Original Article

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_1105_23

Exploring the determinants of self-directed learning among medical undergraduates: A qualitative study

Usha Krishnan, Thyagarajan Ravinder[1], Therese Mary Dhason[1], Suganthi Manikesi[1], Devi Chithsabesan[1], Dorairaj Kalpanaraj[1]

Abstract:

BACKGROUND: The National Medical Council has recognized the importance of self-directed learning (SDL) for medical graduates and it has been included as one of the competencies for Indian Medical Graduates. The present study was conducted to explore different determinants, and the factors facilitating and deterring of SDL among medical undergraduates.

MATERIALS AND METHODS: This cross-sectional qualitative study was conducted with 40 phase 2 MBBS students and data were collected through focused group discussions over a period of four weeks. A content analysis approach was used in the analysis.

RESULTS: The participants included 23 women (58%) and 17 men (42%). The study revealed three main themes and six sub-themes as factors deterring SDL. The majority of participants (84%) favored individual learning, while a smaller number preferred team-based learning.

DISCUSSION: Cognitive factors emerged as the most common barriers, including problems with initiation and engagement in SDL and the enormous amount of data available. Educational environmental factors, such as heavy workloads and time constraints, as well as frequent assessments, were also identified as barriers. Attitudinal and mental barriers encompassed issues like lack of practical experience, difficulties in adapting to new learning environments, and challenges in concentration and focus.

CONCLUSION: Overall, this study fills gaps in our understanding of factors deterring students' engagement in SDL and provides valuable insights for educators and institutions in implementing effective SDL activities. By addressing these barriers, medical education can equip students better to become lifelong learners and meet the evolving demands of the medical profession.

Keywords:

Assessments, assignments, focused group discussion, medical education, self-directed learning, teaching-learning methods, team-based learning

Professor of Microbiology, Institute of Microbiology, Madras Medical College, Chennai, Tamil Nadu, India, [1]Department of Microbiology, Kilpauk Medical College, Chennai, Tamil Nadu, India

Address for correspondence:
Dr. Usha Krishnan, Professor of Microbiology, Institute of Microbiology, Madras Medical College, Chennai, Tamil Nadu, India.
E-mail: ushakrishnan72@gmail.com

Received: 24-07-2023
Accepted: 24-11-2023
Published: 29-07-2024

Introduction

The landscape of medical education is undergoing a profound transformation, propelled by the ever-expanding frontiers of medical knowledge and evolving healthcare challenges. In this dynamic environment, the role of the traditional passive learner is evolving into that of an active, self-directed learner. Self-directed learning (SDL), an andragogical approach that places the onus of learning upon the student as an adult learner, is gaining unprecedented prominence in medical education. This shift is not merely a trend but a necessity born out of the complex demands of modern healthcare. SDL cuts across all domains of learning and has a significant potential in shaping transformational learning experiences.[1]

In 2012, the National Medical Council (NMC) of India underscored the indispensable role

How to cite this article: Krishnan U, Ravinder T, Dhason TM, Manikesi S, Chithsabesan D, Kalpanaraj D. Exploring the determinants of self-directed learning among medical undergraduates: A qualitative study. J Edu Health Promot 2024;13:266.

of lifelong learning for medical graduates, integrating it as a core competency within the framework of the Indian Medical Graduate (IMG).[2] Sub-competencies for the core competency of lifelong-learner as per NMC Guidelines are an IMG at the time of graduation must demonstrate the ability to: do an objective self-assessment of knowledge and skills, continue learning, improve existing skills and attain new skills, search and critically appraise medical literature, utilize experiences, to improve personal and professional growth and learning, and apply the newly gained knowledge and skills in patient care.

Acknowledging the significance of SDL in nurturing these competencies, the NMC recommended an introductory session during the foundation course. However, recognizing the depth of SDL skills needed, a more comprehensive training approach is essential, especially in the preclinical years.

SDL, a dynamic process where learners take charge of their learning journey, involves self-assessment, setting learning objectives, resource exploration, employing suitable learning techniques, and evaluating outcomes.[3] Mastering SDL equips individuals to navigate learning both within and outside formal educational settings.

A study conducted on the effect of SDL abilities on student nurses demonstrates that SDL was significantly associated with academic performance.[4] Evidence suggests that SDL in health professions education is associated with moderate improvement in the knowledge domain compared with traditional teaching methods in a study by Murad *et al*.[5]

Another study documents overall improvement in student's performance, indicative of an improvement in learning outcomes when adopting the SDL module.[6] Other than academic performance, SDL was found to be positively correlated with various learning outcomes, including enhanced confidence, intrinsic motivation to learn, critical thinking, and creativity.[7]

Against this backdrop, this qualitative study was undertaken to delve into the perspectives and determinants of SDL among phase 2 medical undergraduates. The primary objective is to meticulously analyze the factors that either facilitate or hinder SDL, thereby offering nuanced insights into the challenges faced and the conducive environments for SDL.

Materials and Methods

Study design and setting

The research was designed as a cross-sectional qualitative study aimed at understanding SDL characteristics among 40 phase 2 MBBS students. The study took place within a specific timeframe of four weeks.

Study participants and sampling

The participants, consisting of phase 2 MBBS students, were purposefully selected, a non-probability sampling technique, deliberately chosen due to their specific qualities relevant to the study objectives.[8]

Data collection tool and technique

Data were collected through focused group discussions (FGDs) facilitated by a semi-structured questionnaire outlined in a facilitator's guide [Table 1]. During these discussions, participants were encouraged to freely express their experiences regarding SDL. In each FGD, 8–10 students participated and it lasted for 30 and 40 minutes. The interviews were immediately transcribed and analyzed.

SDL topics were presented as case studies based on infective syndromes, aligning with the competency-based medical education (CBME) curriculum. Participants were given the freedom to choose specific topics and teaching-learning (TL) methods, either individual or team-based, enhancing the depth and diversity of the data collected.[9]

Data analysis

The data obtained from the FGDs were analyzed using the qualitative inductive content analysis approach.[10] This method allowed for the extraction of themes and categories directly from the participants' responses, without being influenced by previous theoretical perspectives. Through careful reading and multiple iterations of the collected data, meaningful units (words, sentences, or paragraphs) were identified. Coding was

Table 1: Facilitators guide with a semi-structured questionnaire to conduct FGD

Guidance for the facilitator: The facilitator needs to explore the opinions of each and every participant. Keep it open-ended.	
S. no.	**Questions**
1	What is SDL? Or What do you know about SDL?
2	Did you find the introduction session useful?
3	Did you understand the learning objectives of the SDL session?
4	What was the toughest aspect or part of SDL session? Why? How did you overcome that?
5	How confident you are in doing a literature search and verifying the authenticity of it?
6	What are the factors that promoted SDL? Topic/faculty/ interactive session/integration/PBL/CBL/seminar/ assessment/, etc.
7	What are the factors that deterred SDL? Age of the students/ stream of schooling state board/CBSE/maturity and cultural background/limited time/assessment, etc.
8	How did you do time management?
9	Can you identify one new point/knowledge/skill learned by undergoing SDL activity?

applied to these units, describing different aspects of the content. Categories were then developed through a comparative and grouping process, organizing similar codes based on their resemblances. This systematic analysis method ensured the emergence of specific and undefined components of SDL, contributing to a nuanced understanding of the participants' experiences.

Ethical considerations

Ethical approval was obtained from the institutional ethics committee. Participants were provided detailed explanations about the study objectives, data collection methods, and the confidentiality of their details. Informed consent was obtained from all participants before their involvement in the study.

Results

The participants included 23 women (58%) and 17 men (42%). The provided questionnaire for the FGD [Table 1] is a comprehensive tool designed to deeply explore participants' experiences and perceptions. Starting with fundamental inquiries about participants' understanding of SDL, the questionnaire gauges their initial knowledge and preconceived notions. Particularly crucial are the questions delving into challenges faced during SDL, shedding light on specific obstacles participants encountered and enabling the identification of common pain points. Additionally, evaluating participants' confidence in conducting literature searches and verifying authenticity taps into their research skills are fundamental in the SDL process.

By inquiring about elements that promote SDL, such as specific topics, faculty guidance, or interactive sessions, the questionnaire uncovers the facilitators that enhance the SDL experience. Conversely, understanding the deterrents, including factors like age, educational background, and time constraints, provides critical insights into barriers that need to be addressed to optimize the SDL environment.

Furthermore, participants' strategies for time management are probed, essential for effective SDL. This question provides a window into their organizational skills, indicating areas where participants might require additional support or guidance. Analysis of data revealed three themes and six sub-themes as SDL barriers given in Table 2.

Cognitive factors were the most common factors that deterred SDL. When the participants were asked to talk about the toughest aspect of doing SDL, most of them expressed their concern about lack of self-initiation with no help and assistance available. This category was picked up with the coding with the words/phrases like "without help," "by ourselves," "no assistance/help/guidance," "engaging/study/research myself," "self-initiation," "starting hesitation," "quiet confusing in the beginning," "on our own," and "self-motivation."

Table 2: Themes and sub-themes of factors deterring SDL

No.	Themes	Sub-themes
1	Cognitive factors	1a. Problems with initiation and engaging in SDL
		1b. Plethora of data
2	Educational environmental factors	2a. Heavy workload/time constraint
		2b. Assessment
3	Attitudinal/mental barriers	3a. Lack of practical experience
		3b. Adaptation to new learning environment

Another major challenge was with the plethora of data available on internet sources and to ensure the authenticity of data. As per students' statements:

> "The toughest part for me is to confirm the authenticity of the data I have collected as different websites gives different values of data."
>
> "There are lot more information. Choosing correct one is important and toughest one is correlating from more than 2 sources."

Educational environmental factors: Majority (80%) of students had trouble coping up with their perception of heavy workload and frequent assessments. In this regard, two participants expressed their views: "For me lack of time was the main deterring factor in doing SDL, as I have to spent considerable time for that amidst assessment exams. I learned skimming quickly." "Management of time and management with internal assessment were bit hard."

Attitudinal/mental barriers: Students had difficulty adapting and understanding the objectives of their role in the changing learning environment. Seven students commented that the stream of schooling, cultural background, and maturity level of the students influence the SDL.

> "To concentrate and bring back focus on SDL without interruption was tough as it needs dedicated reading." "Not used to this type of learning."

Similarly in this study, a quarter of study participants had difficulty in understanding the objectives of SDL and adaptation to CBME. One student expressed his concern that "Knowing the topic in exam point of view would be helpful."

> "Examination based important questions should be given more importance"—Comment by a student.

While enrolling in the study, the participants were asked to choose their method of learning as either individual or team-based with two members per team. During FGD different learning styles and preferences in promoting SDL were discussed. In that, 32 (84%) participants felt that individual learning was the best style suited for them, and 8 students preferred team-based learning. While exploring different learning styles, members of team-based learning shared their experiences with the group.

> "It was difficult to understand on our own all of a sudden. By referring and reading again and again and discussing with colleagues and mentors helped."

> "Discussing topic among group members matters a lot."

Answering the question related to identifying new knowledge or skills acquired during SDL and recognizing existing knowledge gaps, about 88% of participants acknowledged that they could learn a new skill of SDL and are confident enough to use it in the future.

Discussion

Throughout one's career, the ongoing pursuit of SDL is necessary for continuing professional development. It is a major component of adult learning which entails learners to take initiative and responsibility for their own learning.

The study identified three core themes and their corresponding sub-themes related to SDL challenges among phase 2 medical undergraduates. Under cognitive factors, participants struggled with the initiation and active engagement in SDL, often finding it daunting to initiate SDL. Additionally, the overwhelming amount of available data posed a significant challenge, highlighting the struggle to discern relevant information amidst a plethora of resources. This is similar to a study by Kohan *et al*.[11] in which access to information sources and equal availability of huge amounts of information retrieved from the internet was problematic.

Educational environmental factors revealed that heavy workloads and time constraints, compounded by frequent assessments, hindered effective SDL. These external pressures often make it challenging for students to dedicate sufficient time to SDL initiatives. This is similar to a qualitative study on SDL in which students had difficulty working outside the classroom, as they lacked time to do so and they felt that there was not enough time to fully implement SDL.[12] Because of extensive assignments and frequent assessments, many participating students considered SDL as burdensome. According to a study on the students' perceptions of the learning environment, their perception of heavy workload and improper assessment led them toward shallow learning.[13]

About a quarter of study participants said that keeping an assessment on SDL topics would motivate them to learn. This is similar to the study by Premkumar *et al*.,[14] in which assessment was found to be a key factor that both facilitated and deterred SDL.

Lastly, attitudinal and mental barriers included a lack of practical experience and difficulties adapting to new learning environments. These factors emphasized the importance of practical exposure and acclimatization to evolving educational methods for fostering successful SDL among medical undergraduates. Students focus on learning with the goal to pass examinations and their shift from deep to surface learning approach has been established in various studies.[15]

Topic and TL methods were the two themes that favored the SDL. Topics given as case-based learning facilitated SDL. Interactive sessions with doubt clearing and various TL methods like integration, role play, and seminars facilitated SDL.

In this study, the majority (84%) of the participants felt that to be effective, prioritizing the SDL topic and time management have to be done individually. This is in contrast to a study in which the participants expressed the benefits of learning from their peers and effective time management as each one in the team contributed their understanding of the topic.[16]

In a study on students' abilities and their perspective on SDL, the students were found to be open to collaborative and cooperative learning, as suggested from their response that interaction with others helps them plan for further learning.[17]

In a study by Patra *et al*.,[18] 60% of the students reported that they were motivated to study the allotted topic further. In this study, 88% of participants reported the positive effect of SDL and they were motivated to learn.

The study emphasizes the importance of SDL as a crucial component of adult learning, requiring learners to take responsibility and initiative for their own learning. It highlights the need for support and assistance for students in initiating SDL and managing the abundant information available. Limitations of the study are as follows: This was the maiden initiative both for the students and facilitators. Different learning needs of the heterogeneous learners were not met. There was no assessment and longitudinal follow-up included.

Recommendations: To curate the data and to get clinically relevant information pre-clinical medical students must be exposed to information literacy and literature search methods. Additionally, educational institutions should address the students' perception of increased workload and create an environment conducive to SDL by providing proper assessment strategies and practical experiences.

Conclusion

This study addresses the gaps in the knowledge of factors deterring students' engagement in SDL. The findings suggest that interventions should focus on addressing the identified barriers by employing appropriate teaching and learning methods as well as assessment approaches tailored to SDL. By addressing these barriers, medical education can equip students better to become lifelong learners and meet the evolving demands of the medical profession.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Charokar K, Dulloo P. Self-directed learning theory to practice: A footstep towards the path of being a life-long learner. J Adv Med Educ Prof 2022;10:135-44.
2. Competency Based Undergraduate Curriculum for the Indian Medical Graduate. New Delhi: Medical Council of India; 2018. Available from: https://wwwmciindiaorg/CMS/information-desk/for-colleges/ug-curriculum. [Last accessed on 2019 Dec 25].
3. Knowles MS. Self-Directed Learning: A Guide for Learners and Teachers. New York: Association Press; 1975. p. 135.
4. Avdal EÜ. The effect of self-directed learning abilities of student nurses on success in Turkey. Nurse Educ Today 2013;33:838–41.
5. Murad MH, Coto-Yglesias F, Varkey P, Prokop LJ, Murad AL. The effectiveness of self-directed learning in health professions education: A systematic review. Med Educ 2010;44:1057-68.
6. Thota S, Nimmanapalli HD, Bitla AR. Implementation and evaluation of self-directed learning activity in biochemistry for first-year MBBS students. J Med Educ 2022;21:e126957.
7. Qian J, Li X, Liu T, Zhang M, Li K. Direct and indirect effects of self-directed learning on creativity in healthcare undergraduates: A chain mediation model of openness to challenge and diversity and creative self-efficacy. Front Psychol 2023;14:1182692.
8. Etikan I, Musa SA, Alkassim RS. Comparison of convenience sampling and purposive sampling. Am J Theor Appl Stat 2016;5:1-4.
9. Khan AM, Upadhyay MK, Sharma R, Rajoura OP, Bhasin SK. Module to facilitate self-directed learning among medical undergraduates: Development and implementation. J Edu Health Promot 2020;9:231.
10. Elo S, Kyngäs H. The qualitative content analysis process. J Adv Nurs 2008;62:107–15.
11. Kohan N, Soltani Arabshahi K, Mojtahedzadeh R, Abbaszadeh A, Rakhshani T, Emami A. Self-directed learning barriers in a virtual environment: A qualitative study. J Adv Med Educ Prof 2017;5:116-23.
12. Velarde-García JF, Álvarez-Embarba B, Moro-Tejedor MN, Rodríguez-Leal L, Arrogante O, Alvarado-Zambrano MG, *et al.* Barriers and facilitators to the learning and acquisition of research competencies among nursing students through active methodologies: A qualitative study using reflective writing. Healthcare (Basel) 2023;11:1078.
13. Lizzio A, Wilson K, Simons R. University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. Stud Higher Educ 2002;27:27–52.
14. Premkumar K, Vinod E, Sathishkumar S, Pulimood AB, Umaefulam V, Prasanna Samuel P, *et al.* Self-directed learning readiness of Indian medical students: a mixed method study. BMC Med Educ 2018;18:134.
15. Shah DK, Yadav RL, Sharma D, Yadav PK, Sapkota NK, Jha RK, *et al.* Learning approach among health sciences students in a medical college in Nepal: A cross-sectional study. Adv Med Educ Pract 2016;7:137–43.
16. Hill M, Peters M, Salvaggio M, Vinnedge J, Darden A. Implementation and evaluation of a self-directed learning activity for first-year medical students. Med Educ Online 2020;25:1717780.
17. Bhandari B, Chopra D, Singh K. Self-directed learning: Assessment of students' abilities and their perspective. Adv Physiol Educ 2020;44:383–6.
18. Patra S, Khan AM, Upadhyay MK, Sharma R, Rajoura OP, Bhasin SK. Module to facilitate self-directed learning among medical undergraduates: Development and implementation. J Edu Health Promot 2020;9:231.