

APPLICATION OF KOLB LEARNING STYLE INVENTORY TO EVALUATE CONVERGERS, DIVERGERS, ASSIMILATORS AND ACCOMMODATORS MINDS OF THE MBBS MEDICAL STUDENTS OF A MEDICAL COLLEGE OF SOUTH INDIA

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Abstract

Background: Mr. Kolb, 1984, described, there are four types of learner, i.e., Converger, Diverger, Assimilator, and Accommodator.

Aims and Objectives: The objectives of the study was to “evaluate Convergents, Divergers, Assimilators and Accommodators mind- sets of the MBBS Medical Students of a Medical College of South India by using Kolb Learning Style Inventory (KLSI)”.

Materials and Methods: We distributed a Questionnaire to the three groups A, B, C of MBBS students of a Medical College Hospital of South India. The students attempted the questions, gave themselves as response: 4 = most like, 3 = more like, 2 = like, 1 = least like.

Results: In the present study 20 (15.5%), 18 (13.7%) and 24 (20.9%) students of MBBS 1st year, 2nd year & 3rd year, respectively, were converger learner. The Diverger learners were 15 (11.6%), 17 (12.9%) and 9(7.8%) from MBBS 1st year, 2nd year & 3rd year, respectively. The 35 (27.1%), 55 (47.8%) & 31 (26.9%) learner from MBBS 1st year, 2nd year & 3rd year, respectively, were assimilator type, while, 9 (6.9%), 3 (2.3%) & 8 (6.9%) learner were Accommodator type from MBBS 1st year, 2nd year & 3rd year, respectively. The 32.6%, 25.9% and 27.8% students from MBBS 1st year, 2nd year and 3rd year, respectively, had complex mind sets.

Interpretation & Conclusion The above results show that all types of learners, i.e., Convergents, Divergers, Assimilators and Accommodators have their significant role in the institution or society where they live. The institution or society should design / create various challenging exercises in day – to day teaching activities and also should be included in the curriculum, to increase potentialities of Accommodator-type, Converger-type, Diverger type and Assimilator-type of learners.

Key Words: Learner, Converger, Diverger, Assimilator, Accommodator, Active Experimentation (AE), Reflective Observation (RO), Concrete Experience (CE), Abstract Conceptualization (AC).

INTRODUCTION

We are human being on the earth a collective organism.¹ Any changes on the human life, including biological environment, can occur due to the efforts by human being.¹ The Medical Council of India designed document “Vision-2015” and proposed changes are being recommended to bring about both equitable access to medical education and uniform standards in our doctors and specialists.¹ Thus, it is imagined that curricular changes will make the training more exciting and challenging to the young students and will make medicine as the profession of choice for them.

The question arises that, what are the tools / test to measure strengths and weaknesses of a learner. The Kolb’s Learning Style Inventory (KLSI) is a simple self-description test, based on experiential learning theory, which is designed to measure strengths and weaknesses as a learner.³ The Kolb’s learning style system described, that, there are four types of learner, i.e., Converger, Diverger, Assimilator, and Accommodator.

Converger

learners have highest scores in Abstract Conceptualization (AC) and Active Experimentation

(AE). This type of learners have highest strength in the practical application of ideas.³ Diverger learners have highest scores in Concrete Experience (CE) and Reflective Observation (RO). Diverger's greatest strengths lie in imaginative ability and creativity.³ Assimilator learners have highest scores in Abstract Conceptualization (AC) and Reflective Observation (RO). These learners have strength to understand and create theories.³ Accommodator learners have highest scores in Concrete Experience (CE) and active Experimentation (AE). Accommodators are opposite form of assimilators. Their greatest strengths lie in carrying out plans and experiments and involving themselves in new experiences.³

Objectives

The objectives of the study was to "evaluate Convergers, Divergers, Assimilators and Accommodators mind- sets of the MBBS Medical Students of a Medical College of South India by using Kolb Learning Style Inventory (KLSI)".

MATERIALS AND METHODS

Ethical Clearance and Duration of the Study

After ethical clearance of the project, the study was conducted and completed in the month of May 2014.

and "Group C" consisted MBBS 3rd Year Students.

Study Tool

A questionnaire, having five questions, distributed to the MBBS 1st, 2nd, and 3rd Professional students of the Group A, B, C respectively, in the Lecture Hall according to their lecture schedule separately. The time allotted to attempt these questions within 10 minutes. Before attempting the questions, instructed to the students, that, Observe yourself your learning ways / tools and give mark for yourself as response: 4 = most like, 3 = more like, 2 = like, 1 = least like. The students from all the three batches who were presented in the lecture hall at the time of attempting the questionnaire included for the study and absentees were excluded. See the given questions, below:

Statistical analysis tool

After collecting the questionnaire, we calculated the total score of **AE**- Active Experimentation, **RO**- Reflective Observation, **CE**- Concrete Experience Score, **AC**- Abstract Conceptualization, of each student, by using simple counting on the Excel Sheet of MS Office.

RESULTS

The 129, 131, and 115 MBBS students of Group A,

Table 1

1.	When I learn:I like to deal with my feelings. (CE)I like to be doing things. (AE) I like to think about ideas. (AC)I like to watch and listen. (RO)
2.	I Learn best when:I listen and watch carefully. (RO)I trust my hunches and feeling. (CE)I rely on logical thinking. (AC)I work hard to get things done. (AE)
3.	When I am learning:I tend to reason things out. (AC)I am quiet and reserved. (RO)I am responsible about things. (AE) I have strong feeling & reactions. (CE)
4.	I learn by:Feeling. (CE)Watching. (RO) doing. (AE) thinking. (AC)
5.	When I learn:I get involved. (CE)I evaluate things. (AC) I like to observe. (RO)I like to be active. (AE)

Study Participants and Design of the study

We formed three groups of MBBS students of Dhanalakshmi Srinivasan Medical College Hospital (DSMCH), The "Group A" determined MBBS 1st Year Students, "Group B" for MBBS 2nd Year Students,

B, and C, respectively, attempted the questionnaire. The obtained average value of AE= Active Experimentation, RO= Reflective Observation, CE= Concrete Experience, AC= Abstract Conceptualization, of MBBS 1st, 2nd, 3rd year students, written in the table 1 and shown on Figure 1 as bar diagram.

Table 2 Mean value of AE, RO, CE, AC of MBBS 1st, 2nd, 3rd Year Students.

Group	No. of Students	AE=Active Experimentation	RO=Reflective Observation	CE=Concrete Experience	AC=Abstract Conceptualization
A= MBBS 1st Year	129	12.94	14.09	11.39	13.12
B= MBBS 2nd Year	131	12.38	14.49	10.66	13.72
C= MBBS 3rd Year	115	13.03	13.83	10.93	13.43

The percentage of converger, diverger, assimilator and Accommodator mind-set's students, mentioned in table 2 and shown as bar diagram on the figure 2.

Fig.1: Mean value of AE, RO, CE, AC of MBBS 1st, 2nd, 3rd Year Students.

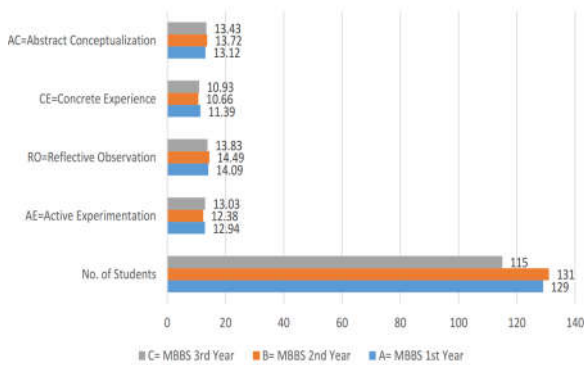


Table 3 Percentage of Converger, Diverger, Assimilator & Accommodator mind-sets of MBBS students Group-wise

Group	Converger	Diverger	Assimilator	Accommodator
A= MBBS 1 st Year	20 (15.5%)	15 (11.6%)	35 (27.1%)	9 (6.9%)
B= MBBS 2 nd Year	18 (13.7%)	17 (12.9%)	55 (47.8%)	3 (2.3%)
C= MBBS 3 rd Year	24 (20.9%)	9 (7.8%)	31 (26.9%)	8 (6.9%)

Fig.2: Number of Students with their Percent

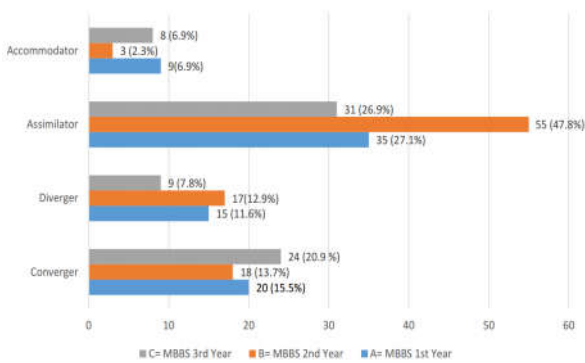


Fig.3: Number of students with their Percent had Combined mind sets

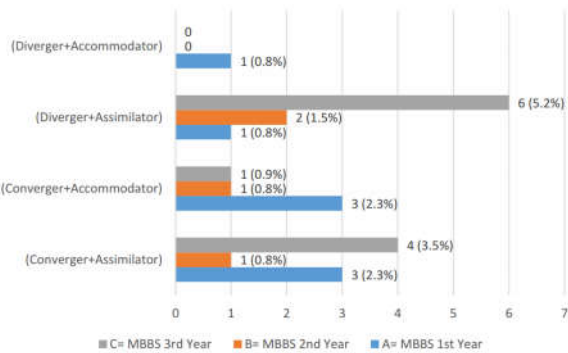


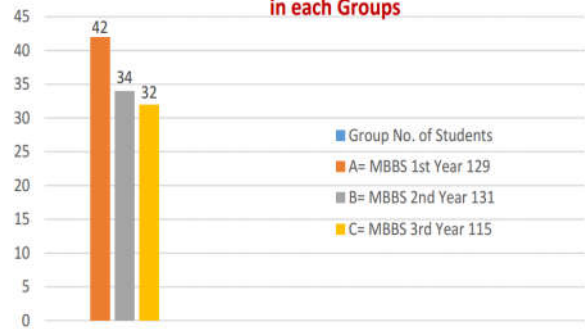
Table 4 The number and its percentage of MBBS students had complex mind-sets

Group	No. of Students	Number of Students had high AE, RO, CE, AC
A= MBBS 1st Year	129	42 (32.6 %)
B= MBBS 2nd Year	131	34 (25.9 %)
C= MBBS 3rd Year	115	32 (27.8 %)

The 32.6 %, 25.9 % and 27.8 % students from MBBS 1st year, 2nd year and 3rd year, respectively, had complex mind sets. See the table 4 and figure

4.

Fig.4: Number of Students had high AE, RO, CE, AC value in each Groups



DISCUSSION

“CONVERGER learners have highest scores in Abstract Conceptualization (AC) and Active Experimentation (AE). These type of learners have highest strength in the practical application of ideas. Research on this type of learning shows that Convergers are preferring to deal with things more than people and they are relatively emotionless. They often choose to specialize in the engineering, computer sciences and physical sciences”. Kolb, *et al* In the present study 20 (15.5%), 18 (13.7%) and 24 (20.9%) students of MBBS 1st year, 2nd year & 3rd year, respectively, were converger learner.

“DIVERGER learners have highest scores in Concrete Experience (CE) and Reflective Observation (RO). Diverger’s greatest strengths lie in imaginative ability and creativity. This type of learning style excels in the ability to view concrete situations from many perspectives and generate many ideas such as in a “brain-storming” session. The previous research shows that Divergers are interested in people and tend to be imaginative and emotional. Divergers have interested in the liberal arts backgrounds and often have humanities, Counselors, organizational development specialists and personnel manager. Divergers are characteristics opposite from convergers”. Kolb, *et al* The present study showing that, the Diverger learners were 15 (11.6%), 17 (12.9%) and 9 (7.8%) from MBBS 1st year, 2nd year & 3rd year, respectively.

“ASSIMILATOR learners have highest scores in Abstract Conceptualization (AC) and Reflective Observation (RO). Assimilator learners have strength to understand and create theories. This learning style excels in inductive reasoning and in synthesizing various ideas and observations into an integrated whole. Assimilator learners, is less interested in people, like the converger, and more concerned with abstract concepts, and is less concerned with the practical use of theories. Thus, these learner’s theory

are logically sound and precise; in a situation where a theory or plan does not fit the "facts", the Assimilator would be likely to re-examine or disregard the facts. As a result, this learning style is more characteristic of the basic sciences and mathematics rather than applied sciences. Assimilators often choose careers involving research and planning". Kolb, *et al*/The present study shows that, 35 (27.1%), 55 (47.8%) & 31 (26.9%) learner from MBBS 1st year, 2nd year & 3rd year, respectively, were assimilator type.

"ACCOMMODATOR learners have highest scores in Concrete Experience (CE) and active Experimentation (AE). Accommodators are opposite form of assimilators. Their greatest strengths lie in carrying out plans and experiments and involving themselves in new experiences. They are risk – takers and excel in those situations requiring quick decisions and adaptations. In situations where a theory or plan does not fit the "facts", they tend to discard it and try something else. They often solve problems in trial and error manner, depending heavily on other people for information. Accommodators are at ease with people but may be seen as impatient and "pushy." their educational background is often in practical fields such as business or education. They prefer "action-oriented" jobs such as nursing, teaching, marketing, or sales". Kolb, *et al*/As per the current study, the 9 (6.9%), 3 (2.3%) & 8 (6.9%) learner were Accommodator type from MBBS 1st year, 2nd year & 3rd year, respectively.

CONCLUSION

The above results show that all types of learners, i.e., Convergers, Divergers, Assimilators and Accommodators have their significant role in the institution or society where they live. The institution or society should design / create various challenging exercises in day – to day teaching activities and should also be included in the curriculum, to increase potentialities of Accommodator-type, Converger-type, Diverger type and Assimilator-type of learners.

limitations

We tried to segregate various types of learners by using "Kolb Learning Style Inventory". The details of Convergers, Divergers, Assimilators and Accommodators type of learners which has been already explained by Mr. Kolb, D.A. (1984)

Experiential, Englewood Cliffs, NJ. We just assessed various types of the learner of this present institute. It is not mandatory of any educational institute or any society should follow this segregation criteria.

Contribution Details

The concept, idea, methodology preparation, statistical calculations as well as manuscript of this Original Article was written by Dr. Surendra Kumar Bouddh, as a 1st Author & Corresponding author, Professor_Pharmacology. Dr. Suresh R. Gosai, 2nd author, Professor and Head_Anatomy corrected the grammatical error of this manuscript. Dr. S.R. Nirmal, 3rd author, Associate Professor_Psychiatry helped to collect the distributed questionnaire, while students were attempting the questions and there after supported for statistical calculations.

Acknowledgement

We would like to acknowledge, Mr. Kolb, D.A. (1984) Experiential, Englewood Cliffs, NJ. for their innovative method of assessment of various types of learners by devised "Kolb Learning Style Inventory". Thus, our present study, we dedicate to them.

Disclaimer

The present study was conducted to analyze types of learners' mind-sets by using "Kolb Learning Style Inventory", in a Medical College of South India. If, any similar studies has been conducted elsewhere it will be coincident, because we are not concern with elsewhere conducted similar studies. We used same texts (to avoid bias) of explanation of Converger, Diverger, Assimilator, Accommodator types learners, which has been already described by the Mr. Kolb, D.A. (1984) Experiential, Englewood Cliffs, NJ.: Prentice Hall.256 pages.

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