



The Scope of Student Centered Learning in Medicine

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ABSTRACT

Education in medicine is transforming gradually in order to balance and optimize the information explosion with the technology boom of the 21st century. Today, education has become almost a fashion and is one of the most popular engagements for all. In this positively inspiring climate; the fervent search goes on for user-friendly, effective and applicable educational and instructional strategies in medicine that can work efficiently towards the grooming of our future physicians and surgeons at a feasible input of labor, cost and time.

Several teaching-learning theories have been suggested and they have invariably worked to a greater or lesser degree in different situations. One of the revolutionary ideologies in contemporary pedagogy is the recommendation for a shift of emphasis in responsibility from teacher to student; driven by the need for a change in the traditional didactic and dogmatic medical education atmosphere in order to prevent the students from becoming passive, apathetic and bored. The term “student centered learning” represents this shift in roles during teaching and learning. Student centered learning, gives students greater autonomy and control over choice of subject matter, learning methods and pace of study. While the rhetoric of theory and research is influential, personal experience is also a powerful motivator and this is central to the success of student centered learning in the modern educational climate.

This article outlines an interpretation of student centered learning in the medical scenario, describe attempts to introduce student centered activities to education courses, and discusses some of the issues arising from the adoption of these approaches.

Key words: Teaching, medicine, education, pedagogy, responsible.

INTRODUCTION

The concept of student–centered learning (SCL) has been credited as early as 1905 to Hayward and Dewey’s work. [1] Many philosophers describe it as the shift in power from the expert teacher to the student learner, driven by the need for a change in the traditional didactic and dogmatic medical educational atmosphere in order to prevent the students from becoming passive, apathetic and bored. [2] Central to this concept is the idea that the teacher should not ‘interfere with the learner’s process of spontaneous maturation; but rather, act as a guide and a facilitator. [3]

The term student–centered learning is widely used in the teaching and learning literature. Many terminologies have been linked with student–centered learning, such as flexible learning, experiential learning, child-centered learning and self-directed learning. [4, 5]Therefore, the slightly overused term ‘student–centered learning’ can mean different things to different people.

Student centered learning and the drive to adopt it as the central pedagogy of medical university courses, has been part of vigorous discussions in teaching and learning for a number of years. Student centered learning has been recommended by many experts and influential reports. This paradigm shift from linear, cumbersome teaching to an inclusive, adaptive learning has encouraged power exchanges among the stake holders of pedagogy in modern medical education. This review aims to explore into the practice and effectiveness of student centered learning along with presenting some critiques to its approach.

MATERIALS AND METHODS

The authors conducted an extensive review of literature from medical and adult education, psychology and pedagogy journals employing the search strategies of Mesh and Text word searching using Pub-med, Google, Bing, Mozilla and

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Science Direct search engines. Once the key article was identified, it was probed further into the text and then the 'related articles' feature and 'references' were followed up similarly. Various electronic journals and digital libraries were scanned including British medical library, National library of medicine, Embase, Cochrane, Directory of open access journals, open J gate, Indian database, gray literature database etc. Hard cover books and journals from Jazan medical library of Saudi Arabia were similarly searched for related content. A total of 94 articles were scanned out of which 58 met inclusion criteria based on the context relevance.

DISCUSSION

What exactly is student-centered learning?

It is an approach to education focusing on the needs of the medical students, rather than those of others involved in the educational process, such as teachers and administrators. This approach has many implications for the design of curriculum, course content, and interactivity of courses. This classroom teaching method acknowledges student's voice as central to the learning experience for every learner.

Teacher versus student centered learning: Where lies the difference?

Student centered learning, which is, 'putting students first', is in contrast to teacher-centered learning in the sense that it is focused on the student's needs, abilities, interests, and learning styles with the teacher as a facilitator of learning. Teacher-centered learning has the teacher at its centre in an active role and students in a passive, receptive role; whereas student-centered learning requires students to be active, responsible participants in their own learning. It makes the students assume a high level of responsibility in the learning situation and be actively choosing their goals and managing their learning. They can no longer rely on the lecturer to tell them "what, how, where and when to think".

Historical background:

Traditionally, teachers directed the learning process and students assumed a receptive role in their education. With the advent of progressive education of the 19th century, and the influence of modern psychologists, some educators attempted to largely replace traditional curriculum approaches with "hands-on" activities and "group work", in which the students determined on their own 'lessons' in class. Key amongst these changes was the premise that students actively construct their own learning. Theorists like John Dewey, Jean Piaget, and Lev Vygotsky, whose collective work focused on how students learn, were primarily responsible for the transition towards student-centered learning [1].

Salient features of student centered learning:

Student-centered learning allows medical students to actively participate in the discovery of learning processes from an autonomous viewpoint. A variety of hands-on activities are administered in order to promote successful learning. Unique, yet distinctive learning styles are encouraged in a student-centered classroom. With the use of valuable learning skills, students are capable of achieving life-long learning goals, which can further enhance student motivation in the classroom. Students consume the entire class time constructing a new understanding of the material being learned without being passive, but rather proactive [6].

Some key features of such a unique experiential learning process can be summarized as follows:

- Increased responsibility and accountability on the part of the student (in other words, the student is responsible for his /her own learning).
- An active learning process rather than passive learning.
- A deep learning and understanding from first hand personal experience that comes through direct involvement.
- An increased sense of autonomy in the learner (that is; freedom of expression and respect within the student - teacher relationship, in an open and lenient learning climate).
- An interdependence between teacher and student (a team work of mutual providing, tolerance and acceptance).

Changing pedagogical roles in student centered learning:

There is a change in trends involving and encompassing the teaching –learning domain in medicine which affects everyone and every aspect involved with it.

Some of these changing roles are elucidated below:

- The shift in the power relationship between the student and the teacher in medicine.

- The medical teacher becomes a facilitator and resource person; (in other words; the teacher is no longer the task master or a dominating role model; rather, he/ she is a helper and guide).
- The learner becomes a more equal counterpart; promoting and participating in the growth and development of the overall education process.
- The teacher and learner experience confluence in evolving medical education (that is, the affective and cognitive domains flow together).

Main pedagogic requisites of implementing the ‘student centered learning’ approach in medical curricula:

The student centered learning practices should be inclusive of the following basic traits:

- Make the medical student ‘more aware’ of what they are doing and why they are doing it.
- Make the medical student ‘more active’ in acquiring knowledge and skills and might include exercises in class, fieldwork, use of CAL (computer assisted learning) packages etc.
- ‘Focus’ on interaction, such as the use of tutorials and other discussion groups.
- ‘Look beyond’ the immediate course requirements to other benefits to the students in their future medical career.

Student centered learning / teaching methods commonly used in medical curricula:

It is important that students have sufficient motivation to learn so that they can take on the responsibility for learning actively and independently. Learning resource materials need to be sufficiently attractive and sufficiently interesting to whet students' appetites for learning. “The medium is part of the message” - resource materials which look tacky may not be taken seriously by learners. Effective learning resource materials provide students with carefully-chosen tasks and exercises which gives them the sort of practice that will help their learning to be successful.

Historically, the most important kinds of learning resources were paper-based, particularly books, journal articles, handout materials and students' own notes. Nowadays, the range of media available to support student learning is extended by the many technological developments, and includes interactive computer-based packages, using a variety of formats including interactive video, CD-ROM, and hypermedia; interactive computer-based communications media, including computer conferencing, electronic mail, on-line databases, and the Internet; media-based resource materials, including videotapes, audiotapes, and practical kits.

A variety of such strategies can be employed effectively in student centered learning. These vary according to the number of medical students involved [7]. In case of single students the designs that work well include independent projects, choice in subject of study or project, peer mentoring, portfolio development, writing reflections on learning, reflective diaries, quizzes, formative practicals and computer assisted learning etc. In case of small groups, discussion forums like buzz groups, cross over mixing by allocations, role playing, debate rounds, mind maps produced by students, learning journals etc. work well. In large student groups, snowball /pyramid discussion groups, student class presentations, field trips and quizzes, poster presentations or group practicals are usually effective. However, there is no fixed boundary between what's in and what's out and usually; the strategies used for one type of student group can also be applicable for another type of student group. It all depends on subjective and mutual experiences regarding “what works best”.

Student centered learning: A “food for thought” for teachers

Generally speaking; if one is to follow a student centered approach to learning then careful thought must be given to the use of teaching techniques such as web based learning. Generally this could offer flexibility in place and time but may not be useful in content choice [4]. Reviewing of assessment towards portfolio development or the use of competency measures may also have to be addressed [7]. The issue of accrediting learning and prior experience may also need consideration. At another level, there may be an emphasis on exposing the teaching methods for students to reflect on the learning experience. More support may be required for students in analyzing their needs so that they can be used as part of the learning process. From a content stance, this may need a clearer identification of core learning (what is non-negotiable), to be achieved by the average medical student [6].

Analysis of student centered learning: How effective is it?

Student centered learning appears to be reflective of today's society where choice and democracy are important concepts. This is a novel concept of an integrated, concise and clinically oriented medical curriculum and many philosophers believe that it makes medical students "practical thinkers" rather than "passive studiers"; encourages exploratory behavior and a comprehensive approach to learning. It improves reasoning skills, logical thinking, communication and teamwork which are the essential key competencies of a doctor.

Many educationalists hold the view that student centered learning is very effective to bridge the gap between theoretical concepts and practical applications in order to clear up misunderstood points. Reflection and abstract

conceptualization that is part of a “real experiential student centered learning” often make a deep impact on the learner’s mind that aids reflection and recall in the long term; thereby facilitating assimilation of core knowledge and stimulating deep learning. It promotes lexical enhancement, expression power, self confidence and the overall teacher student relationship that is crucial to the making of our future physicians and surgeons.

Academics have reviewed several studies on student centered learning and found that overall, it was an effective approach. [6,8] A six-year study in Helsinki University, which compared traditional and activating instruction, found that the activating group developed better study skills and understanding, but were slower in their study initially. [9] This ‘initial inertia’ has been attributed to the natural conservation instinct of humans that occurs upon introduction of any new and previously un-experienced phenomenon or trend [9].

Many researchers have quoted that students had increased participation, motivation and grades in courses implementing the student centered learning approach. [10] In addition, a clear majority of such students would be likely to recommend it to others over the more conventional approach. Students in a UK University further elaborated on the impact of student centered learning on them; they felt there was “more respect for the student in this approach, that it was more interesting, exciting, and it boosted their confidence levels and self image” [6].

Still other studies document that students vary in their responses to student centered activities. Flexibility in time and place is particularly attractive for many students with out of university commitments such as caring for children or other family members, and part time employment. However, some students find the responsibility for learning difficult, especially where it involves group work [8].

Education in medicine: The importance of relationships

It is undisputable that student centered learning nourishes the teacher-student relationship. [4] Relationships hold a central position in medical education and are critical in achieving favorable learning outcomes.[11] Emotions play an important role in students’ retention of knowledge, conceptualization of phenomena, and future behaviors .[12]The literature on adult education similarly illuminates the effect of relationships on learning of explicit curricular content [13,14].

The relationship that a teacher forms with the students in a learner centered educational environment will be the key source of experience that those students will draw upon when they find themselves in the role of a doctor in future [11]. These student network relationships during medical school impact on the professional behavior and choices of students as adults in the long run [11]. Hence the role of student centered learning is phenomenal in the framing of personal and professional growth among individuals [4].

Some critiques of student centered learning:

The learning context in the Medical University is complex. All classes have a diversity of students, with a range of backgrounds, experiences, intelligence levels, temperaments and a variety of knowledge about the subject under consideration. In such a scenario, there are many dilemmas to wrestle. Many students, in particular surface learners, tend to want to be told ‘what to do and what to think’. There is often a feeling among students that the lecturer has been paid to teach and should set about teaching. The tradition of ‘telling’ as ‘teaching’ is strong and student centered learning, despite its popularity, is not without criticisms since it requires students to assume active roles in their own learning.

The mammoth question still lies in “How far is one prepared to move from tradition towards innovation in more student centered approaches and risk poor appraisals by students”? Despite the widespread use of the term, one of the issues with student centered learning is the fact that ‘many institutions or educators claim to be putting student centered learning into practice, but in reality they are not’ [6].

The main critique of student centered learning is its focus on the individual learner. This is often difficult to balance and maintain in an unbiased setting. If each student is unique, and each requires a specific pedagogical approach appropriate to him or her and to no other, the construction of an all embracing pedagogy or general principles of teaching become an impossibility’ [3]. Thus, the very concept of a “homogenous ,universal class tutorial” can be in danger if it involves focusing completely on the individual learner and not taking into account the needs of the whole class.

Often, there is a lack of sound comparative evaluation of learner centered changes to medical curricula. Student centered learning is resource intensive, both in design and delivery [8]. Trained staff and institutional support for the well designed incorporation of such learning is often difficult to obtain.

The importance of the social context of learning and the value of interaction with peers is routinely emphasized in the socio-cultural view of learning [15]. The concept of being an independent learner choosing his/her own route of learning, may in fact drive some of the ‘sociability’ out of the learning process if care is not taken to emphasize the importance of peers. This autonomous individuality of student centered learning may lead to potential isolation of the learner and a threat to the sense of the community in the long term [16, 17].

Some skeptics describe student centered learning as a ‘Western’ approach to learning which may not necessarily transfer to the developing countries, where there are limited resources, different learning cultures and traditional belief systems[1].

Another problem may lie in the universal acceptance of this novel approach to learning. Students who value or have experienced more 'teacher-focused' approaches, may reject the student centered approach as frightening, embarrassing or too invading and exhausting [18].

However; even during the same course; students have been observed to change their views on learning and as they move through the years and mature; so do their views on teaching and learning. Studies have documented that students tend to accept and agree to it more with passing years [19].

Conclusion

Modern medical education trends have influenced the way in which we think, work and interact in pedagogic settings. Today, we are not just satisfied with 'what' we deliver; we want to know 'how well' we deliver it. In these rapidly changing times, when the approach to all services has become 'consumer centered'; there is increasing acceptance for novel teaching-learning practices ; like student centered learning, which grant better satisfaction to the medical student in terms of more completely answering incidental queries and retaining their active interest.

The acceptance for student centered learning is steadily increasing among the stake holders of the medical education community. The interpretation of the term 'student centered learning' appears to vary between authors as some equate it with 'active learning', while others take a more comprehensive definition including: active learning, choice in learning, and the shift of power in the teacher-student relationship. It is used very commonly in literature and in University policy statements, and this terminology is slowly but surely translating into practice.

Although recognizing that it is not necessarily an easy task for all; and student centered learning is not without some criticisms; but in general it has been seen to be a positive experience. The value of student-centered learning is undisputable:

"Placing learners at the heart of the learning process and meeting their needs, is taken to a progressive step in which learner-centered approaches mean that persons are able to learn what is relevant for them in ways that are appropriate. Waste in human and educational resources is reduced as it suggested learners no longer have to learn what they already know or can do, nor what they are un-interested in". Edwards, R. (scholar and philosopher) [20].

In a concluding note; it is worthwhile to mention that student centered learning is possible; but with limitations. It is feasible to allow the medical student choice of time and place but harder to provide the student choice in content and to acknowledge and use student strengths and weaknesses. It is, however, a worthwhile direction to explore.

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