

Short Communication

## Perspectives on Self-Directed Learning — the Importance of Attitudes and Skills

Parineetha P Bhat, B Rajashekar and Ullas Kamath

Department of Biochemistry, Melaka Manipal Medical College (Manipal Campus), International Centre for Health Sciences, Manipal-576104, Karnataka, India

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### Abstract

*The use of Self-Directed Learning (SDL) as a learning tool is increasing in today's educational environment, especially in medical schools. We wanted to examine whether all students are effective self directed learners and can make use of this learning tool to achieve learning objectives. Students (n = 125) of first-year medical training program were selected and for a period of 10 weeks they were exposed to two types of teaching programs i.e. SDL sessions and regular didactic lectures. Based on the total scores they obtained in the examination that followed they were divided into four groups. The results showed that the students of higher-scoring groups had scored significantly higher in SDL topics when compared with didactic lecture topics (75.28 ± 7.85 vs. 65.56 ± 3.93, and 67.29 ± 9.37 vs. 57.23 ± 4.51, respectively). In contrast the students in the lower-scoring groups did not score significantly higher in the SDL topics. This suggests that SDL may help "good" students to understand concepts and score well, but weak students may not benefit as they may be lacking the appropriate cognitive skills. SDL can be a very good method to make students to learn, but it should be adopted in a systemic manner keeping in mind heterogeneity of students with respect to skills.*

**Keywords:** self-directed Learning, didactic lectures, learning skills

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### Introduction

Self-Directed Learning (SDL) is a purposive mental process, usually accompanied and supported by behavioural activities involved in identification and searching for information. In this system learners consciously accept the responsibility for making decisions about goals and effort, and hence become their own learning change agents (Long, 2005). There is always a comparison between self directed-learning and teacher-directed didactic learning (Bradley *et al*, 2005, White, 2006) and the introduction of SDL into undergraduate curricula has not always been successful (Levett-Jones, 2005). Educators and trainers who are attracted to potential self-directed learning applications often have questions about the skills needed to be an effective self-directed learner. The subject matter; the social, cultural and educational setting; past experiences; self concept and relevant study skills all influence the extent to which self-directedness is possible (Greveson & Spencer, 2005). An effective self-directed learner is one who has the personality traits and skills such as goal-setting, information-processing, executive, cognitive processing, and decision-making skills (Long, 2005). Most educators know very well that in any given class there will be a heterogeneous mix of students who differ with respect to the skills needed to be effective learners. The method of learning varies from student to student and this is reflected in their performances in examinations. In this context the question arises whether all students stand to gain by SDL. We wanted to know how much

SDLs contribute to scores during formative assessment and whether such a contribution is uniform in a heterogeneous group of undergraduate students.

## Methods

The undergraduate medical program at Melaka Manipal Medical College (MMMM), India, is a twinning program wherein the preclinical and para clinical subjects are taught in the first 4 semesters at Manipal. Biochemistry is taught in the first 2 semesters integrating with other subjects namely anatomy and physiology. The medium of instruction is English. The biochemistry curriculum is divided into four blocks of 10 weeks duration each:

Block 1: Basic concepts, Blood and Respiratory System

Block 2: Cardiovascular System, GIT, Nutrition and Hepatobiliary System

Block 3: Endocrine, Reproduction, Muscle, Bones, Kidney and Electrolytes

Block 4: Central Nervous System, Special senses and Molecular biology

SDLs were introduced as a part of the teaching program for all students in their 3rd block. They were given a brief overview of what exactly is meant by SDL and then given a week in which to gather information regarding a particular topic. At the end of this week they had a two-hour SDL discussion session. Topics were randomly selected and the students were made aware of the learning objectives and the list of books to be referred to beforehand. This gave them ample time to prepare for the SDL discussions. The discussion of a SDL topic was done once weekly by dividing the entire class, irrespective of their scores, into four batches. Each batch had a teacher as facilitator. The facilitator encouraged free self-expression and interactive group discussion among the students but limited the discussion to the learning objectives. The main role of the facilitator was to clear up any misconceptions. Didactic lectures (DDL) were also given to the students for the remaining learning block objectives.

At the end of the block, the students wrote a 2-hour essay examination for 60 marks. The essay consisted of case studies, critical thinking questions and short-answers questions. SDL topics contributed 22 marks (36.66% of the total marks) with the rest coming from DDL. After evaluation of the answer scripts, the students were divided into four groups depending on the points they obtained:

Group I: Distinction (more than 75% marks)

Group II: First class (65%–75% marks)

Group III: Successful (50%–65% marks)

Group IV: Unsuccessful (less than 50% marks)

We calculated the percentage of marks obtained by the students in SDL and DDL topics. In each group we compared the contribution of the two types of learning methodologies to the total scores by doing a Student's *t*-test using the GPIS package.

## Results

In the high-scoring groups (groups I and II), the marks obtained in SDL topics were significantly higher than the marks obtained in DDL topics (Table 1). However, in the lower-scoring groups, there was not much difference in the points scored in either SDL or didactic lectures. Feedback was taken from the students on SDL. (Table2)

**Table 1** Mean scores obtained in didactic lecture topics (DDL) and mean points obtained in SDL topics

Group	DDL marks (%) (mean ± SD)	SDL marks (%) (mean ± SD)
Group I: Distinction (n=33)	65.56±3.93	75.28±7.85*
Group II: First class (n=33)	57.23±4.51	67.29±9.37*
Group III: Successful (n=50)	49.49±4.87	50.80±11.60
Group IV: Unsuccessful (n=09)	36.81±7.35	35.35±6.64

**Table 2** Students' opinions about self-directed learning (SDL). Values are means ± SD (n=123). A scale of 1–5, ranging from 'strongly agree' to 'strongly disagree' was used (1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly agree)

Opinion	Score
Helps to integrate my knowledge in biochemistry	3.31±1.02*
Gives me an opportunity to self study	3.51±1.00
Breaks the monotony of class room lecture	3.09±0.99
Increases my oral presentation skills	3.25±0.94
Increases my problem solving abilities	3.23±1.00
Makes me more responsible in studies	3.33±1.00

## Discussion

These results suggest that SDL may be an effective learning tool for some students but not all. Students belonging to higher-scoring groups performed better on SDL topics; this was not so in case of students belonging to lower-scoring groups. This suggests that SDL may help good students to understand concepts and score highly, but weak students may suffer as they may lack the requisite cognitive skills such as information gathering, information-processing skills, correlation, a good working memory and deep processing skills. Even though SDL can be a very good method to make students to learn, it needs to be adopted in a systemic manner keeping in mind the abilities of the weaker students. Teachers should make sure that students are aware of skills required to become effective self-directed learners. Study environments that nurture and develop personal and cognitive skills are important in the development of self-directed learners.

## Communicating author

Mr. B. Rajashekar, Department of Biochemistry, Melaka Manipal Medical College (Manipal Campus), International Centre for Health Sciences, Manipal-576104 Karnataka, India. Tel: 91-820-2922519 e-Mail: raorajashekar@rediffmail.com

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