith (1984 as cited in(Gald-Johnson & Price, 2000) found that adult learners are likely to optimize learning if they are more aware of their dominant learning styles. Hence, adult educators in particular need to take learning styles into consideration and design environment that is flexible enough to meet individual preferences for optimum learning to occur.

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