

The Relationship of Self-Directed Learning Readiness and Learning Motivation Towards Learning Achievement of First Year Medical Students

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Abstract

Understanding Self-directed learning readiness (SDLR) as internal factors as well as high motivation to learn can certainly be used as a predictor for the success of the learning process, in which it will result in satisfactory achievement of student learning. This study analyzed the relationship of SDLR towards the student's achievement, the relationship of learning motivation towards the student's achievement, the relationships of SDLR and learning motivation towards the achievement of students in the first year medical students. This study involved 52 respondents who received a questionnaire on self-learning readiness and motivation questionnaires. The data were analyzed by using Spearman test. There was a significant correlation between self-directed learning readiness (SDLR) and learning achievement with the strength of the correlation was 0.874 (p: 0,000), between learning motivation and learning achievement with the strength of the correlation of 0.848 (p: 0,000), between self-directed learning readiness (SDLR) and motivation to learn towards academic achievement with strength of the correlation for 0.870 (p: 0,000). Overall, there was a relationship between self-directed learning readiness and learning motivation towards learning achievement in the first year medical students.

Keywords: self-directed learning readiness, learning motivation and learning achievement.

1. Introduction

1.1 Background Issues

The latest paradigm of medical education in Indonesia that change the way teaching and learning is the shift from Teacher-centered learning (TCL) to Student-centered learning (SCL). This paradigm is the basis for all Faculties of Medicine in Indonesia to implement SCL. Some of the steps have been taken by the Faculty of Medicine in Indonesia by changing the way of learning activities and learning to adjust to the SCL system. In the conventional approach to education, that is TCL, lecturers are very influential in determining the student's ability in 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 to become uncreative in finding what they want to study.

The curriculum implemented by the Faculty of Medicine, Universitas Muhammadiyah Surakarta starting in 2008-2009 is a new curriculum approach to Problem Based Learning (PBL). As mentioned on the reference submitted by Harsono (2008) that the basic characteristics of Problem Based Learning are SCL and SDL. The application of teaching and learning approaches in SCL and SDL is that student must have enough skills to conduct independent learning.

Nowadays, some high schools have adopted the principle of self-directed learning. However, there are also many high schools that have not applied the principles of self-directed learning. Self-learning system requires students to determine what they want to learn more. Students have the responsibility to determine their own learning resources and where they want to use either it is from textbooks, websites, or directly from the experts. Students have the freedom to determine what learning activities they want to do. Students are expected to conduct the evaluation of their learning with or without a tutor.

Self-learning system in the PBL method is reflected in the tutorials where students are given a problem to trigger discussion about what learning 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. However, some complaints of first year students stated that they have less understanding of implementing PBL method, which are especially implemented in high school, because they are not accustomed to active and independent learning.

Similar statement was delivered by Yoshioka et al., (2005) which stated that the first-year students tend to have a lot of problems in the process of adaptation of learning in PBL's learning environment, especially for students who came from high school that did not normally apply independent learning. Consistent understanding as presented by Knowles (1975) stated that the first-year students without having the readiness for self-learning will experience anxiety, frustration, and failure to achieve the expected performance. Furthermore, Thorndike's theory revealed that students will face learning environment that demanded students to be self-reliance and active; therefore, the learning process will eventually be success. Hence, the readiness of students in enrolling in the PBL approach is absolutely required to maximize the learning process independently. Students' 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 related material.

The ratio of students accepted to applied students is quite high which constitute 1: 4 is 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 also serves 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 they motivate students to follow the 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 students' high motivation to learn will result in higher academic achievement as well.

Therefore, understanding Self-directed learning readiness (SDLR) as internal factor and high motivation to learn can certainly be used as a predictor for the success of the learning process which will result in satisfactory students' achievement. In addition, both factors can be influenced to be improved further.

1.2 Formulation of Problems

Based on the above problems, the formulation of the problem in this research was the relationship of self-directed learning readiness (SDLR) and motivation towards students' achievement in the first year at Faculty of Medicine, Universitas Muhammadiyah Surakarta.

1.3 Research Objectives

The purpose of this study was to:

1. Know the relationship between SDLR and the students' academic achievement on the first year students.
2. Understand the relationship between students' motivation and learning achievement on the first year students.
3. Investigate the relationship of SDLR and learning motivation towards students' learning achievement on the first year students.

1.4 Benefits of Research

1. Theoretically, this study will add the knowledge in the field of science education about SDLR, concerning on the role of learning motivation towards the students' learning achievement on the first year students in a particular PBL learning environment.
2. Practically, this research was expected to benefit:
 - a) Students; that can be used as a measure to assess their SDLR and motivation to learn. Knowing the value of their SDLR, the students can assess themselves about the readiness of students in independent study and to develop SDL skills in obtaining a better learning process and obtaining a satisfactory achievement.
 - b) Institutions from which the research results can obtain the information about SDLR overall picture and first year students' learning motivation and its role in supporting the achievement of students.

2. Literature Review

2.1 Learning Achievement

1. Terms of learning achievement

Honey and Mumford (1986) revealed that learning is a process to know the information that they previously did not know, and to perform a skill that was previously unknown. Anwar (1996) and Winkel (1996) defined learning achievement as the result of a learning process as a whole that can be achieved within a certain time period, and can be expressed in test scores. Meanwhile, Martaniah (1973) stated that academic achievement is a result of learning activities that illustrate the extent to which students can master the material that has been taught. In conclusion, learning achievement is a result of learning that a person can achieved for a certain period.

2. Factors influencing learning achievement

Winkel (1987) as cited by Mun'im (2009) and Suryabrata, (2007) divided the factors that could affect learning achievement; they were:

- a. Students' internal factors consisted of:
 1. Intellectually psychological factors, which included the level of intelligence, motivation, attitudes, feelings, interests, and conditions due to socio-cultural and economical circumstances.
 2. Physical factors related to the students' physical condition.
- b. Students' external factors consisted of:
 1. Factors that regulate the learning process in the schools; the curriculum includes teaching, school discipline, teacher effectiveness, learning and student grouping.

2. Social factors in the school including social systems, social status, and the interaction of teachers and students.
3. Situational factors, which include the state economic policy, time, place and the climate.
4. Talent.
5. Interest.
6. Emotion.
7. Personality.
8. Psychiatric disorders or personality disorders.

Dalyono (2007) divided the factors that affected academic achievement into two parts including internal factors and external factors. Internal factors consisted of health, intelligence, talent, enthusiasm, motivation, and learning. The external factors consisted of family, school, community and environment.

2.2 Self Directed Learning Readiness (SDLR)

1. Self Directed Learning (SDL)

a. Definition of Self Directed Learning (SDL)

The definition of SDL delivered by Knowles (1975) and as cited by Abu Daud, Daing Zaidah, Azizun Asmuni (1998), they defined SDL as a person getting the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying the source, learning from someone and learning materials, choosing and implementing appropriate learning strategies and evaluating learning outcomes.

According to Abu Daud, Daing Zaidah, Azizun Asmuni (1998), the focus of the Knowles's concept was on pedagogic procedures. He saw an adult learner should have a more independent need and be highly motivated.

Meanwhile, according to Fisher et al. (2001), SDL is a learning method that is used to enhance adult education at the school. SDL can be defined as a learner's responsibility to determine their own way of learning. This means that learners have the freedom to determine the importance of learning.

Kaufman (2003) as cited by Harsono (2008) expressed that the sense of SDL or independent learning as a method that organize teaching and learning in which learning tasks are controlled entirely by students. SDL can also be interpreted as an effort to have the ability to be responsible for their learning, personal autonomy, and individual choice.

Meanwhile, according to Candy (1991) operationally independent learning is the ability of a person in terms of methodical and disciplined, logical and analytical, collaborative and interdependent, inquisitive nature and an open, creative, motivated, persistent and responsible, confident and able to learn, and reflective and self-conscious.

According to Long (2005), he suggested that SDL is a mental process that is supported by behavioral activity to identify and search for information. In this system, by using SDL, students consciously accept the responsibility for making decisions about the goals and efforts that will change the way they do, and their own learning. An effective independent learner is someone who has the personality traits and skills such as goal setting, information processing, executive, cognitive processing, and decision-making skills.

b. Self-Directed scope Learning (SDL)

According to Harrison (1978) as cited from Song L and Hill J (2007), SDL is a process in organizing some of the instructions, focusing on the learner's autonomy in the instructional process. In contrast to the concept delivered by Kasworm Guglielmino

(1988), Candy (1991) as cited from Song L and Hill J (2007), they viewed SDL as a personal attribute of the purposes of education which described as a person who has built morality, emotional intelligence and autonomy.

c. Stages in Self Directed Learning (SDL)

The conceptual model of the SDL as provided by Merriam and Caffarella (1999) and cited from Mei-Hui Huang (2008), is divided into three categories namely: linear, interactive and instructional models. The examples of linear models such as those presented by Knowles (1975) that divided the six stages in the SDL, which are:

- a. Climate setting,
- b. Diagnosing learning needs,
- c. Formulate learning objectives,
- d. Identify and learn from the source material,
- e. Selecting and implementing appropriate learning strategies,
- f. Evaluate learning outcomes.

Brockett and Hiemstra (1991) stated that self-directed learning consists of two dimensions, namely SDL as an instructional process in which students have a responsibility in the learning process and SDL as a personal characteristic in which students have a responsibility in the learning process that is based on self-motivation.

According to Brookfield (1985), learning is described as a change in the internal awareness of the central nervous system in line with the learning activity. As it has already been mentioned that understanding the process of self-study will involve instructional process in which the students have the primary role in planning, implementing and evaluating experiences. The terms and understanding of SDL delivered by Brookfield (1985) who viewed SDL as a change in internal learning and education as external conditions that facilitate internal change.

In further developments, Oddi (1985) as cited by Richard (2005) made the instrument to identify self-directed continuing learner which is referred as the Oddi Continuing Learning Inventory (OCLI) including 24 Likert scale items that contain personal character of student. Oddi distinguished conduction process, perspective and personal perspective related to SDL. He mentioned that the perspective of the process is the most predominant aspect than personality.

Finally, Candy (1991) conveyed concepts related to self-directedness as a personal quality or attribute of personal autonomy, as an independent part that affects the learning process outside the formal setting (self-taught), as a way of organizing instruction (as a control for students). Thus, she looked that there were differences in the learning process in the school setting and outside the school setting.

Self-planned learning as mentioned by Hiemstra and Brockett (1994) is a voluntary learning activity, and often find themselves (the students) alone. It could be said that SDL is an activity in which personal responsibility for planning, implementing, and evaluating the progress are made by the student.

SDL according Brocket and Hiemstra (1991) is the process by which the learner has full responsibility in planning, implementing and evaluating the learning process, while the lecturer or the school plays a role in facilitating this process.

Learning self-direction revealed by Brocket and Hiemstra (1991) is in charge of student motivation in learning. In addition, self-direction includes two good

characteristics including the external characteristics of instructional processes and internal characteristics of the learners himself.

2. Self Directed Learning Readiness (SDLR)

a. Understanding self-directed learning readiness

The definition of self-directed learning readiness given by Wiley (1983) (as cited from Fisher et al. (2001) is the level of attitude, abilities and personal characteristics necessary for independent learning.

Self directed learning as mentioned by Ramsey & Couch (1994) as cited from Siaw (1999) is a better value than the adult learner because of the increased creativity, develop existing knowledge, develop the use of brainstorming, and adapt to a rapidly changing environment.

Readiness can also be interpreted as a combination of ability and motivation, ranging from the inadequacy and motivated to complete a specific task through the capable and motivated to complete a specific task (Oddi, 1986; Grow, 1991, cited from Richards, 2005).

According to Niegemann (1995) as cited by Bohne, Faltin, Wagner (2002) they stated that self-directed learning is aimed to maximize the freedom of students to the dimensions of learning objectives (related to the subject or idea), media and learning resources, a place to learn, a time to learn, pace and duration of study, social settings (e.g., group learning or self-learning), and learning strategies (e.g., depth study and sequence of elements to be studied),

There are six key principals in an independent study as mentioned by Harden (2005), the first is to determine what student needs to learn by themselves, students set their own where he will learn, what he will learn, how he will learn and when he will learn. Secondly, students have the responsibility to determine context learning, diagnose what they need to learn, identify the required learning resources, the time when they should study and when they want to have a break. Thirdly, student can be involved in planning their own learning. Fourthly, each student may have a desire for learning and the nature of each individual according to what lecturer wants and student needs to learn. Fifthly, student's learning should be supported by providing adequate learning resources and study guide that has been prepared. The sixth, faculty role changes from a lecturer or a conductor of information to become a manager of the learning process. According to Brockett and Hiemstra (1991), personal responsibility is a central concept of PRO model together with a personal responsibility to control what has thought and done.

b. Factors Affecting Self-Directed Learning Readiness

According to Garrison (1997), there are three models of the self-monitoring inter-relative to SDL (self control), self management and motivation (desire to learn). Self monitoring according to an intrinsic factor requires self-regulation, meta-cognitive and reflective. Meanwhile, self-management as extrinsic factors requires good learning strategies. Self management includes management in determining the learning goals and in determining the management of learning resources that can support learning goals. They require an environment that supports the learning goals. Motivated individuals will require intrinsic and extrinsic factors.

There are several things that underlie Fisher in making scale of Self-Directed Learning Readiness (SDLRS). Firstly, the first presence of self control that determines destination contains of 15 items: evaluate one's performance, the ability to recognize one's limitations and self-regulatory. Secondly, self management in which includes time

management, information management and determine one's learning plan of which consisting 13 items overall. Thirdly, the individual motivation in doing self-directed learning and consisting of 12 items.

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

Meanwhile, according to Niegemann (1995), Rantenstrauch (2001) as 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' learning needs and assessment, self and peer evaluation, reflection, information management, critical thinking and critical appraisal. Knowles (1975), Slevin and Lavery (1991), and Mifflin et al. (2000) stated that the faculty and learning environment affect the self-directed learning.

2.3 Motivation to learn

1. Understanding motivation

Driscoll (1994) stated that motivation is related to cognitive function task run, the consequences of task completion and ability to complete the task. Meanwhile, according to Gagne et al. (1992), Peyton (1998) as cited from Suhoyo (2008), motivation is the force that causes student involvement in the learning process, focusing on the learning objectives and learning tasks.

2. Various kinds of motivation to learn

According to Amin & Eng (2006), motivation in learning is divided into two parts, namely internal motivation and external motivation. Examples of internal motivation are the need to understand and apply the understandable desire, interest in the matter, to really understand and interpret knowledge, curiosity and feel a responsibility to understand. Examples of external motivation are the desire to be able to complete a unit of study, fear of failure, get the value and compliment the teachers.

On the other hand, Marcou and Philippou (2005) linked students' learning motivation with three factors including (a) self-efficacy, (b) task value, and (c) goal orientation. Self-efficacy is an assessment of the ability and competence in achieving success in a task. Task value is defined by Pintrich as cited by Marcou & Phippou (2005) as student perceptions of learning materials with respect to the interest, importance and usefulness of the material. Goal orientation is related to students' perceptions and reason to follow a process of learning. Harden et al. (2005) stated that each student will have a different motivation to learn when following the process of learning and have different learning styles.

4. The Role of Self Directed Learning Readiness and motivation on learning achievement.

Researches to prove the role of SDLR on academic achievement as mentioned by Litzinger et al. (2005) at the University of Engineering, students which have 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 had also found a positive relationship between SDLR and learning achievement ($r = 0.51$; $R^2 = 0.55$, $p < 0.01$).

According to Winkel (1987) as cited by Ahmad Mun'im (2009) and Suryabrata (2007), motivation is divided into the internal factors that affect achievement including intellectual psychological factors, which include the level of intelligence, motivation, attitudes, feelings, interests, conditions due socio-cultural or economic circumstances.

Learner self-direction as mentioned by Brocket and Hiemstra (1991) is in charge of student motivation in learning. Meanwhile, self-direction includes two characteristics comprising of the external characteristics of instructional processes and internal characteristics of the learner himself.

Readiness can also be interpreted as a combination of ability and motivation, ranging from the inadequacy and motivated to complete a specific task through the capable and motivated to complete a specific task (Oddi, 1986; Grow, 1991, cited from Richards, 2005).

2.4 Research Hypothesis

The hypothesis of this study included:

1. Self Directed Learning Readiness had a relation with high academic achievement on the first-year medical students.
2. Motivation to learn was associated with high academic achievement on the first-year medical students.
3. Self Directed Learning Readiness and motivation to learn had a relation with high academic achievement in the first-year medical students.

3. Methods

3.1 Research Design

This study was a cross-sectional design with the dependent variable of learning achievement using values taken before the revision. The data of independent variables included motivation and SDLR taken by distributing questionnaires. The quantitative research data were analyzed by using descriptive statistics and inferential statistics. Descriptive statistics were used to investigate average value, standard deviation (SD), and minimum and maximum values of the variables of the study. Inferential statistics were used to determine the relationship of SDLR to learning achievement and relationship of motivation to academic achievement. Normality data testing was conducted by using Chi Square (Sugiyono, 2011). The data were considered to be normally distributed when the Chi count $<$ Chi tables. The relationship within the two variables was assessed by using Spearman Rank test (Sugiyono, 2011; Johnson & Christensen, 2008; Creswell, 1994).

Motivation to learn was measured by using the Motivated Strategies for Learning Questionnaire (MSLQ) developed by the National Center for Research to Improve Postsecondary Teaching and Learning of University of Michigan. SDLR was measured by using a questionnaire developed by Fisher et al. (2001). Academic achievement data were taken from the value of first block Learning Skill and Information Technology in the first semester of 2012 academic year.

3.2 Research Subjects

The subjects were all the first year students of the 2012 Academic Year at the Faculty of Medicine, Universitas Muhammadiyah Surakarta. All subjects who met the inclusion criteria

of the first-year students must follow the first block, be present at the time of the study and willing to be respondents. The exclusion criteria were the first-year students who were not present at the time of the study and did not submit or fill or complete the questionnaires.

3.3 Research Variables

The variables in this study were:

- a) The independent variables were self-directed or independent learning readiness and motivation to learn.
- b) Dependent variable was academic achievement.

3.4 Operational Definition of Variables

- a. Self-directed learning readiness is the level of preparedness of students for independent study. Self directed learning readiness was expressed by using self-directed learning readiness scale developed by Fisher et al. (2001). The scores obtained by the subjects showed SDLR level. The scores were then divided into 5 levels. Level 1: 1-36; Level 2: 37-72; Level 3: 73-108; Level 4: 109-144; level 5: 145-180.
- b. Motivation is what drives the students to make the process of learning and it was measured by the Motivated Strategies for Learning Questionnaire (MSLQ) developed by the National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan. Motivation score was divided into 5 levels. Level 1: the score of 1-25.2; 2:25.3-50.4 level; Level 3: 50.5-75.6; Level 4: 75.7-100.8; rate of 5 :100.9-126.
- c. Learning achievement is the result of a learning process as a whole that can be achieved within a specified period, and is expressed in test scores (Anwar, 1996; Winkel 1996).

3.5 Data Collection Method

The data that were collected in this study included primary data and secondary data. The primary data were taken by distributing questionnaires to the 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) and the Questionnaire Motivated Strategies for Learning Questionnaire (MSLQ) developed by the National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan. The questionnaire consisted of 31 questions by using a scale of 1 to 7. Scale 1 meant 'it does not suit me' and the scale of 7 meant 'it is very appropriate to me.' The scale between 1 and 7 showed the level in between of the two scales. The questionnaire consisted of 6 sub-scales which were:

1. Intrinsic goal orientation
2. Extrinsic goal orientation
3. Task value (students' perceptions of the learning materials related to interest, interest rate, and perceived usefulness of the material for students)
4. Control of learning beliefs (the belief that student learning outcomes were the achievements of their own controlling than by external factors such as faculty)
5. Self-efficacy for learning and performance (related to the two expectations; hopes to succeed and self-confidence)
6. Task anxiety (level of alertness and anxiety of the students while facing such material)

Sub-scale could be taken to follow the needs of researchers (Pintrich et al., [1991] as cited by Suhoyo, [2008]). This study only used subscales 1, 3 and 5 and the translation version already had been tested for validity and reliability by Suhoyo (2008). The secondary data were

drawn from the value of first block (learning skills and information technology block) at the academic administration of the Faculty of Medicine, UMS.

3.6 Data Analysis

Data analysis techniques used in this research was the analysis of quantitative data analysis consisted of descriptive statistics followed by testing data normality by using t test. If the data were distributed normally then it would be followed by parametric test of Pearson Product Moment. When the data obtained were not normally distributed then it was followed by non-parametric test by using Spearman Rank (Sugiyono, 2011). The descriptive statistical analysis was aimed to determine the average value, standard deviation (SD), and the minimum and maximum values of the variables of the study.

4. Results And Discussion

4.1 Research

Research investigation of the relationship between SDLR and motivation on learning achievement was conducted by distributing questionnaires. Questionnaire on self-directed learning readiness and motivation was given to the first year students of the 2012 Academic Year at the Faculty of Medicine. Furthermore, the data obtained were described as follows:

Table 1. Distribution of learning achievement, SDLR, and motivation scores(n = 52)

Variable	Mean	Minimum	Maximum
Learning Achievement	64.81	45.96	75.93
SDLR	141.67	107.00	189.00
Learning Motivation	97.98	61.00	126.00

The data that showed the inclusion and exclusion criteria were as many as 52. The table above showed that the average student achievement in the first block was equal to 64.81. SDLR average score was obtained by 141.67. The average score for students' learning motivation was 97.98. The minimum value of the achievement of students on block 1 was 45.96 while the maximum value academic achievement was 75.93. The minimum score of SDLR was 107.00, while the maximum score of SDLR was 189.00.

The distribution SDLR data scores were grouped into 5 levels of SDLR, the percentage of students with levels of SDLR was obtained in the medium, high, and very high as stated in the table below.

Table 4. SDLR frequency distribution (n = 52). Variable Frequency (n), Percentage (%)

Variable	Frequency (n)	Percentage (%)
SDLR level very low	0	0
SDLR level low	0	0
SDLR level moderate	4	7.7
SDLR level high	30	57.7
SDLR level very high	18	34.6

From table 4 above, it was known that the level of self-learning readiness (SDLR) was mostly at the level of having a high self-learning readiness with as many as 30 people (57.7%), followed by extremely high self-learning readiness levels with as many as 18 people (34.6%) and moderate self-learning readiness with as many as 4 people (7.7%). In this study, it was found that there were no low or very low SDLR levels. It was also stating a fact that the first-year students had a high self-learning readiness as a force for their further study in medical school that had implemented PBL.

Table 5. The frequency of learning motivation distribution (n = 52), Variable Frequency (n) Percentage (%)

Variable	Frequency (n)	Percentage (%)
Motivation to learn level very low	0	0
Motivation to learn level low	0	0
Motivation to learn level moderate	5	9.6
Motivation to learn level high	29	55.8
Motivation to learn level very high	18	34.6

From table 5 above, it could be seen that the first-year students on average had had the motivation to learn on moderate to very high. The percentage of most students had high motivation to learn as many as 29 people (55.8%) followed by very high students' motivation which was as many as 18 people (34.6%) and students who are moderately motivated to learn as many as 5 people (9.6%).

Table 6. Distribution of student achievement scores (n = 52)

Variable	Mean	Median	Mode	Minimum	Maximum
Learning Achievement	64.81	64.90	68.43	45.96	75.93

From table 6 above it clearly could be seen that the achievement of students had an average value of 64.8127 with a minimum value of 45.96 and a highest value of 75.93.

4.2 Discussion

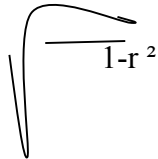
The data were then analyzed on Spearman Rank correlation test as follows:

Tables. 7. Correlations between learning motivation and learning achievement (Spearman Rank test with n = 52)

Variable	Correlation coefficient (r)	P value	t count	t table	Error level
Motivation to learn and Learning achievement	0.82	0.00	10.28	2.70	0.01

The results that had been processed with SPSS version 12.0 for Windows with non-parametric Spearman correlation test showed that the value of r Rank for correlation between achievement and motivation was 0,824 and p <0.01. Due to the value n = 52 was greater than 30, according to Sugiyono (2011), the formula t count was used, which was shown in the below figure.

$$t = r \sqrt{n-2}$$



From the above formula, it was obtained the t value = 10.284. Then according to Sugiyono (2011), t value was compared to the t table with 1% confidence level, which found that t = 10.284 > t table = 2.704. This meant that Ho was rejected and Ha was accepted. Hence, we could conclude that there was a relationship between learning motivation in influencing academic achievement. This suggested that the higher a person's motivation to learn the higher the academic achievement would be obtained.

From these data, it indicated that the freshman academic year 2011-2012 had various motivation levels, from moderate to very high. In average, they had high motivation level, because the data collection was conducted when they first entered medical school; therefore, it was understandable that they were highly motivation. However, these results did not necessarily indicate similar value of the motivation in their later years of medical school, which was not as high as when they first enrolled in the school. As stated Harden et al. (2005), Kusurkar R. A, Ten Cate Th. J., Vos C. M. P., (2012), Evans A. and Maiyo J.K. (2015), they stated that students would have different motivations depending upon the subject matter.

Such research had also been done by Sunanto (2006) which connected the learning motivation, attitudes toward teachers, learning styles and achievement of learning Indonesian. The results of this study also supported a research conducted by Winkel in 1987 that was cited by Ahmad Mun'im (2009). Suryabrata (2007) divided the internal factors that affected students' achievement such as intellectual psychological factors, which included the level of intelligence, motivation learning, attitudes feelings, field of interests, and conditions due to the socio cultural or economic. Therefore, motivation factor is an important factor in determining students' achievement. It was also similar to the point delivered by Marcou and Philippou (2005) that linked students' learning motivation with three things: (a) self-efficacy, (b) task value, and (c) goal orientation. With the aim of studying to get good grades makes motivation as crucial influence on students' academic achievement.

Table 8. Correlation between SDLR and learning achievement (Spearman Rank test with n = 52)

Variable	Correlation coefficient ®	P value	t count	t table	Error level
SDLR and learning achievement	0.829	0.00	10.4818	2.704	0,01

Furthermore, to determine the correlation between academic achievement and SDLR, it was found that the non-parametric Spearman correlation test Rank showed the value of $r = 0.829$ and $p < 0.01$. When inserted into the formula t count, it was obtained that the value of $t = 10.48176997$. Due to $t = 10.48176997 > t \text{ table} = 2.704$, this meant that H_0 was rejected and H_a was accepted. Therefore, we could conclude that there was a relationship between SDLR in influencing the students' learning achievement.

This correlation indicated that the higher the level of self-learning readiness then the higher the student achievement. The study was in line with Chung's research (2001) that found a positive association between SDLR learning achievement in students in the University Southernpar of Taiwan ($r = 0.21$, $p < 0.05$). Similar research had also been done by Corbeil (2003) on students of the Southern University in the United States who had 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.

5. Conclusion

5.1 Conclusion

From the above results it could be concluded as follows:

1. There was a significant correlation between self-directed learning readiness (SDLR) and learning achievement.
2. There was a significant correlation between learning motivation and learning achievement.
3. There was a significant correlation between self-directed learning readiness (SDLR) and motivation to learn towards academic achievement.

5.2 Suggestion

1. Guidance for students to motivate learning should be conducted periodically to ensure that students remain motivated; therefore, it is expected that high academic achievement remains good.
2. Counseling for students regarding academic and more should be done periodically to enable counselors in an effort to get better achievement.
3. Similar studies should be done to further explore the factors that influence self-directed learning and student motivation.

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