ORIGINAL ARTICLE

Students' Perspective towards Self-Directed Learning as a Part of the New Competency-Based Curriculum of Indian Medical Students: A Mixed Method Study in a South Indian Medical College

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ABSTRACT

Objective: The aim of the study is to assess students' perspective on Self -directed learning introduced as a part of the revised Competency Based Curriculum in Indian medical education. **Materials and Methods:** It is mixed method observational study conducted in the department of Pathology, at a medical school in South India for second year students. 4 SDL sessions were conducted in 2 months and feedback was collected after the sessions. A total of 150 students accepted to answer the prevalidated questionnaire containing 15 closed ended question and 3 open ended questions on SDL. The 15 questions were analyzed by Likert scale and interpreted with mean, median, mode. **Results:** The maximum mean was that students continue to learn whether success or failure and the difficulties faced was in the communication skill aspects. The open-ended questions highlighted it motivated students to become lifelong learners. **Conclusion:** The students welcomed SDL as a part of the curriculum but needed more refinement in terms of priming the facilitators and the availability of the learning resources during the sessions.

KEY WORDS: Self-Directed Learning, Competency Curriculum, Medical.

Introduction

Self-directed learning (SDL) is an exercise in which the students develop the ability to seek, comprehend and imbibe the concept to become lifelong learners. It was defined by educational expert Malcolm Knowles as the course in which the learner identifies the purpose of knowing the specific topic, makes their goals, finds out the required resources, and evaluates the outcomes[1]. It improves the entire domain of learning like psychomotor, cognitive, metacognitive, and affective[2]. Self-directed learning focuses on the student-oriented approach rather than the teacher-oriented approach. It is an active form of learning, unlike passive lectures. Some studies also suggest that the learners who practice SDL perform better than the students attending didactic lectures[3–5]. Self-directed learning is a synonym for self-regulated learning. The objectives of learning should be well known by the student and their willingness to take up SDL shows their interest, ability, and attitude towards learning[6].

The national medical commission (NMC) of India formulated the new competency-based education (CBME) system in 2019 which has specific hours for self-directed learning in each subject. The main aim of having SDL mandatory is to make Indian medical graduates' lifelong learners. Medicine is a rapidly blooming field with discoveries almost every day to acquire knowledge and treat patients appropriately the quality of lifelong learning is essential[2]. Few studies have been done in foreign countries but they

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differ in many aspects. Hence this study aims at medical students' perspectives of self-directed learning influencing factors, how it impacts their knowledge acquiring strategies, and methods to improve it.

Materials and Methods

The research was conducted in a medical school in South India for Phase II medical students. It is an observational cross sectional study approved by the institutional Human Ethics Committee (Ref No: IHEC-I/0561/22). Informed consent was collected from all the student volunteers. The faculty were trained for the SDL prior to the session. The students were briefed about the importance of SDL, the conduction, and their role in it as focus groups. SDL topics from pathology were chosen and allotted to different study groups. At the end of the session, the feedback questionnaire was filled by the students via google forms and collected by e mails. The entire process occurred during the month of June and July 2022 with 4 different SDL sessions on different pathology topics and then the data was analyzed and compiled. Only students who have given consent to participate in the study were included. Students who have absent for the SDL sessions were excluded.

Results and Discussion

A total of 185 medical undergraduate students were studying in phase II. The study was purely voluntary and the researchers invited all the students in second year to participate. 35 were excluded since they were absent in any of the SDL sessions and around 10 students didn't not submit the feedback responses. Finally, a total of 150 students participated in the study. They are at an age group of 18 to 19 years. Some students are other states from India. A pre-validated questionnaire by Shen et al., with 15 closed ended questions was analyzed with Likert scale from 1 to 5 (Table 1). In the questionnaire, first 6 questions dealt with learning motivation , next 6 with the implementation plans and the rest explored how well they communicate or reproduce the learned concepts. The components used in Likert scale is 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-stronglyagree. This methodology was used to study psychometric properties of SDL abilities of nursing students. Self-directed Learning Instrument (SDLI) developed by Shen et al., is a self-report instrument that was designed to validate and measure self-directed learning of around 1500 Chinese nursing students . The SDLI contains domains of learning and motivation ,next involving

planning and implementing ,self-monitoring and interpersonal communication. This questionnaire was validated by Institutional Medical Education Committee. The mean score is highest for "I will continue to learn regardless of success or failure and lowest for "I can express messages effectively in oral presentation". The Standard Deviation is highest for "I'm good at controlling my learning time" and lowest for "I know the objective of the topic I have to learn".

For the next 5 open-ended questions, (Table 2) the noteworthy responses were. if they find SDL useful "It helps to understand the topic much better and it helps to memorize it and remember it" , "Yes, SDL is a skill that has helped me cover all the important topics which couldn't be explained in classes" suggestions on improving self-directed learning "more groups and more interaction about each one plan and idea of learning" ," Providing internet access to students", the resources that you used during self-directed learning "Pdf, mnemonics, presentation" " Standard books research study materials" difficulties faced during this process "Is to sit and execute it... Need more patience and avoid distraction" " It's mostly wastage of time as no one takes SDL seriously and it would be really difficult to concentrate when people around us are talking and are really disturbing"

This research mainly focused on the efficiency and acceptance of SDL among students. Several other studies have compared SDL with the usual method of study[7–9]. In the present study, the domains of learning, motivation are consistent and better than domains of communication and implementation. Most of the students found it difficult to correlate the discussed points with clinical. Students found it difficult in oral viva, writing and some in finding correct resources in the learning. The methods of evaluation after the sessions of SDL will be helpful in overcoming that. So it can be enhanced by incorporating problem-based and case-based study methods[10,11]. Other methods include quiz, mind mapping, reflective writing and group discussions. A study was done by Bharati et al, exclusively for phase 1 students, it rendered similar results. The significance of SDL in fulfilling the goals of CBME concludes with higher rates of acceptance[12]. Different teaching methods and their usefulness in medical education are dealt with by Jana et al[13].

Most of the students said that guidance from teachers enhanced the learning process but in a study done by Murad et al., the student found learning by

Sl. No.	Items	Mean	SD	Median	Mode	Minimum	Maximum
	Table 1: Self directed learning response score for individual items						
1	In the self directed learning session, I know the objective of the topic I have to learn.	3.94	0.96	4	4	0.90	5
2	I enjoyed the process of finding answers to new questions and solving them.	3.88	1.17	4	5	1	5
3	I set my priorities for learning.	3.84	1.03	4	4	0.98	5
4	I will continue to learn regardless of success or failure.	4.09	1.02	4	5	0.96	5
5	I will work continuously to improve my learning skills.	4.20	1.05	5	5	0.98	5
6	The self-directed learning enabled in-depth coverage of topic.	3.77	1.14	4	5	1	5
7	I am good at controlling my learning time.	3.41	1.24	4	4	1	5
8	It was good to study at my own pace.	4.03	1.04	4	5	0.99	5
9	I am more aware of my strengths in learning now.	3.87	1.07	4	4	1	5
10	I am capable of evaluating my learning outcome after the session.	3.74	1.13	4	4	1	5
11	I can connect to new knowledge with my own learning experience.	4.03	1.03	4	5	0.99	5
12	I know how to find resources for learning.	3.80	1.07	4	4	1	5
13	I can express messages effectively in oral presentation.	3.71	1.14	4	4	1	5
14	I am able to communicate messages effectively in writing.	3.93	1.14	4	5	1	5
15	My interactions with others has helped me plan for further learning.	3.98	1.10	4	5	1	5

 * The questionnaire has 15 closed ended questions answered with Likert scale 1 to 5 and mean, SD, mode were derived for each item. SD=Standard Deviation

themselves without intervention by faculty and peers effective. The facilitators play an important role and they must be motivated to give the requited guidance for the students. A study done by Bandari et al, coincides with the findings of this research. A similar study done by Balamurugan et al, compared various factors related to SDL like gender, year of education, and university marks[1]. Deyo et al considered SDL readiness and academic performance in laboratory courses. The attitude and knowledge of medical students were studied by Manoharan et al[14]. The major barriers are discussed by Chellaiyan et al[15]. The challenges encountered in implementing SDL are reluctance in acceptance of a newer method of teaching in some students, priming the faculties and to make available all the learning sources for all students.

Limitations: The sample size is small. More students from other institutions and in other phases I, III, IV can also be included. Self report bias by questionnaire based study can be considered.

Practice points : Feedback at regular intervals after each SDL can be collected and analyzed from both students and facilitators

- Regular Faculty development programs (FDP) on SDL may be conducted to prime the newly joined medical teachers
- Introducing SDL sessions in library hour makes easier accessibility for the resources during the

Table 2: Self directed learning responses for open ended questions

Open Ended Questions	Participant responses
Have you experienced this type of learning earlier?	Yes … during self study in pathology class Not much... Sometimes while referring for school projects. I have not done so much extensive kind of stuff
Do you find self-directed learning useful? If yes, how?	Yes, SDL is a skill that has helped me cover all the important topics which couldn't be explained in classes Yes I am able to learn in my own pace and hence am able to take more time to read and understand the hard topics Yes.....Self directed learning is the best form because it's just us and the book and we can get the at most knowledge Not that much
What are the resources that you used during self-directed learning?	Standard books research study materials Pdf, mnemonics, presentation, YouTube, online lectures so on Library and Internet Correlating clinical concepts using case based questions provided by faculty.Work book and schemas given by faculty and throughOnline means
What are your suggestions on improving self-directed learning?	Yes with more groups and more interaction about each ones plan and idea of learning The only issue I had was finding proper resources to read from and proper planning of my study plan throughout the year. So it would be better if the college told us only the core books to get, instead of making us purchase dozen others which we would find it hard to study from. Learning should be made fun instead of just cramming and ratification. Concept shud be understood first and we should try to reciprocate it in our own words. It can only be improved by changing the perspective of the person taking it. Ofcourse some help on how to approach the chapter . Or maybe enlighten us with the methods of learning. It may not be necessary all the time but some support from people who know this well would be very helpful
What are the difficulties you faced during this process?	It's mostly wastage of time as no one takes SDL seriously and it would be really difficult to concentrate when people around us are talking and are really disturbing Again the difficulty I faced was not knowing that I lacked the right books to study from, however I was still referring from various books for certain topics, which definitely helped me score better in my exams Not able to complete my required syllabus on time as I read in my own pace and start getting to know concepts that i like in detail Staying focused throughout the session Sticking to schedules while also navigating through other course work. Finding motivation to finish what I've started and not leaving it incomplete.

session

Conclusion

The study highlights that SDL introduced in the new CBME Indian medical education is welcomed by most of the students as it a student centered learning and creates self awareness of their learning strategies and ways to improve it. It points out the students' perspectives that help the facilitators to make the SDL sessions productive through their feedback.

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