

Self-rating on Self-directed Learning: A Cross-Sectional Survey on a Cohort of Medical Undergraduates from Nepal.

Alok Atreya,^{a,c} Samata Nepal,^{b,c} Jenash Acharya^{a,d}

ABSTRACT

Introduction: As medicine is an ever-changing field, it necessitates medical students to develop independent learning skills for continuous learning process. Self-directed learning (SDL) is a learning strategy where students take the initiative to learn on their own. It is basically an independent study where the students use available resources and learn independently of the subject. **Methods:** This self-administered questionnaire study assessed five domains of SDL consisting of 60 items. The responses were made on a five-point Likert scale: from 5 = always to 1 = never. The level of self-directed learning was categorized as high, moderate and low if the scoring range was between 221-300, 141-220 or 60-140 respectively. Any student scoring in the range between 221 and 300 was considered an effective self-directed learner. **Results:** The present study found three out of four the students (74.7%, n=56) were active self-directed learners. However, one out of four students were half-way in becoming self-directed learners. **Conclusion:** SDL skill is crucial not only for the students but also for the clinicians in a complex learning process for continuous advancement of knowledge in medical profession. The findings of the present study showed that majority of the students were effective self-directed learners. The effectiveness of SDL process can be accomplished if the students are encouraged and motivated during Problem Based Learning (PBL) sessions. Identifying the factors that spark interest amongst the students to learn on their own can be achieved by active feedback sessions.

Keywords: Medical education, Nepal, Problem based learning (PBL), Self-directed learning (SDL)

INTRODUCTION:

Although 42 years have passed from the start of medical education in Nepal, very few studies have been conducted in terms of quality of medical education.[1] The quality of medical education is assessed by Nepal Medical Council, which in 1994, recommended all the medical colleges to establish a Medical Education Unit/ Department.[2] However, researches concerning improvement of medical

education in Nepal is sparse.

Medical education is vast and limitless. Although medical colleges have syllabus and guidelines for the contents to be taught during the academic years in medical school, it also prepares students to face challenges to treat new diseases or ailments that were not present or taught during the formal undergraduate training. As medicine is an ever changing field, it has been emphasized that medical students develop independent learning skills for continuous learning process.[3] Self-directed learning (SDL) is a learning strategy where students take the initiative to learn on their own. [4] It is basically an independent study where the students use their available resources and learn

Submitted: 04 March, 2020

Accepted: 20 May, 2020

Published: 11 June, 2020

a - Assistant Professor, Department of Forensic Medicine,

b - Lecturer, Department of Community Medicine,

c - Lumbini Medical College Teaching Hospital, Palpa, Nepal.

d- Kathmandu Medical College Teaching Hospital, Kathmandu, Nepal.

Corresponding Author:

Alok Atreya

e-mail: alokraj67@hotmail.com

ORCID: <http://orcid.org/0000-0001-6657-7871>

How to cite this article:

Atreya A, Nepal S, Acharya J. Self-rating on Self-directed Learning: A Cross-Sectional Survey on a Cohort of Medical Undergraduates from Nepal. *Journal of Lumbini Medical College*. 2020;8(1): 5 pages. DOI: <https://doi.org/10.22502/jlmc.v8i1.319>. Epub: 2020 June 11.



Licensed under CC BY 4.0 International License which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

independently about the subject.[4] As defined by Malcolm Knowles in 1975: “*In its broadest meaning, self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.*”[5]

The approach of Problem Based Learning (PBL) was introduced during mid-1960s as an innovative approach in medical education.[4,6] The curriculum for initial years of medical school usually focuses upon basic science subjects which the students see least relevant as future doctors. The concept of PBL was to overcome this disappointment. [6] The students in PBL are presented with a realistic medical ‘problem’ that physicians commonly encounter in clinical settings.[6] PBL method is a problem centric approach where problems are the starting point of the learning process. Solving the given problem will conceptualize a student of the given disease or condition. All the medical colleges in Nepal have adopted the concept of PBL for undergraduate teachings.[7,8,9]

In contrast to PBL students need to identify the problem by themselves in SDL. SDL and self-regulated learning (SRL) share some common features; SRL is however a different concept where a learner has a control over their own learning. It is argued that PBL can foster SDL.[4]

The present study is a preliminary survey on the level of self-directed learning in medical students.

METHODS:

The present cross-sectional study was conducted among undergraduate medical students in their 7th semester, of Lumbini Medical College Teaching Hospital, Palpa, Nepal. A self-rating scale of self-directed learning, developed by Swapna Naskar Williamson was used in this study as a data collection tool.[10] The students were explained about the objectives of the study. The study questionnaire was then distributed to the students who consented through an informed consent to participate in the study. Confidentiality of the students was maintained as no individual identification was included in the

questionnaire. Ethical clearance for the study was obtained from The Institutional Research Committee of the institution (IRC-LMC 01-C/020).

The questionnaire contained 60 items categorized under five broad areas, each consisting of 12 items on self-directed learning as mentioned below:

- a. Awareness: evaluated the awareness of the learner about the factors to become self-directed learner.
- b. Learning strategies: explained the strategies the self-directed learner should adopt.
- c. Learning activities: explained the activities the self-learner should actively engage upon.
- d. Evaluation: evaluate learner’s self-learning process.
- e. Interpersonal skills: evaluate learner’s interpersonal skills necessary for self-directed learning.

The response to each item was assessed using a five-point Likert scale: 5 = always; 4 = often; 3 = sometimes; 2 = seldom; 1 = never. Based on the individual response, the minimum and maximum score will be within 60 and 300. The level of self-directed learning was categorized as high, moderate and low if the scoring range was between 221-300, 141-220 or 60-140 respectively as per the recommendation of the tool used. Any student scoring in the range between 221 to 300 was considered effective self-directed learner whereas the score between 60 and 140 designated students as poor self-directed learners who needed guidance from the teachers. All analyses were performed using Statistical Package for Social Sciences (SPSS™) software version 16.0.

RESULTS:

The questionnaire was initially distributed to 89 students of which 14 students either voluntarily opted out from the study or failed to respond to all the items, making a response rate of 84.27%.

The total number of students in the present study was 75 of which 42 were females (56%) and 33 males (44%). The mean age of the students was 22.03 ± 0.99 years. The mean score of the students in the five broad areas of SDL is presented in Table 1.

Table 1. Mean score in five broad areas of SDL (N=75).

Areas of SDL	Mean \pm Standard Deviation Score		
	Male (n=33)	Female (n=42)	Total
Awareness	3.96 \pm 0.41	3.98 \pm 0.44	3.97 \pm 0.42
Learning Strategy	4.19 \pm 0.40	4.12 \pm 0.37	4.15 \pm 0.38
Learning Activity	3.71 \pm 0.52	3.72 \pm 0.43	3.71 \pm 0.47
Evaluation	3.89 \pm 0.56	3.92 \pm 0.43	3.91 \pm 0.49
Interpersonal Skills	3.94 \pm 0.62	3.73 \pm 0.42	3.82 \pm 0.52

It was observed that none of the students in the present study had a score that was in the range between 60 to 140. The present study found majority of the students were active self-directed learners. However, 25.3% of the students were half-way in becoming self-directed learners. The mean total score of the students is categorized as per gender in Table 2.

Table 2. Level of SDL in the students and obtained mean score (N=75).

Gender	Level of self-directed learning (n,%)			Mean score \pm SD
	High	Moderate	Low	
Male	24 (32.0%)	9 (12.0%)	0	236.36 \pm 25.54
Female	32 (42.7%)	10 (13.3%)	0	233.40 \pm 20.32
Total	56 (74.7%)	19 (25.3%)	0	234.71 \pm 22.65

DISCUSSION:

The students showed positive learning strategy required for effective self-directed learning. Majority of the students had a higher score in the items pertained to group discussions, peer coaching, role-play, interactive teaching learning sessions, simulation in teaching-learning, learning from case studies, concept mapping etc. Unlike in the past, where books and didactic lectures were the only source of information; technological advancements in twenty first century have opened door for easy access to limitless resources. With emerging new trend of morbidity, medical doctors too need to adapt to face new challenges.[11] To overcome this, they need to foster the ability to utilize various resources to learn to solve problems.

The present study showed a positive attitude of the students towards independent learning. The process of triggering a solution to problems during PBL is one of the reasons of them being self-directed learners.[12] In Nepalese context, if PBL method is made effective, the students will be effective self-directed learners.

Medical education in Nepal is not without challenges. Lucrative business of medical education has attracted much attention of the businessmen as there are more medical colleges to get accredited in the pipeline.[13] Least has been thought on improving the quality of medical education by the stake holders of majority of medical colleges.[14]

The approaches to improve medical education in Nepal has been observed at Patan Academy of Health Sciences. Implying evidence-based practice in teaching and treating and facilitating peer-assisted learning for the students has been reported from this deemed institution.[9,15]

The existing medical curriculum in Nepal has made it mandatory for PBL to be conducted. The PBL approach is effective if implied correctly. The freshly passed graduates who join medical school as faculties without proper training in PBL system will do more harm than good to the students. The students are to be guided in such a way that they are always ready to explore their resources and learn. The ability to learn is an individual process and is different from others. It is prompted by motivation, enthusiasm and guidance. It has been postulated that setting a learning goal would make it easier for students and the faculties identify the learning need. [3] The other approach for effective PBL would be blending PBLs by adding e-learning elements.[16]

Lack of faculties is considered one of the setbacks in quality of medical education in Nepal.[2,17] In one study conducted on medical

education from rural Nepal, it was quoted “*In the authors’ experience, passive learning is often the default in Nepali medical education, with didactics, rote memorization, and fact-based, rather than student-centered learning.*”[18] Conceptualizing innovative methods for effective student centric learning is a need of time in Nepalese scenario. Regular training of the trainers initiated by Medical Education Department (MED) will make the trainers competent. Frequent evaluation of the trainee and the trainers will show the lacunae where more emphasis has to be intervened. Interactive sessions among the educators and the learners might bring out a noble way of effective teaching in a given scenario.

The present study is not without limitations. A single center study with a small sample size from a single batch of students are the shortcomings. Questionnaire used in the study was used in its original form. The authors felt that if the questionnaire was translated in native local language, modified and designed to fit in the Nepalese context, students would have had a clear understanding of what was being asked. Follow up studies in similar setting from other colleges will give a clear picture of effective SDL in Nepalese medical students that would pave way for effective development of medical curriculum.

CONCLUSION:

SDL skill is crucial not only for the students but also for the clinicians for complex learning process for continuing advancement of knowledge in medical profession. The findings of the present study showed majority of the students were effective self-directed learners, one third had a moderate SDL score. The effectiveness of SDL process can be accomplished if the students are encouraged and motivated during student-centered teaching-learning method like PBL sessions. Identifying the factors that sparks interest amongst the students to learn can be achieved by active feedback sessions during and after the PBL sessions. The slow learners can be identified and guided and should not be compared with quick learners.

Although classroom blackboards have been replaced with whiteboards and overhead projectors have been replaced by multimedia projectors, least has been observed in regards to medical education innovation in Nepal. It is a need of time to find innovative methods to develop quality medical

education and fulfill the dearth of literatures on medical education in Nepalese scenario.

Acknowledgement:

Professor Dr. Hemang Dixit, Chairperson, Medical Education Department, Kathmandu Medical College Teaching Hospital, Nepal.

Dr. Swapna Naskar Williamson, Associate Professor, College of Nursing, Midwifery and Healthcare, University of West London, UK.

Conflict of interest: Authors declare that no competing interest exists.

Funding: No funds were available for the study.

REFERENCES:

- Dixit H, Marahatta SB. Medical education and training in Nepal: SWOT analysis. Kathmandu Univ Med J (KUMJ).2008;6(23):412-420. PMID: 20071831 DOI: <https://doi.org/10.3126/kumj.v6i3.1725>
- Dixit H. Development of medical education in Nepal. Kathmandu Univ Med J (KUMJ).2009;7(25):8-10. PMID: 19483445 DOI:<https://doi.org/10.3126/kumj.v7i1.1757>
- Wolff M, Stojan J, Buckler S, Cranford J, Whitman L, Gruppen L, et al. Coaching to improve self-directed learning. Clin Teach.2019; [Epub ahead of print]. PMID: 31749307 DOI:<https://doi.org/10.1111/tct.13109>
- Loyens SM, Magda J, Rikers RMJ. Self-directed learning in problem-based learning and its relationships with self-regulated learning. Educ Psychol Rev.2008;20(4):411-427. DOI:<https://doi.org/10.1007/s10648-008-9082-7>
- Knowles MS. Self-directed Learning: A Guide for Learners and Teachers. Cambridge Adult Education; 1975. DOI: <https://doi.org/10.1177/105960117700200220>
- Barrows HS, Tamblyn RM. Problem-based learning: An approach to medical education. Springer Publishing Company; 1980. https://books.google.nl/books?hl=nl&lr=&id=9u-5DJuQq2UC&oi=fnd&pg=PR5&ots=k2SHpy6Inb&sig=cyk72G15_x3369-Z5qPPK80UZvc&redir_esc=y#v=onepage&q&f=false
- Mansur DI, Kayastha SR, Makaju R, Dongol M. Problem based learning in medical education. Kathmandu Univ Med J (KUMJ).2012;10(40):78-82. PMID: 23575059 DOI: <https://doi.org/10.3126/kumj.v10i4.11002>
- Pradhan B, Ranjit E, Ghimire M, Dixit H. History of problem based learning in Nepal and experiences at Kathmandu Medical College. Journal of Kathmandu Medical College. 2012;1(1):37-44. <https://doi.org/10.3126/jkmc.v1i1.7255>
- KC A, Karki S. Reflection on Peer Assisted Learning at PAHS. Journal of Patan Academy of Health Sciences. 2015;1(1):54-6. DOI: <https://doi.org/10.3126/jpahs.v1i1.13021>
- Williamson SN. Development of a self-rating scale of self-directed learning. Nurse Res.2007;14(2):66-83. PMID: 17315780 DOI: <https://doi.org/10.7748/nr2007.01.14.2.66.c6022>
- Ge X, Chua BL. The Role of Self-Directed Learning in PBL. In: The Wiley Handbook of Problem-Based Learning.(eds M. Moallem, W. Hung, N. Dabbagh), 2020;367-388. DOI: <https://doi.org/10.1002/9781119173243.ch16>
- Shokar GS, Shokar NK, Romero CM, Bulik RJ. Self-directed learning: looking at outcomes with medical students. Fam Med.2002;34(3):197-200. PMID: 11922535
- Magar A. Need of medical education system reform in Nepal. JNMA J Nepal Med Assoc.2013;52(191):I-II. PMID: 24907969
- Adhikari B, Mishra SR. Urgent need for reform in Nepal's medical education. Lancet.2016;388(10061):2739-2740. [https://doi.org/10.1016/S0140-6736\(16\)32423-0](https://doi.org/10.1016/S0140-6736(16)32423-0)
- Paudel S, Acharya BM, Pun KM, Paudel S, KC KB, Arjyal A. Evidence-based practice at Patan Academy of Health Sciences, Nepal: knowledge, attitude, behavior and barriers. Journal of Patan Academy of Health Sciences. 2018;5(1):82-89. DOI:<https://doi.org/10.3126/jpahs.v5i1.24049>
- Shimizu I, Nakazawa H, Sato Y, Wolfhagen IHAP, Könings KD. Does blended problem-based learning make Asian medical students active learners?: a prospective comparative study. BMC Med Educ. 2019;19(1):147. PMID: 31092243 DOI: <https://doi.org/10.1186/s12909-019-1575-1>
- Ansari M. Quality of medical education in Nepal. Educ Health (Abingdon).2012;25(2):130. DOI:<https://doi.org/10.4103/1357-6283.103462>
- Mehanni S, Wong L, Acharya B, Agrawal P, Aryal A, Basnet M, et al. Transition to active learning in rural Nepal: an adaptable and scalable curriculum development model. BMC Med Educ. 2019;19(1):61. PMID: 30786884 DOI: <https://doi.org/10.1186/s12909-019-1492-3>