

Self Directed Learning Readiness Scale and Its Association with Academic Performance in Among Medical Students - A Cross Sectional Study

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Abstract

Background: Self-Directed Learning (SDL) is crucial for medical students to develop lifelong learning skills. This study evaluated SDL readiness among II MBBS students and its association with academic performance.

Methods: This cross-sectional study used Fischer's validated SDLRS questionnaire (40 items, 3 domains) among 219 II MBBS students. SDLRS scores were compared with pathology marks.

Results: Mean SDLRS score was 146.79; 40% students had SDLRS >150. No significant correlation found between SDLRS and pathology marks ($p > 0.05$). SDLRS scores significantly associated with extracurricular (outdoor) activities ($p < 0.05$).

Conclusion: Students lack self-directed learning skills. Integrating SDL-promoting strategies into curricula and encouraging extracurricular activities may enhance SDL readiness.

Keywords: CBME, Self-Directed Learning, problem-solving, Self-management

Introduction

The shift towards Competency-Based Medical Education (CBME) has underscored the importance of Self-Directed Learning (SDL) in developing lifelong learning skills among healthcare professionals.¹ As medical knowledge continues to evolve at an unprecedented pace, SDL enables students to take ownership of their learning, fostering adaptability and critical thinking.² According to Knowles' andragogy theory, adults learn best when they are self-directed, motivated, and can apply learning to real-life situations.³ In medical education, SDL is crucial for developing critical thinking, problem-solving, and self-assessment skills, ultimately leading to improved patient care and outcomes.⁴

Despite its importance, students' readiness for SDL varies, and their academic performance may be influenced by their ability to self-direct their learning.⁵ Previous studies have shown mixed results regarding the association between SDL readiness and academic performance, highlighting the need for further research.^{6,7} For instance, a study among medical students in Malaysia found a positive correlation between SDL readiness and academic performance, while another study in India reported no significant association.⁸ These conflicting findings suggest that SDL readiness and its association with academic performance may be influenced by various factors, such as cultural and educational contexts.⁹

This study explores the readiness of II MBBS students for SDL and its association with academic performance, aiming to inform strategies for effective SDL implementation in CBME.¹⁰ The findings of this study

will contribute to the existing literature on SDL in medical education and provide insights for educators to design targeted interventions.

The study objective was evaluate SDL awareness by using Self Directed Learning Readiness Scale among II MBBS students, To compare SDLR score with their academic performance and To evaluate the role of various factors influencing SDL.

Materials and Methods

This cross-sectional study was conducted among II MBBS students (n=219) after obtaining IEC approval. The Fischer's validated Self-Directed Learning Readiness Scale (SDLRS) questionnaire was used to assess SDL awareness. The questionnaire consisted of 40, evaluating three domains: Self-management (13), Desire for learning (15), and Self-control (12), using a 5-point Likert scale for scoring (1=Strongly Disagree, 5=Strongly Agree). Students' second internal marks in pathology were used to compare SDLRS scores with academic performance. Data collection was done during six months, and students were briefed about the purpose and process of the study. Informed consent was obtained, ensuring confidentiality and anonymity. The data was analyzed using SPSS software, and correlation analysis (Pearson's coefficient) was performed to evaluate the association between SDLRS scores and academic performance. Descriptive statistics (mean, SD, frequency) were used to summarize the data. Additionally, multiple regression analysis was done to identify predictors of academic performance among SDLRS domains. The level of significance was set at $p < 0.05$. Ethical guidelines were strictly followed, and participants were given the right to withdraw from the study at any time.

Results

The present Data Analysis: 40 item SDLRS has 3 domains, Self-management (SM n=13), Desire for learning (DL n=15), Self-control (SC n=12). Data analysis was done by using student's t test, Pearson's correlation, Reliability analysis.

Table 1 : Pearson’s correlation between pathology marks and SDLRS

SDLRS score	Mean score	Pathology Marks (mean)	Correlationcoefficient (r)	r ²	p value
TOTAL	146.79	43.71	-0.03	0.07	>0.05
SM	31.96	43.71	0.09	0.83	>0.05
DL	49.42	43.71	-0.05	0.22	>0.05
SC	65.42	43.71	-0.07	0.51	>0.05

Above the table shows Pearson's correlation between SDLRS scores and pathology marks: SDLRS score: Total and domain-wise scores (Self-management, Desire for learning, Self-control). - Mean score: Average scores for each SDLRS domain. - Correlation coefficient (r): Measures relationship strength between SDLRS and pathology marks. Values are close to 0, indicating weak

correlations. The p-value: All >0.05, indicating no statistically significant correlations.

There was no variation in correlation was found between SDLRS scores and pathology marks (p>0.05). The mean SDLRS score was 146.79, and mean pathology marks were 43.71. None of the SDLRS domains (Self-management, Desire for learning, Self-control) showed a significant correlation with academic performance.

Table 2: Impact of various factors on SDLRS

Total SDLRS		<150		≥150		Value
		n	%	N	%	
Gender	Female	70	54%	48	53%	>0.05
	Male	59	46%	42	47%	
Hostel	Day scholar	42	33%	29	32%	>0.05
	Hostler	87	67%	61	68%	
Parent	Non- doctor	115	89%	77	86%	>0.05
	Doctor	14	11%	13	14%	
Sibling	Non- doctor	105	81%	74	82%	>0.05
	Doctor	24	19%	16	18%	
Schooling	Metro	9	7%	6	7%	>0.05
	Rural	21	16%	14	16%	
	Urban	99	77%	70	78%	
Extra curricular	Indoor	23	18%	25	28%	<0.05
	Outdoor	62	48%	57	63%	
	No activity	44	34%	8	9%	

The data shows SDLRS scores categorized as <150 and ≥150, analyzed by various factors:

Gender: No significant difference ($p > 0.05$); similar distribution of males and females in both SDLRS groups. Hostel/Day scholar: No significant difference ($p > 0.05$); hostlers and day scholars similarly distributed. Parent/Sibling occupation (doctor vs non-doctor): No significant difference ($p > 0.05$). Schooling location (Metro/Rural/Urban): No significant difference ($p > 0.05$); majority urban schooling.

Extracurricular activities: Significant difference ($p < 0.05$). Higher SDLRS scores associated with outdoor activities (63% in ≥ 150 group vs 48% in < 150 group). Lower SDLRS scores associated with no activity (34% in < 150 group vs 9% in ≥ 150 group)

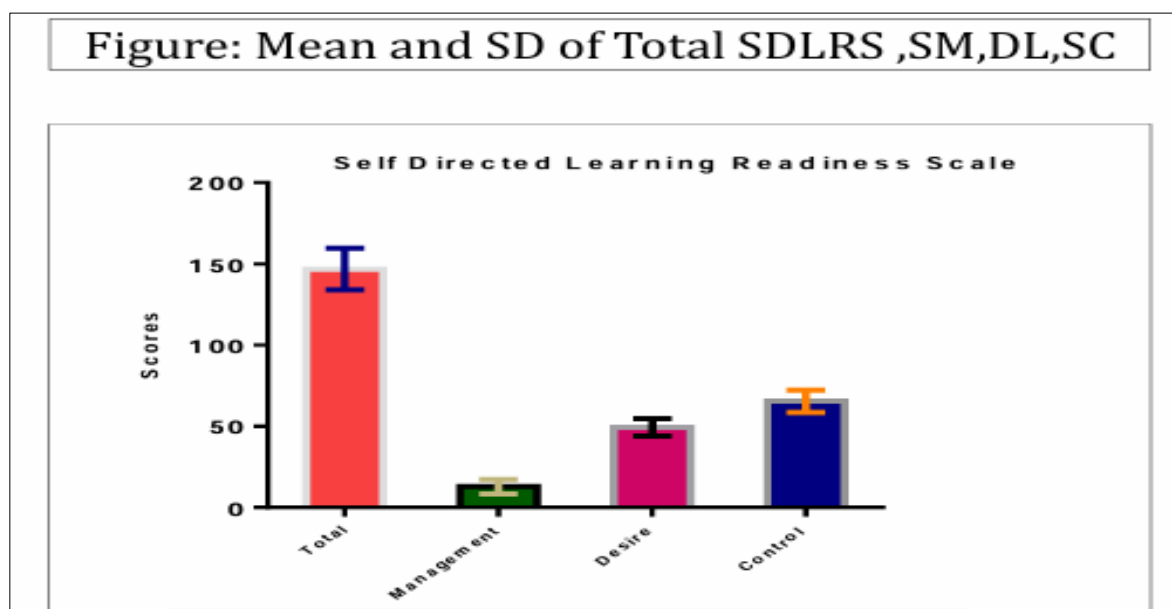
Table 3: Mean and SD of Total SDLRS ,SM,DL,SC

Description	Total	Management	Desire	Control
Mean	146.79	31.96	49.42	65.42
SD	12.93	4.44	5.35	6.89
Max	180.00	45.00	63.00	80.00

Comparing Domain Scores: Self-control (SC) has the highest mean score (65.42), indicating students are relatively strong in regulating their learning. Desire for learning (DL) is moderate (mean 49.42). Self-management (SM) has the lowest mean score (31.96), suggesting an area for improvement.

Students scored highest in Self-control, indicating good regulation of learning. Self-management is an area for improvement, possibly needing more training or support. Desire for learning is moderate; could be nurtured further.

Figure 1:



Discussion

SDL is a dynamic framework, learners identify their educational needs, set specific objectives, seek appropriate resources, and independently evaluate their

progress.^{11,12} According to our study, only 40% of students demonstrated high SDL readiness. Academic performance in pathology was not significantly correlated with SDLRS scores ($r^2 = 0.07$, $p > 0.05$). This

underscores the need to encourage SDL among students by recognizing their learning needs and modifying traditional teaching modalities to encourage self-directed learning skills.¹³ Developing SDL abilities is crucial for lifelong learning and professional growth in medical profession.¹⁴ Strategies like problem-based learning, reflective practice, and student-led learning opportunities could enhance SDL readiness. Badyal *et al.* recommend that SDL if conducted appropriately, can have a high impact on medical education. The orientation of facilitators and the readiness of students must be considered well in advance to introduce SDL sessions efficiently.¹⁵ Patra *et al.* observed that 67% of the students were satisfied, and 66% were driven to study further following the SDL session, hence, SDL can be considered an effective method of learning in motivated learners. The integration of digital tools and platforms further enhances SDL, with e-learning modules, educational apps, and online discussion forums providing flexible and accessible learning opportunities.¹⁶

Greveson and Spence have observed that contextual factors such as cultural, social, past experiences and educational settings impact the motivation and ability of learners to be self-directed.¹⁷ This may explain the concerns of learners' difficulty and stability across different health professional groups and varying learning backgrounds Prachita and Vrushali found that clinical students had significantly higher mean total SRSSDL scores as compared to pre-clinical students in all subdivisions of the tool.¹⁸ While SDL emphasizes learner independence, the role of mentorship and peer collaboration remains essential. Mentors offer invaluable feedback and guidance, while peer learning enhances knowledge-sharing. Effective implementation strategies

include faculty development programs, integrating SDL into the curriculum, providing faculty support, and utilizing digital tools to enhance learning.^{19,20}

The integration of digital tools and platforms further enhances SDL, with e-learning modules, educational apps, and online discussion forums providing flexible and accessible learning opportunities. The diversity of SDL strategies and their varied implementation across educational contexts necessitates a comprehensive evaluation of their effectiveness, highlighting gaps and future research directions, ensuring SDL methodologies continue to evolve to meet the demands of modern medical training. Limitations include a single-center study and focus on pathology marks only.²¹ Further research could explore SDLRS in other contexts and subjects. Implications: Encourage extracurricular activities to boost SDL skills. Integrate SDL-promoting strategies into curricula. - Consider SDL readiness when designing learning approaches. Recommendations: - Incorporate SDL training in medical education. Use SDLRS to identify students needing support. Promote physical activity as a tool for enhancing SDL.

Conclusion

Limited studies on SDL awareness exist in India; our study indicates II MBBS students lack self-directed learning skills. No association found between SDLRS scores and academic performance, suggesting strategic/superficial reading contributes to higher marks. The study highlights a need to bridge this gap by introducing training modalities like PBL, SDL sessions, and skill assessments to enhance concept retention and SDL skills. The present study recommends to Integrate SDL-promoting strategies (PBL, SDL sessions, digital platforms, role play etc) into medical curricula.

Encourage extracurricular activities to boost SDL skills.

Use SDLRS to identify students needing support.

References

1. Chaudhuri A, Manivasakan S, Ananthakrishnan N. The role of a specific module for motivating medical educators towards self-directed learning in medical education: A qualitative study. *The National medical journal of India*. 2025;38(2).
2. Chaudhuri A, Shivasakthy M. The evolution of medical education: Embracing self-directed learning. *Indian Journal of Physiology and Allied Sciences*. 2024 Dec 24;76(04):5-9.
3. Ngozwana N. The application of adult learning theory (andragogy) by adult educators and adult learners in the context of Eswatini. *Uneswa Journal of Education (UJOE)*. 2020 Oct 8.
4. Murad MH, Coto-Higuera F, et al. Self-Directed Learning in Health Professions Education: A Scoping Review. *J Contin Educ Health Prof*. 2016;36(3):167-177.
5. Siddiqui FS, Nerali JT, Telang LA. Relationship between the sense of coherence, self-directed learning readiness, and academic performance in Malaysian undergraduate dental students. *Journal of education and health promotion*. 2021 Jan 1;10(1):105.
6. Premkumar K, Pockett C, et al. SDL Readiness and Academic Performance in a Problem-Based Learning Medical Curriculum. *Med Sci Educ*. 2018;28(2):273-281.
7. Murray Fisher, Jennifer King and Grace Tague. Development of a self-directed learning readiness scale for nursing education. *Nurse Education Today* 2001;21: 516–525.
8. Premkumar K, Vinod E, Sathishkumar S, Pulimood AB, Umaefulam V, Prasanna Samuel P, John TA. Self-directed learning readiness of Indian medical students: a mixed method study. *BMC medical education*. 2018 Jun 8;18(1):134.
9. Alotaibi KN. The learning environment as a mediating variable between self-directed learning readiness and academic performance of a sample of Saudi nursing and medical emergency students. *Nurse education today*. 2016 Jan 1; 36:249-54.
10. Sande S, Rajguru MM. Effectiveness of integrated self-directed learning in the form of case-based learning to promote active learning among second-year MBBS students. *Journal of Education and Health Promotion*. 2025 May 1;14(1):208.
11. Ru-Zhen Luo, Xiao-Hong Zhang, Chun-Mei Zhang, Yan-Hui Liu. Impact of self-directed learning readiness and learning attitude on problem-solving ability among Chinese undergraduate nursing students. *Frontiers of nursing* 2019;6(2):143-150.
12. Kalyani Premkumar, Elizabeth Vinod, Solomon Sathishkumar, Anna B. Pulimood, Valerie Umaefulam,P. Prasann etal. Self-directed learning readiness of Indian medical students: a mixed method study. *BMC Medical Education* ;2018;134(18):1-10.
13. Murad MH, Varkey P. Self-directed learning in health professions education. *Ann Acad Med Singap* 2008; 37:580–90.
14. Levett-Jones TL. Self-directed learning: Implications and limitations for undergraduate nursing education. *Nurse Educ Today* 2005; 25:363–8.
15. Badyal DK, Lata H, Sharma M, Jain A. Triple Cs of self-directed learning: Concept, conduct, and

- curriculum placement. *CHRISMED J Health Res.* 2020; 7:235-9.
16. 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.
 17. Greveson GC, Spence JA. Self-directed learning—the importance of concepts and contexts. *Med Educ.* 2005; 39:348-9.
 18. Prachita W, Vrushali P. Evaluation of self-directed learning readiness among undergraduate students in an Indian Physical Therapy Institute. *Int J Sci Healthc Res.* 2021; 6:1-6.
 19. Liu TH, Sullivan AM. A story half told:A qualitative study of medical students'self-directed learning in the clinical setting. *BMC Med Educ* 2021; 21:494.
 20. Viswanathan M, Patnode CD, Berkman ND, Bass EB, Chang S, Hartling L, et al. Recommendations for assessing the risk of bias in systematic reviews of health-care interventions. *J Clin Epidemiol* 2018; 97:26–34.
 21. Maphalala MC, Nkosi N. Strategies for enhancing self-directed learning in Open Distance and E-Learning (ODEL) contexts. *E-Journal of Humanities, Arts and Social Sciences.* 2025 Jul 25;6(8):1640-54.