

TEACHING STRATEGIES AND LEARNING STYLES: ARE WE ADDRESSING STUDENTS' LEARNING NEEDS? AT FACULTY OF MEDICINE, UNIVERSITY TABUK, SAUDI ARABIA

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ABSTRACT

OBJECTIVES: To investigate correlation of learning styles and instructional strategies in fulfilling learning needs of students.

STUDY DESIGN: A Descriptive Cross sectional Study.

PLACE AND DURATION: At faculty of Medicine, University Tabuk, KSA from 13th September 2013 to 2nd April 2014.

METHODOLOGY: A total of 140 Phase II students' of 2nd and 3rd year medical program were enrolled. Students' learning styles were identified by using Kolb learning style Inventory version 3.1 and any gender based variation was investigated. Teaching strategies offered to year 2 and 3 were summated respectively to have frequency distribution. Gap analysis was done between students' learning styles and the instructional strategies currently practiced in Phase II medical program.

RESULTS: The learning style frequency distribution showed divergents as 36 %, followed by assimilators 30%, accomodators 24% and convergents 8%. For teaching strategies lectures take up 61% and 59% of curriculum time for 2nd and 3rd year respectively. Problem based learning is not offered for 2nd year and only 3% for 3rd year in the curriculum .The other teaching strategies are falling in between lectures and PBL. In terms of students learning needs a substantial gap was found between learning styles' and the teaching strategies offered.

CONCLUSION: It is the need in time to bring reform in teaching strategies with a student centered approach in the light of new trends worldwide. This would embrace our students to learn how to learn and be self directed life long learners.

KEY WORDS: learning styles, teaching, learners, learning needs, reform.

INTRODUCTION

In order to keep in pace with the evolving trends in educational strategies educators in health profession need to be updated all time with the learning needs of their students. This is intricably interlinked with the learning style of a learner which according to Paul S et al is described as "Learning style is an attribute or quality of an individual that interacts with instructional circumstances in such a manner as to acquire differential learning achievement"¹. According to Amin et al educational research has proven that "No two learners are alike in terms of what works best for their learning" In planning instruction an educator must have a sound insight of diversity of learners in the class who have different individual approaches towards learning.²

Learning style should be the final common interest of all the stake holders in health profession. This initial knowledge can dramatically provide educator's means to design learning activities to have desired learning outcome expected from their students.³

Identifying learning styles of students' right from the outset of their educational journey can enable the curriculum developers to redesign courses in accordance to the learning needs of the learners. The instructional strategies should be offered in a way

to fulfill meaningful learning. Knowing learning style, would enable educators community to choose appropriate technology, prepare lesson plans and inquiry methods to fulfill learning needs of their students⁴

Nature and nurture are the two forces that finally shape up an individual and his/her attitude towards learning. David Kolb one of the pioneers in introducing the conceptual framework of learning styles proposed that "learning style is a personal approach to receive and process information and is shaped by the genetic characteristics and experiences of the individual as well as expectations of the environment"⁵.

In educational research, learning style is studied extensively by the psychologists and we can found a vast variety of measurement tools to ascertain individual preferences of learning styles. The most popular learning style inventory (LSI) that has been used by medical students and educators in health profession is the one proposed by David Kolb^{6,7}

Kolb defines adult learning as "the process whereby knowledge is created through the transformation of experience." On a broad canvas he consider learning as a continuous process in which a learner passes through four stages as to have experience, then reflection and observation, leading to abstract conceptualization and ultimately active experimentation (Fig - 1). Kolb's LSI categorizes learners into four basic learning styles as divergent, convergent, accommodators and assimilators⁵.

With all this background we realized that learning styles research is of enormous significance with respect to establishing the learners' contexts of application and learning. We believe that these understandings can be brought into the design process and would help us to understand the reason behind students preferring some teaching strategies compared

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with others, and the compatibility of a style with applied pedagogy.

University Tabuk has a six year medical program that is run as phase I (foundation year), phase 2 (preclinical) and phase III (clinical) followed by internship. The present study focused Phase II which is the first stage towards achieving objectives for a solid foundation for subsequent full time clinical study in Phase III. The curriculum philosophy in Phase II enforce development of a mixture of teaching approaches including self directed learning.

The present study is designed to identify students learning styles and the subsequent teaching strategies that we are offering in phase II medical program at University Tabuk. This would help in gap analysis and will provide scientific evidence to all the stakeholders to appraise and address the missing links.

METHODOLOGY

This descriptive cross sectional study was conducted in faculty of medicine university Tabuk, Saudi arabia for the academic year 2013-2014 from 13th September 2013 to 2nd April 2014. The study group comprised of 140 students both male and female second year and third year students of Phase II medical program

Stage 1: Identifying Phase II medical students' learning style.

Administration, scoring and analyses

Kolb learning style Inventory version 3.1 was used to identify learning style of the study group and any gender based variation was investigated⁸. The students of year 2 and 3 were formally conveyed the purpose of study and with their consent the questionnaire was administered by the end of teaching activity time.

The study participants were asked to provide response to 12 stems of the Kolb LSI to get personal preference for the four elements of the learning process. As shown in (Fig – 1) the preference scores were then plotted on two Cartesian axes between -36 and +36 for each study participant and the fall within the quadrant showed the preferred learning style.

Stage 2: Appraisal of teaching strategies offered to Phase II medical students

The teaching strategies for year 2 and year 3 currently in practice at FOM-UT are lectures, practical demonstrations, tutorials, self-directed learning, clinical presentations, and problem based learning. Overall comprehensive analysis of offered teaching strategies was done by evaluating the study guides of all modules for second and third year Phase II medical program. The total of each teaching strategy was got after summing it up from all modules offered during the two semesters for year 2 and year 3 respectively. The percentage for each teaching strategy was calculated in order to compare it with the frequency distribution of learning styles of our study population

Stage 3: Satisfaction level of students for the teaching strategies
In the third stage of our study we arranged focus group interviews for 2nd and 3rd year male and female students. Our approach in making focus groups was to have a diverse group of four students with one representing each of the identified learning style. The focus groups were asked which teaching

strategies they found effective in their learning.

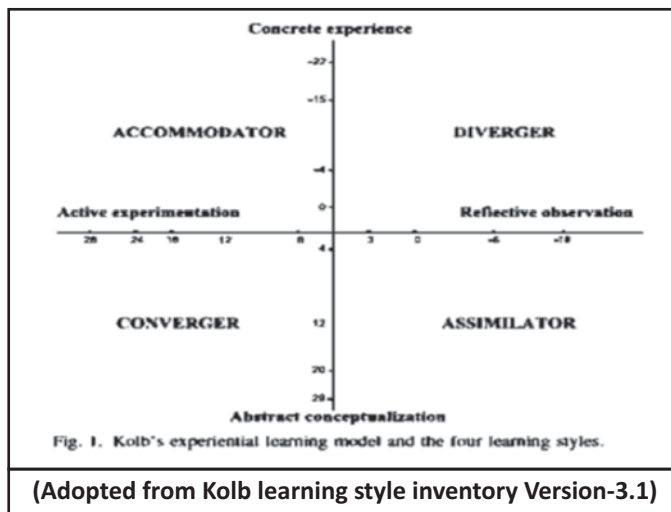
RESULTS

Learning Styles: The Kolb learning inventory showed that Divergent learning style is the overall dominant one in male students of both 2nd and 3rd year. Divergent and Assimilator learning style to be dominating in both 2nd and 3rd year female students. Accommodator style is second most dominant for both 2nd year male and female students. Convergent learning style is the least reported in both 2nd year and 3rd year male and female students. A full representation of all the learning styles with frequency distribution by pie chart is shown in (Fig - 2).

Continuum of Teaching Activities: It was found that lectures are taking up the bulk of teaching strategies that we are offering our students; practical demonstrations are the second in order with tutorials, self-directed learning and clinical presentations in decreasing order on the continuum of teaching methods. Problem based learning which is the ideal teaching strategy to evoke high order cognitive skills in students is taking up just three percent of the curriculum of 3rd year and not at all offered to 2nd year students. (Table – 1) is providing detailed information about teaching methods offered in terms of hours and percentage they are having in the curriculum.

Satisfaction level among students for Teaching Strategies We came up with the following response from our students' focus group interviews; which teaching strategies they found effective and contribute to their learning?

The second year students considered tutorial sessions and practical demonstrations more satisfying and having more impact on their learning. They thought lectures can help them if they are kept involved through participation as otherwise after fifteen to twenty minutes they are listening without understanding. For third year students they demanded that lectures should be less and PBL sessions to be increased as they are more helpful in learning medicine in its real context. Tutorials provide more chances of participation and to get clarification of concepts. Lectures and clinical presentations to be incorporated in a way to have a case based approach followed by clinical presentation by students at end of week. Practical sessions were graded high in acquiring skills and to be more in curriculum.



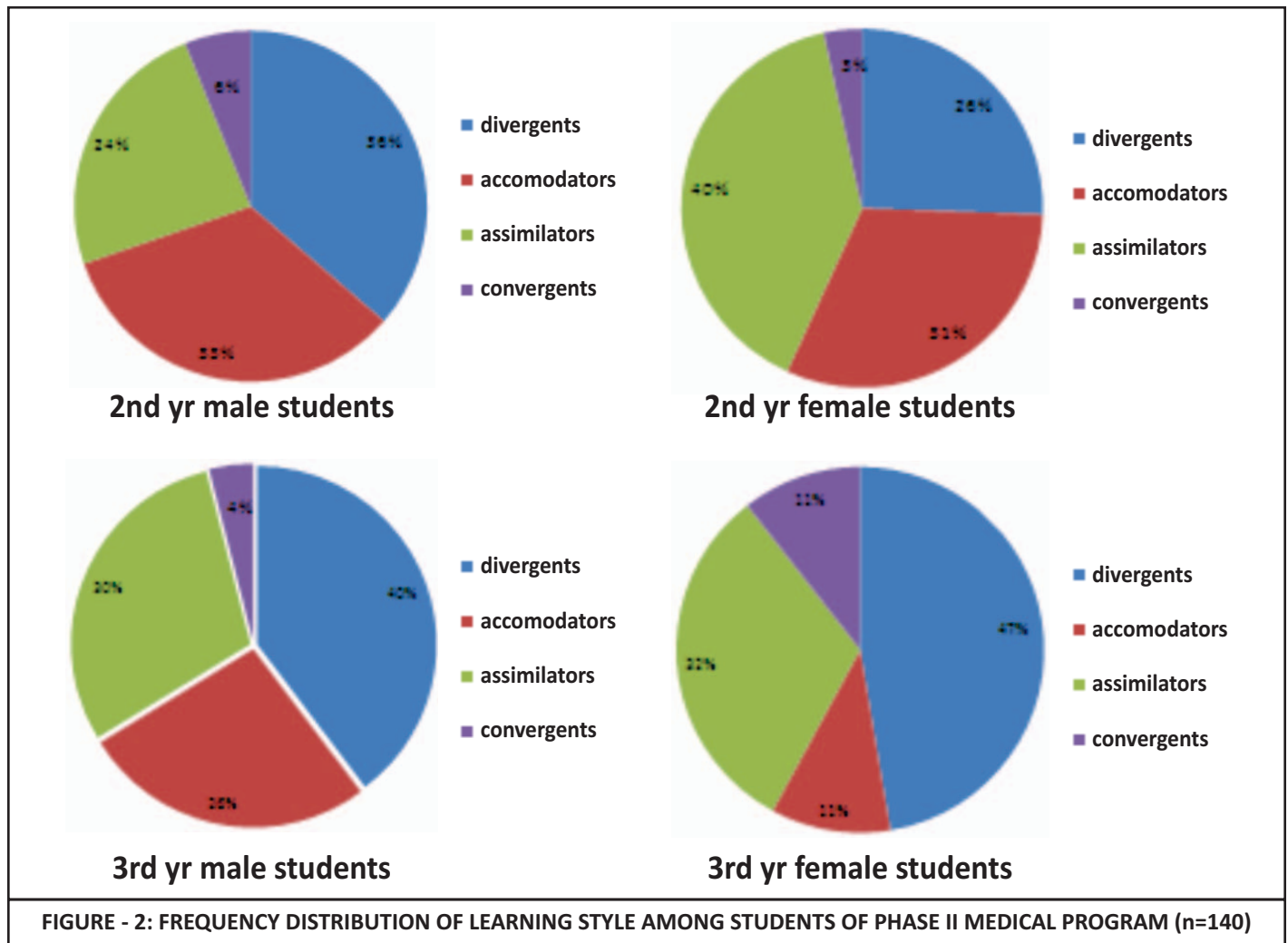


TABLE - I: FREQUENCY DISTRIBUTION OF EDUCATIONAL STRATEGIES IN PHASE II MEDICAL PROGRAM

	Lecture	Practical	Tutorial	SDL	C.P	PBL
Year 2	243 (61%)	87(21%)	39(9.7%)	20(5%)	9(2%)	-----
Year 3	278(59%)	84(17%)	47(10%)	21(4%)	24(5%)	16(3%)

SDL: self- directed learning, C.P: clinical presentation, PBL: problem based learning

DISCUSSION

The learning outcomes of any educational program can be achieved if the educators have the insight of the learning style of their learners. This can streamline learning activities, media selection, and also time management as means to have the desired outcomes⁹

The study results have shown that we have a diversity of learning styles among our students with high proportion of learners who prefer inquiry based learning approach. But the dilemma is that we are using teaching strategies with a high proportion of didactic lectures with problem based approach at the lowest level. The learning styles diversity is an important factor to be focused in order to introduce new trends in educational technology.

It is reported by several studies in educational research that main emphasis on didactic lectures makes it difficult for the

medical students to have learning in the clinical relevance. This can ultimately lead to difficulty in quick information processing in order to integrate basic and clinical sciences in their future professional role as clinicians¹⁰. Robotham D, strongly supports that “increased learning efficiency results by matching learning styles and instructional methods”¹¹.

There is huge evidence in the literature, that student centered approach in learning activities like problem based learning is successful educational strategy in which students learn how to learn and take responsibility of their own learning. This has positive effect in steering them to become self directed lifelong learners¹²⁻¹⁴. However, we found that the situation is alarming in our set up with only 3% PBL for the 3rd year while no PBL offered to 2nd year medical students. This issue need to be addressed especially when we are trying to move towards community based educational approach all over the kingdom, PBL need to be introduced right from the start and at least to be 25 % of the

Phase II medical curriculum.

CONCLUSION

Identifying learning style of students is an important tool for the educators in health profession to address their learning needs by diversifying the educational strategies. The resulting supportive learning environment for the learners will be helpful to achieve the desired learning outcomes.

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Conflict of Interest: The authors of this study have no conflict of interest.

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