

Identify Learning style in students of medical discipline

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Objective: To find out the frequency of different learning style in students of first year doctor of physical therapy (DPT) and to formulate future academic plan according to the needs of students.

Methodology: This descriptive cross sectional study was conducted from 1st October to 30th November 2012 at riphah University, Rawalpindi, Pakistan. A sample of 81 students from first year of Doctor of Physical Therapy was recruited. The Kolb's learning inventory was used for collection of data.

Results: Out of 81 students, 12.2% were male and 86.6% were females. Frequency of four learning style showed that 22% and 14.6 %

52.98% students were accommodators and converges respectively. 11% of the total students were diverges. The relationship of gender and learning style 22% male and 78% female were accommodators.

Conclusion: It is concluded that the majority of students were accommodator. It means that greatest strength lie in carrying out plans and experiments and involving themselves in new experiences. (Rawal Med J 2013;38: 184-187).

Key Words: Kolb's learning inventory, learning style, Accommodator, Diverges, Assimilators, Converges.

INTRODUCTION

Learning is the process of getting information from environment and creating the meaning from the experience. It is the gradual process of gathering information from experience.¹ learning style is different for all individual.² Kolb learning style inventory was designed to measure the degree to which individuals display the different learning styles derived from experimental learning theory (ELT).³ The Kolb model works on two levels: Four stage cycle consisting of Concrete experience (CE), Reflective Observation (RO), Abstract conceptualization (AE) and Active Experimentation (AE) and Four type definition of learning style consisting of Diverging (CE/RO), Assimilating (AC/RO), Converging (AC/AE) and Accommodating (CE/AE).

The concrete experience is the learning of involvement in the new experience, reflective means the visual assessment of thing, abstract conceptualization as name indicates is the creative style and active experimentation is the solution of problem with the help of theoretical knowledge.⁴ Kolb proposed four quadrant of different learning style. The DIVERGER learner is a combination of

concrete experience and reflective observation style and the learner visualizes the concrete experience by using different point of views to get a final informative logical form. The CONVERGER relies on the abstract thinking or ideas and determined the practical solutions of different problems with active participation. The ACCOMMODATOR is the mixer of concrete experience and active experimentation and is totally based on hands on practical learning. The ASSIMILATOR is the combination of abstract conceptualization and reflective observation mainly focuses on the understanding of ideas and used them to crate theories.⁵ Majority of students rely on a style of learning and it guides to improve the educational system and focus should be on the student's preference of learning style. It is also noted that the outcome of learning is directly related to the model of learning.⁴ The purpose of this study was to determine the most preferred learning style of students of first year doctor of physical therapy.

METHODOLOGY

This was a descriptive study and a sample of 81 (male 10, female 71) students from first year doctor of physical therapy from Riphah College of

Rehabilitation Sciences, Islamabad was selected. A Kolb's LSI version- 2 (1985) was used for the data collection. The part I of the learning style questionnaire (LSQ) was about concrete experience and abstract conceptualization and the part II was about active experimentation and reflective observation (Table 1).

Table 1. Learning style questionnaire (LSQ).

Part 1: Concrete experience VS Abstract Conceptualization	
1. I prefer	a. Hands-on learning experiences
	b. Learning through thinking and reasoning
2. I tend to	a. Rely on feeling when making decisions
	b. Rely on logical reasoning when making decision
3. I learn more effectively from	a. My peer s
	b. My teacher
4. I like learning through	a. Simulations
	b. Lectures
5. I lean well by	a. Practical experience
	b. Applying theories to hypothetical situations
6. I am best at learning	a. Facts
	b. Concepts
Part 2: Active Experiment Vs Reflective Observative	
1. I learn best through	c. Active involvement in projects
	d. Observation
2. I would rather	c. Do volunteer work with disadvantaged youth
	d. Read about disadvantaged youth
3. I prefer assignment that	c. Require me to work examples
	d. Require me to think about situations.
4. I learn well through	c. Participation in a discussion
	d. Listening to what other have to say
5. I tend to	c. Jump right in and do something new
	d. Think about possible outcome before trying something new.
6. I learn best	c. By doing
	d. Watching and then reflecting

The A response represented the concrete experience, B for abstract conceptualization, C for active experimentation and D for reflective observation. The data was summarized by adding the marked scores of part I and II. The final conclusion about the learning style of the students was adding the scores of inventory. If the scores of B and C were high it meant the Converger, if A and D were high it meant Diverger, if B and D were high it meant Assimilator and if A and C were high it meant Accommodator. The data were analyzed using SPSS v. 17.

RESULTS

Out of 81 students, 12.2% were male and 86.6% were females. The frequency of four learning styles is shown in Table 2.

Table.2: Learning style.

Style	Number	Percentage
Accommodating	18	22.2
Diverging	9	11.1
Converging	12	14.8
Assimilating	3	3.7
Accommodating/diverging	9	11.1
Accommodating/converging	8	9.9
Diverging/assimilating	8	9.9
Converging/assimilating	7	8.6
All	7	8.6
Total	81	100.0

Table 3. Results according to gender distribution.

Gender	Accommo- dating	Diverging	Converging	Assimilating
Male	4	0	2	0
Female	14	9	10	3
Total	18	9	12	3

The relationship of gender and learning style showed that 22% male and 78% female were accommodators.

DISCUSSION

The outcome of study reveals that majority of students were accommodators and they were likely

to learn with experiments and new experiences. There are different studies which support that in medical sciences, majority of students belong to this category, as the learning is slight different as compared to the art subjects. The study also determined the ratio of different learning style of medical students in the Medical colleges of Pakistan.⁶ The medical entering students of university have same preference as science than art student.⁷ The findings supports that the greater effort at reflection is associated with more positive learning experience.⁸

The choice of career has no association with the learning style of students,⁹ as the students of different learning style basically depends on the information.¹⁰ In one study, the majority were concrete students and increasing concrete learning in nursing education. The accommodators were not in first year of nursing education.¹¹ In the surgical residency students, the most converging learning styles were found and the most frequently learning style was accommodators.¹² In this study, the findings showed the Nursing and Speech groups showed a slight preference for concrete experimentation, whereas the Occupational Therapy and Physiotherapy Assistant groups preferred abstract conceptualization. The learning style of the PT students was that of converger, with a strong tendency toward active experimentation versus reflective observation.

The study results also showed that the aptitude of the students and the future plan of academics should be focusing on the outcome of this study.¹³ The higher scores in the Occupational Therapy were converger in academic training.¹⁴ The clinical association skills are improved not only by individual level of academic training but also by deliberate pairing of concrete with abstract learners.¹⁵ It has been recommended that educators take learning style preferences of health science students into consideration when planning, implementing, and evaluating teaching activities, such as including more problem-solving activities that fit within the converges learning style.¹⁶ The study identify the different multicultural approaches in the learning, however the result outcome of study signifies the

concern of students in learning. It has been observed that the different approaches can enhance the learning in student.¹⁷

CONCLUSION

Majority of students were accommodators. It means that greatest strength lie in carrying out plans and experiments and involving themselves in new experiences. So in future planning, more focus should be on the practical training, task oriented activities and clinical decision making activities.

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Critical revision of the article for important intellectual content: Arshad Nawaz Malik
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