



Does Self Directed Learning Readiness Make Better Prediction To Academic Performance Of Medical Students Using Pbl Approach

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ABSTRACT

Self-directed learning readiness (SDLR) is considered as one of predictor for the success in accomplishing of the learning process in medical education for which student learning will result in a satisfactory achievement. This study analyze the relationship of SDLR to the medical student's This study involved 101 respondents who received a questionnaire on self-learning readiness. Data were analyzed using independent t test. There is a significant correlation between self-directed learning readiness (SDLR) and academic achievement with mean differences of $3,80 \pm 2,68$ and t value of 1,418 (p: 0,159). In overall, there is a relationship between self-directed learning readiness towards academic achievement in the third year medical students using PBL approach.

Keywords: self-directed learning readiness, academic performance.

INTRODUCTION

The newest trend of medical education development change the way of teaching and learning from Teacher-Centered Learning (TCL) to Student-Centered Learning (SCL). This paradigm is the basis successful for all of the Faculty of Medicine to implement SCL. In the traditionally teaching learning approach to education that is TCL, lecturers are very influential in determining student learning. Lecturers are also very essential in the control of

the learning process of students. This will make the students become inactive. Students tend to rely on what can only be given by the teachers. This situation causes the students uncreative in finding what they want to study in more depth.

Some high schools have adopted the principle of self-directed learning. Many of other high schools have not applied the principle of self-directed learning. Self-learning system in the PBL method is reflected in the tutorials where students be given a problem to trigger discussion about what materials they would like to learn more. Students are expected to search their own learning, to determine their own activities and to evaluate in the form of a report on what they have acquired. Complaints of first year students said that they are less understood in implementing PBL method which especially in high school where they have not been accustomed to an active and independent learning.

Similar statement delivered by Yoshioka et al., (2005) which states that the first-year students tend to have a lot of problems in the process of adaptation of learning in PBL's learning environment which especially for students from high school who do not normally apply independent learning. Consistent understanding as presented by Knowles, (1975) stated that the first-year students without have the readiness for



self-learning will experience anxiety, frustration, and failure to achieve the expected performance. Furthermore, in the theory of Thorndike revealed that students will face learning environment that demands students to be self-reliance and active therefore the learning process will eventually be success. Hence the readiness of students enrolled in the PBL approach is absolutely required to maximize the learning process independently. Student readiness in implementing independent learning will greatly affect the learning process of students in the tutorial in which problems in it serve to provoke creativity and curiosity of students to learn more material related.

The ratio of students accepted to applicant students is quite high which constitute 1: 4 which are expected to attend lessons using PBL systems with a high readiness. However; in reality; there are still complaints from new students who have difficulty in following the lessons and methods of PBL. In addition, tutors are also delivering complaints that some students are still somewhat awkward and less active in the tutorial. This is also an evidence that the final test scores are less satisfactory. This problem is prompted by the author to see how the readiness of students in following this lesson using PBL method and how do they motivate students to follow lessons with PBL method. Researchers assume that a good readiness of students to learn independently during the course will result in a satisfactory achievement. Similarly, the high motivation to learn will result in higher academic achievement as well.

Therefore, understanding the Self-directed learning readiness (SDLR) as internal factor can certainly be used as a predictor for the success of the learning process in which student achievement is satisfactory. In addition, this factor can be influenced to be improved further.

The formulation of the problem in this research is that the relationship of self-directed learning readiness (SDLR) and motivation towards students's achievement in the first year of medical student. The aims of this study are knowing the relationship between SDLR and the academic achievement of students in the first year, understanding the relationship between motivation and learning achievement of students in the first year, investigating the relationship of SDLR and learning motivation towards learning achievement of students in the first year. This research is expected to benefit students in developing SDL skills obtaining a better learning process and a satisfactory achievement. For the institutions from which the research results can be obtained information about SDLR picture and first year students's learning motivation and its role in supporting the achievement of students.

Artist and Harris, (2007) expressed the factors that influence SDL including an understanding of the subject matter in advance (prior knowledge), independent learning skills, motivation to learn independently.

Meanwhile, according to Rantenstrauch, (2001) cited by Bohne, Faltin, Wagner, (2002), revealed that in order to be able to perform self-directed learning, a student must have a competency of self-observation, self-reflection, self-judgment, making their own objective, doing reactivation of existing knowledge, managing learning autonomy (e.g.: time management), building motivation and concentration in learning autonomy to determine their own learning strategies and problem solving strategies, understanding when to seek a help from a friend or tutor.

Patterson et al., (2002) stated that the competence to perform the SDL in nursing students's learning need an assessment, self and peer evaluation, reflection, information



management, critical thinking and critical appraisal. Knowles, (1975); Slevin and Lavery; (1991); Mifflin et al., (2000) stated that the faculty and learning environment affect the self-directed learning.

Research prove that the role of SDLR on academic achievement as mentioned by Litzinger et al. (2005) at the Univeristy Of Engineering students which SDLR is limited that only constitute for 5%. Chung's research (2001) stated that there was a positive association between SDLR and student achievement at the University Southern part of Taiwan ($r = 0.21$, $p < 0.05$). Research conducted by Corbeil's (2003) on students at the University Southern United States have also found a positive relationship between SDLR and learning achievement ($r = 0.51$; $R^2 = 0.55$, $p < 0.01$).

METHODS

This study was a cross-sectional design with the dependent variable of learning achievement using values taken before the revision. Data of independent variables including motivation and SDLR taken by distributing questionnaires. Quantitative research data were analyzed using descriptive statistics and inferential statistics. Descriptive statistics were used to investigate average value, standard deviation (SD), minimum and maximum values of the variables of the study. Inferential statistics are used to determine the relationship of SDLR to learning achievement. Relationship within the two variables was assessed using independent t test (Johnson & Christensen, 2008; Creswell, 1994).

SDLR measured using a questionnaire developed by Fisher et al., (2001). Academic achievement data are taken from the value of subject Traumatology in the third year of academic year 2016.

The subjects were selected using purposive technical sampling of the third year students at the Faculty of Medicine, Universitas Muhammadiyah Surakarta in the academic year 2016. All subjects who meet the inclusion criteria of the third-year students must follow the subject of Traumatology, present at the time of the study and willing to be respondents. Exclusion criteria were the third year students who were not present at the time of the study and were not collecting or filling questionnaires incomplete.

The data that collected in this study including primary data and secondary data. Primary data was taken by distributing questionnaires to students. The questionnaire used scales including self-directed learning readiness scale to express the variable of self-directed learning readiness developed by Fisher et al., (2001). Secondary data were drawn from the value of third year medical students (the subject of Traumatology) at the academic administration of the Faculty of Medicine University of Muhammadiyah Surakarta.

Data analysis techniques used in this research is the analysis of quantitative data analysis consisted of descriptive statistics. Then, it will be followed by parametric test of independent t test. Descriptive statistical analysis aimed to determine the average value, standard deviation (SD), minimum and maximum values of the variables of the study (Johnson & Christensen, 2008).

RESULTS AND DISCUSSION

Research investigation of the relationship between SDLR and motivation on learning achievement by distributing questionnaires. Questionnaire on self-directed learning readiness and motivation given to first year students at the Faculty of Medicine of the academic year 2016. Furthermore, the data after

analyzed using SPSS Ver.23 obtained as follows:

Table 1. Distribution of SDLR scores and academic achievement (n = 101)

Variable	Mean	Median	Mode	Minimum	Maximum
SDLR	140,79	141	144	96	179
Academic Achievement	56,89	55,99	55,86	37,71	80,95

Data that meeting the inclusion and exclusion criteria were as many as 101. The table above shows that the average student achievement in the third level is equal to 56,89. SDLR average score is obtained by 140,79. The minimum value the achievement of students on the subject of Traumatology is 37,71 while the maximum value academic achievement is 80,95. Minimum score of SDLR is 96 while the maximum score

of SDLR is 179. The average SDLR score of third level medical student is considered in high level 140,79 which could predict to higher academic achievement. It is a fact that the third year students have a high self-learning readiness as a force in the further study in medical school that has implemented PBL.

The data then analyzed using independent t test, the analyzes were drawn below :

Table 2. The differences of academic achievement on SDLR score and academic achievement (n = 101)

Variable	N	Mean	Mean differences	t cal	t table	p value
SDLR SCORE -ACADEMIC ≥ 55	59	142,37	3,80 \pm 2,68	1,418	1,671	0,159
-ACADEMIC < 55	42	138,57				

From table 2 above, it is known that there is mean differences of SDLR on academic achievement which constitute for 3,80 \pm 2,68. Meanwhile, the t calculated is 1,418 which is less than t table of 1,671 that indicating that there is significant differences of SDLR based on academic achievement. This means that there is a relationship between SDLR in influencing learning achievement.

This correlation indicates that the higher the level of self-learning readiness, the higher the student achievement will be. The study is in line with Marcou, A. & Philippou, G. (2005); Kan'an, A., & Osman K. (2015); Hsu Y.C., Shive M., (2005). The Effect Of Self Directed Learning Readiness On Achievement Comparing Face To Face And Two Way

Distance Learning Instruction. Int'l J Of Instructional Media Vol.32(2). Another research conducted by Chung (2001) was also found a positive association between SDLR learning achievement in students in the University Southernpar of Taiwan ($r = 0.21$, $p < 0.05$). Similar research has also been done by Corbeil's (2003) on student Univeritas the southern United States have also found a positive relationship between SDLR learning achievement ($r = 0.51$; $R^2 = 0.55$, $p < 0.01$). Zulharman (2008) examined the role of learning achievement SDLR freshman at FK UNRI also found a positive relationship between SDLR and achievement of students in the first year.

CONCLUSION



Based on the result, it is found that there is a significant correlation between self-directed learning readiness (SDLR) and academic achievement and SDLR can be used for predicting academic achievement of medical students besides other factors that can influence academic achievement.

REFERENCES

- Artist A, Harris E. . (2007) Self-directed learning and sales force performance: an integrated framework. *J Personal Selling Sales Manage*; 27 (1) :9-24.
- Bohne A, Faltin N, Wagner B (2002), Self-directed Learning and Tutorial Assistance in a Remote Laboratory, *Learning Lab Lower Saxony (L3S) in Interactive Computer Aided Learning Conference*, September 25-27, Austria. Available from: <http://www-Ita.disco.unimib.it/quac/docs/unifi.forms.2003.pdf>
- Chung, Y.C. (2001). The effect of self-directed learning readiness in the asynchronous learning distances. Unpublished master's thesis. The National Kaohsiung Normal University, Kaohsiung, Taiwan.
- Corbel, J. R. (2003). Online technologies self-efficacy, self-directed learning readiness, and locus of control of learners in a graduate-level web-based distance education PROGRAM. Unpublished doctoral dissertation. The University of Houston, Houston, TX.
- Creswell, (1994), *Research Design: Qualitative and Quantitative Approaches*, Sage Publications, London.
- Evans A. and Maiyo J.K.(2015). Study Of The Relationship Between Study Habits And Academic Achievement Of Students: A Case Of Spicer Higher Secondary School, India *International Journal of Educational Administration and Policy Studies*. Vol. 7(7), pp. 134-141, September, 2015 DOI: 10.5897/IJEAPS2015.0404 Article Number: A18769055459 ISSN 2141-6656. <http://www.academicjournals.org/IJEAPS>
- Fisher M, King J., Tague, G. (2001) Developmen of a self-directed learning readiness scale for nursing education. *Nurse Education Today* [Internet], 21516-25.
- Harsono. (2008). *Introduction to Problem Based Learning*. Medika Faculty. Yogyakarta.
- Harden RM (2005), *A Practical Guide for Medical Teachers*, Elsevier Churchill Livingstone, London.
- Johnson & Christensen, (2008) *Educational Research: Quantitative, Qualitative and Mixed Approaches*, Sage Publications, United States of America.
- Kan'an, A., & Osman K. (2015). The Relationship between Self-Directed Learning Skills and Science Achievement among Qatari Students. *Creative Education*, 6, 790-797. <http://dx.doi.org/10.4236/ce.2015.68082>
- Knowles M. *Self-directed learning. (1975.) A Guide for Learners and Teachers*. Cambridge, NY: Cambridge Adult Learning Pearson Education;
- Litzinger, TA., Wise, JC., Lee, SH. (2005) Self-directed Learning Readiness Among Undergraduate Engineering Students. *Journal of Engineering Education*. (The Internet], Available from; http://findarticles.com/p/articles/mi_q-3886/is_200504/ai_n13636319/pg_10
- Marcou, A. & Philippou, G. (2005) Motivational beliefs, self-regulated learning and mathematical problem solving. In Chick, H. L. & Vincent, J.L. (Eds.). *Proceedings of the 29th Conference of the International Group for the Psychology of*



Mathematics Education (Internet). Vol.3, pp 297-304. Melbourne: PME. Available from:

<http://www.emis.de/proceedings/PME29/PME29RRPapers/PME29Vol3MarcouPhilippou.pdf>

Mifflin BM, Campbell CB, Price DA. . (2000) A conceptual framework to guide the development of self-directed, Lifelong Learning in problembased medical curricula. *Med Educ*; 34 (4) :299-306.

Patterson C, Crooks D, Lunyk-Child O. (2002) A new perspective on competencies for self-directed learning. *J Nurs Educ.*; 41 (1): 25-31.

Slevin OD, MC Lavery. (1991) Self-directed learning and student supervision. *Nurs Educ Today.*; 11 (5) :368-77.

Sunanto, 2006, The relationship between learning motivation, attitudes toward teachers, Learning Styles and Achievement Learn Indonesian Seventh Grade Students of SMP Negeri 10 Bandar Lampung Academic Year 2004/2005.

<http://digilib.unila.ac.id/go.php?id=laptunilapp-gdl-s2-2006-sunanto-516>

Suhoyo, Y. (2008) Efficacy Comparison between Computer-based Learning (CBL) and the Lecture as Teaching Basic Principles of Bioethics at the Faculty of Medicine of New Students. Master of Science Thesis Medical Education Faculty of Medicine, University of Gadjah Mada. Yogyakarta.

Yoshioka T, Suganuma T, pliers AC, Matsushita S, Manno S, Kozu T. (2005) Facilitation of problem finding among first-year medical school students undergoing problem-based learning. *Teach Learn med. (Internet)*, spring; 17 (2), pp.136-41. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15833723>

Zulharman (2008), The Role of Self Directed Learning Readiness in First Year Student Learning Achievement Faculty of Medicine, University of Riau. Thesis, University of Gadjah Mada.