

LEARNING STYLES; LEARNERS AND THEIR CAREER CHOICE

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ABSTRACT... Objectives: 1. To study the prevalence of learning styles in intermediate level students in Rawalpindi according to Kolb's Learning Style Inventory. 2. To study the correlation of learning styles with career choices of intermediate level students in Rawalpindi. 3. To compare the results of the study with the learning styles of clinical students of a medical college. **Design:** Cross sectional. Descriptive. **Methods:** The study was done on the intermediate level students of Government Colleges in Rawalpindi. It included the Pre-Medical, Pre-Engineering and Humanities students. All students were given a questionnaire based on Kolb's learning style inventory, and responses collected. Instructions to fill the questionnaire were given verbally to all students. Each student was also instructed to present three career choices in order of priority. Data was collected. **Results:** Prevalence of different learning styles in medical students and intermediate level students is shown in table-I and table-II respectively. **Conclusions:** The prevalence and pattern of learning styles of intermediate level learners and medical students is different. Majority of intermediate level learners have the converger learning styles in contrast with the medical students in whom accommodators are in overwhelming majority. Most learners choosing "Doctor" as their preferred career among intermediate level learners were of assimilator style, followed by convergers. Accommodators were on third place in choosing "Doctor" as preferred career. The most preferred career among intermediate level learner was "Teacher".

Key words: Learning Styles, Kolb's learning style inventory, career choices.

INTRODUCTION

The ways in which different people receive and process new information are different¹. The peculiar way in which a learner takes and processes new information is called his learning style. Each learning style has a corresponding "teaching style" which is the most suitable way in which new information is presented to a learner with a particular learning style. If the method of information delivery to learners conforms to their particular learning style they can learn better^{2,3}. It has been shown that learners with different learning styles have different career trends, which are suitable for their particular learning styles. Similarly different careers accommodate people with specific learning styles, which are more suited for a particular career.

According to the scheme of studies in Pakistan, intermediate level is the level at which the students have to choose their careers clearly and their subsequent studies take a more career oriented course. In general most students follow the aspirations of their parents when making a choice of career. No career counseling is offered and the specific attitudes trends and learning styles are not taken into account. This results in frequent mismatch of career choices and personality attributes of

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the learners, leading to dropouts, failures, and career difficulties.

The present study aims at finding out the prevalence of learning styles at intermediate level students in a government institution in Rawalpindi, Pakistan.

Intermediate level students are at a stage of their studies where they have to make clear career choices for their future study plans. The present study also aims at finding out the most prevalent trends in career choices of intermediate level students and their correlation with their specific learning styles. The study is based on Kolb's Learning Style Inventory; one of the most frequently used model of learning⁴. It takes into account learners' sensory modalities (perception dimension) and learner's behavioral and personal characteristics (processing dimension). In the perception dimension, the learners learn through two extremes of learning inputs, namely concrete experience, and abstract conceptualization. In processing dimension, the learners learn through two extremes of active experimentation on one end and on the other through reflective observation. It is on the basis of these two dimensions that the four learning styles are proposed⁵. According to it, learners are categorized in four groups: accommodators, assimilators, convergers, and divergers. Each group has their specific learning trends and strengths.

CONVERGERS

(Abstract conceptualizer/Active experimenter) - Their greatest strength lies in the practical application of ideas and they seem to do best in those situations where there is a single correct answer or solution to a question or problem and can focus on specific problems or situations. They are relatively unemotional, preferring to deal with things rather than people. They prefer to work by themselves, thinking carefully and acting independently. They learn through interaction and computer-based learning is more effective for them than other methods. Their career choice is usually in the physical sciences, engineering, and computer sciences.

DIVERGERS

(Concrete experimenter/Reflective observer.) Divergers

have characteristics opposite from convergers. Their greatest strengths lie in creativity and imaginative ability. They excel in the ability to view concrete situations from many perspectives and generate many ideas such as in a "brainstorming" session. They are interested in people and tend to be imaginative and emotional. Divergers take experiences and think deeply about them, thus diverging from a single experience to multiple possibilities in terms of what this might mean. They are generally influenced by other people and like to receive constructive feedback. They like to learn via logical instruction or hands-on exploration with conversations that lead to discovery. Regarding their career choice they tend to be interested in the arts and often have humanities or liberal arts backgrounds. Counselors, organizational development specialists, and personnel managers tend to be characterized by this learning style.

ASSIMILATORS

(Abstract conceptualizer/Reflective observer) Their strength lies in the ability to understand and create theories. They excel in inductive reasoning and in synthesizing various ideas and observations into an integrated whole. This person, like the converger, is less interested in people and more concerned with abstract concepts, but is less concerned with the practical use of theories. For this person it is more important that the theory be logically sound and precise; in a situation where a theory or plan does not fit the "facts," the assimilator would be likely to disregard or re-examine the facts. They like organized and structured understanding. They prefer lectures for learning, with demonstrations where possible, and will respect the knowledge of experts. They will also learn through conversation that takes a logical and thoughtful approach. They often have a strong control need and prefer the clean and simple predictability of internal models to external messiness. The best way to teach an assimilator is with lectures that start from high-level concepts and work down to the detail. As a result, this learning style is more characteristic of the basic sciences and mathematics rather than the applied sciences. Assimilators often choose careers involving research and planning. Assimilators have the most cognitive approach, preferring to think than to act.

ACCOMMODATORS

(Concrete experienter/Active experimenter). Accommodators are polar opposites from 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 an intuitive trial and error manner, relying 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. Accommodators have the most hands-on approach, with a strong preference for doing rather than thinking. They do not like routine and will take creative risks to see what happens. They like to explore complexity by direct interaction and learn better by themselves than with other people. As might be expected, they like hands-on and practical learning rather than lectures. They prefer "action-oriented" jobs such as nursing, teaching, marketing, or sales.

It is shown that awareness of learners about their learning styles can help them make better choices for their future scheme of studies, choice of institution and choice of career.

METHODS

The study was carried out on all intermediate level students of a Government College in Rawalpindi. All the students of 1st year and 2nd year, belonging to all three categories, Pre-medical, Pre-engineering and Humanities classes participated in the study. All the students were given a Kolb's Learning Style Inventory questionnaire to fill. The questionnaire consists of 12 educational dialectical questions. Instructions to fill the questionnaire were given verbally at the start of a lecture. In addition to the questionnaire the students were also instructed to indicate three career choices in order of priority. After the

lecture, responses were collected.

RESULTS

The study of learning styles in medical students revealed a total of 152 students responders in clinical classes of Islamic International Medical College, Rawalpindi. The prevalence of learning styles is shown in table-I . The great majority are accommodators. (N=83, 54.6%) After it there are convergers (N=33, 21.7%), divergers (N=20, 13.2%) and assimilators (N=16, 10.5%).

Table-I. Total numbers and percentages of different learning styles in clinical classes of Islamic International Medical College. (n=152)

Styles	No.	%age
Accommodators	83	54.6%
Assimilators	16	10.5%
Convergers	33	21.7%
Divergers	20	13.2%

The study of learning styles study of intermediate level students included 161 responders. The prevalence of learning styles in these students is shown in table-II.

Table-II. Total numbers and percentages of different learning styles in intermediate level. (n=161)

Styles	No.	%age
Accommodators	28	17%
Assimilators	15	9%
Convergers	104	65%
Divergers	14	9%

The great majority are convergers (N=104, 65%), followed by accommodators (N=28, 17%), assimilators (N=15, 9%) and divergers (N=14, 9%)

A comparison of relative percentage of different learning styles in medical and intermediate students is shown in fig-1. It shows significant difference in the prevalence of different learning styles between two learner populations.

The career choice of intermediate level learners, however, did not follow the pattern of medical students of clinical classes. The great majority of intermediate students choosing "doctor" as their preferred career,

were assimilators (33%) followed by convergers (21%). The accommodators could only find the third place choosing "doctor" as their preferred career (14%). table-III and table-IV also show the number and percentage of career choices of intermediate level students.

They signify that there is no predominance of "doctor" as career choice among accommodators (14.3%). Instead, the highest percentage of learners choosing "doctor" as their career are assimilators (33.3%).

Table-III. 1st career choice of intermediate level students according to learning styles. (N=161)

	1 st choice in career of Accommodators	1 st choice in career Assimilators	1 st choice in career Convergers	1 st choice in career Divergers
Teacher	10	6	36	4
Doctor	4	5	22	2
Lawyer	6	2	7	4
Engineer	2	1	7	0
Army	0	0	6	1
Politician	0	0	3	0
Fashion Designer	0	0	2	0
Pilot	1	1	1	0
Police	0	0	2	0
Beautician	1	0	0	0
News caster	0	0	2	0
MBA	1	0	9	2
Air hostess	3	0	6	1
Computer	0	0	1	0

Table-IV. Percentage of career choice of different learning styles. (N=161)

	Career Choices of Accommodators	Career Choices of Assimilators	Career Choices of Convergers	Career Choices of Divergers
Teacher	35.71%	40%	34.61%	28.57%
Doctor	14.28%	33.33%	21.15%	14.29%
Lawyer	21.43%	13.33%	6.73%	28.57%
Engineer	7.14%	6.67%	6.73%	0
Army	0	0	5.77%	7.14%
Politician	0	0	2.89%	0
Fashion Designer	0	0	1.92%	0
Pilot	3.57%	6.67%	0.96%	0
Police	0	0	1.92%	0
Beautician	3.57%	0	0	0
Artist	0	0	0	0
Decorator	0	0	0	0
Actor	0	0	0	0
Singer	0	0	0	0
News caster	0	0	1.92%	0
MBA	3.57%	0	8.66%	14.28%
Air hostess	10.71%	0	5.77%	7.14%
Computer	0	0	0.96%	0

Fig-1. Relative percentage of learning styles in medical & intermediate students

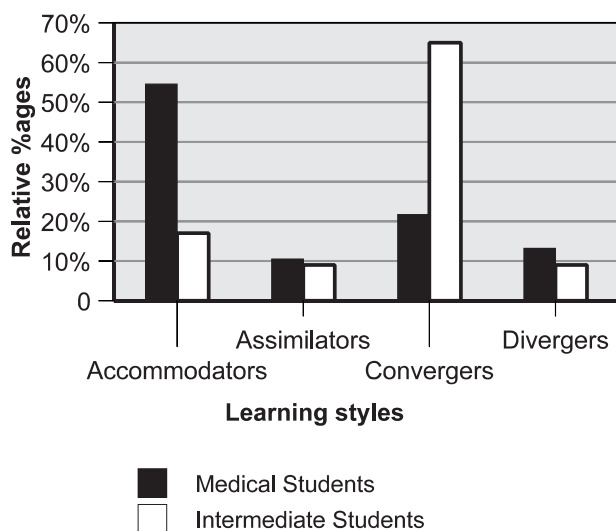
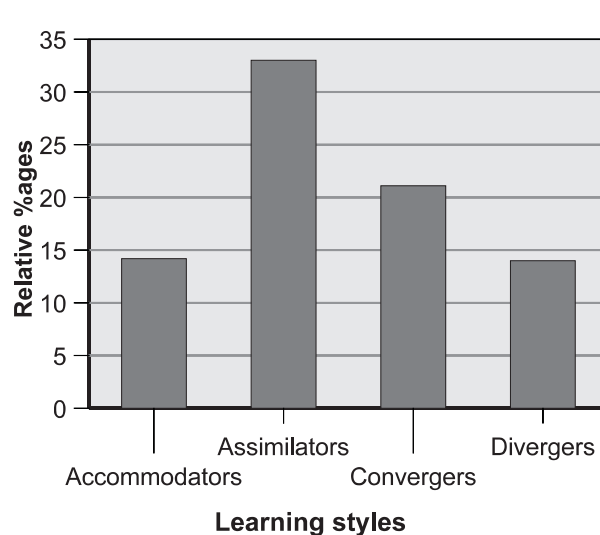


Fig. Learning styles of inter students choosing "Doctor" as their career



DISCUSSION

The learning model of experiential learning, as proposed by David Kolb, defines learning as a process whereby knowledge is created through transformation of experience. According to this learning model, experience is the foundation and stimulus for learning⁶. It categorizes learners in four distinct categories: accommodators, assimilators, convergers, and divergers⁷. It is one of the most widely used learning models⁸, and his learning style inventory is the most commonly used instrument for learning style appraisal^{9,10}.

Many factors have been identified to influence the choice of career by the learners at school level. These include type of school, subject availability, timetable restrictions, choices made by friends and eligibility for entry to further education courses¹¹. The senior school level is the time when learners become increasingly aware of the career opportunities available to them¹². However it is shown that learners are unlikely to make optimal career choices at this level due to relative lack of sufficient and appropriate knowledge about career pathways¹³. These are all observations made by considering external factors that influence the choice of a learner. In a similar way internal factors also influence the career choice of a learner. According to the Holland's theory, personality type and interests are important factors in this respect¹⁴. Similarly, a 'fit' or congruence between person and work environment is also thought to be important in making better career choices^{15,16}. Costa, McCrae and Kay have considered the five factor personality inventory as the career assessment instrument¹⁷. In our study the issue of career choice has been examined from the learning style perspective, assuming that learning styles represent at least one of the internal factors that influence a career choice. The present study extends a previous work by the same authors in which the learning styles of clinical classes medical students has been studied and matched with the teaching methodology. It was found out that the great majority of medical students were of accommodator style, followed by convergers, divergers, and assimilators. The present study, however, finds a different correlation of styles with career choice. The great majority of learners who have chosen "doctor" as their preferred career, are of assimilator style; a style

opposite to accommodator in its attributes. A deeper insight in the assimilator style shows that they are abstract conceptualizers and reflective observers. It has been mentioned that the assimilators are more suitable for basic sciences and mathematics rather than applied sciences. As far as a career as a doctor is concerned it is an applied science with a greater conformity to the attributes of accommodator styles i.e concrete experienter and active experimenter. It is worth noting that the teaching methodology for the intermediate level students is almost wholly lecture based. They are students of basic sciences and they are more concerned with abstract concepts than with their practical application. Their teaching modalities conform to their style as assimilators. However, in general, great majority of them have been shown to be convergers. It is possible that the learning style of clinical students has undergone an adaptive evolution in correspondence with the teaching methods in the clinical classes. Whether teaching methodology affects the learners' learning style constitutes an important aspect of further study.

CONCLUSIONS

The prevalence and pattern of learning styles of intermediate level learners and medical students is different. Majority of intermediate level learners have the converger learning styles in contrast with the medical students in whom accommodators are in overwhelming majority. Most learners choosing "Doctor" as their preferred career among intermediate level learners were of assimilator style, followed by convergers. Accommodators were on third place in choosing "Doctor" as preferred career. The most preferred career among intermediate level learner was "Teacher".

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