

Difference of Self Directed Learning Readiness Between Introvert and Extrovert Personality Type Among Medical Students

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ABSTRACT

Background: The paradigm of medical education has been changed from Teacher Centered Learning (TCL) to Student Centered Learning (SCL) that implemented through Problem-Based Learning (PBL) method. Medical students are expected to have the ability to learn independently or known as self-directed learning (SDL). This tendency then measured by a scale known as the Self Directed Learning Readiness Scale (SDLRS). Personality is one of the influential factors in this case. Extrovert personality type is considered more suitable to the SDL method. This study aimed to determine differences in self-directed learning readiness between introvert and extrovert personality type among medical students.

Subject and Methods: This was an observational analytic study with cross sectional design. The subjects were medical students at SebelasMaret University in 2010, 2011, 2012 and 2013. This used random sampling method. The subjects were categorized into ready and not ready for SDL. Type of personality was divided into introvert, ambivert and extrovert. Motivation was selected as a confounding variable and divided into high and low motivation. Data were analyzed using multivariate regression analysis.

Results: There were 69 students included in this study. We found that 25(36.2%) students were introvert, 16 (23.2%) students were extrovert and 28 (40.6%) students were ambivert. Based on SDLR scores, 23 (33.3%) students were ready for SDL and 46 (66.7%) students were not. Logistic regression analysis showed that extrovert students had chance to be ready for SDL 0.70 fold lower than introvert students (OR = 0.70; 95% CI= 0.18 to 2.74; p= 0.604). Otherwise, ambivert students 0.83 fold lower than introvert students (OR = 0.83; 95%CI= 0.26 to 2.64; p = 0.745) to be ready for SDL.

Conclusion: There was no statistically difference of SDLR between personality types.

Keywords: self-directed learning readiness, personality type

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BACKGROUND

Medical education has undergone a paradigm shift from Teacher Centered Learning (TCL) to Student Centered Learning (SCL) is applied through the method of Problem Based Learning (PBL). In contrast to the TCL, SCL focuses on the independence of the student in the learning process.

Students are required to play an active role in planning, monitoring and evaluating the learning process. Related to

this, a student is expected to have the ability to learn independently or called Self Directed Learning (SDL) (Secondira, 2009). This is in line with the rapid development of medical science and the principles of lifelong learning which should be applied by a doctor (Pamungkasari and Probandari, 2012).

Self-learning ability is a continuous process. This process relies on students as learners and the learning environment. A

student is expected to have the independence and motivation to get the full benefit of their learning experience. Some students are able to achieve these expectations, but the other students and tend to have difficulty finding a daunting challenge in the learning process (Mala-Maung et al, 2007). Basically everyone will have the readiness to learn independently in a variety of different levels. Readiness is then measured by a scale of measurement known as the Self Directed Learning Readiness Scale (SDLRS) (Guglielmino, 2013).

Self-learning ability can be affected by many factors, both external and internal. Externally, the SDL can be influenced by the teaching methods and curriculum applied. While internally, one of the factors that influence the personality. Personality traits have a positive correlation with SDL (Chen et al., 2006).

Based on the nature of the soul, the personality of Jung's theory divides human personality into two types, namely extrovert and introvert (Suryabrata, 2007). Extroverted individuals are someone who is affected by the outside world. This personality type is open, agile in the association, jovial, friendly, easy to relate to people, to see the reality and necessity, immune to criticism, spontaneous emotional expression, not so feel failure, and does not hold a lot of analysis and self-criticism. While introverts personal interests of individual leads to the mind and experience it yourself. Introverts personality tend to be aloof and was able to resolve its own problems. Personal introvert has properties opposite to the extrovert (Sunaryo, 2004).

Personality has a role in determining educational outcomes. The expected outcome of medical education is a lifelong learner independent (Furnham et al, 2003; Findley and Bulik, 2011). SDL method is considered as a method that supports these

goals (Gyawali et al., 2011). Students of medical education has a score SDLR different (Findley and Bulik, 2011). Therefore, researcher interested in comparing students of the faculty of medicine according to the type of personality to the self-learning readiness is reflected in the score SDLR.

In addition, the achievement of constructive learning process, independent, collaborative and contextual in accordance with the principles of PBL, the student factor is the most influential factor so important to know the personality characteristics associated with student learning readiness independently (Secondira, 2009).

SUBJECTS AND METHOD

1. Study design

This was an observational analytic study with cross sectional design. The study was conducted at Faculty of Medicine, SebelasMaret University, Surakarta in January-March, 2014.

2. Population and Sample

The population were students of the Faculty of Medicine in 2010, 2011, 2012, and 2013. Samples were taken by simple random sampling technique. The sample size was determined using a formula sample size for multivariate analysis with 15-20 independent subjects. The required sample size $2 \times (15-20 \text{ samples}) = 30-40$ samples. There were 80 samples in this study.

3. Study variables

The independent variable was the personality type. The dependent variable was the Self Directed Learning Readiness (SDLR), as well as confounding variables in this study were the motivation.

a. Personality Type

Personality type is the classification of personality characteristics become extrovert and introvert according to Jung's theory of personality based on personality develop-

ment (results of social interaction, activities and interests that shape the nature of a person). Extrovert interests are likely to lead to the surrounding environment, while the introvert personal interests of individual leads to the mind and experience it yourself. Personal ambivert have personality traits mixture of both.

b. Self Directed Learning Readiness (SDLR)

Self-Directed Learning Readiness is a student's readiness to learn independently.

c. Motivation

Forced that drives a person to learn and complete the academic process.

4. Data Analysis

To test the difference SDLR extrovert introvert personality type with the medico used logistic regression analysis. Relationships variable personality type and SDLR examined by Chi Square.

RESULTS

1. Characteristics of Samples

The study was conducted in January-March 2014 at the Faculty of Medicine, SebelasMaret University, Surakarta. Samples were 80 students of Medical Education class of 2010, 2011, 2012, and 2013. A total of 11 students do not fill out the questionnaire in full so that the remaining 69 samples. Characteristics of the study sample are shown in Table 1.

Table 1. Characteristic of sample

Characteristics	n	%
Personality Type		
Introvert	25	36.2%
Ambivert	28	40.6%
Extrovert	16	23.2%
Self-Directed Learning Readiness (SDLR)		
Prepared	23	33.3%
Unprepared	46	66.7%
Study Motivation		
High	39	56.5%
Low	30	43.5%

Students with introverted personality types in this study as many as 25 people (36.2%), personality type ambivert 28 people (40.6%), while the extrovert personality type as many as 16 people (23.2%). The level of readiness (SDLR) are categorized into two groups of students were considered ready as many as 23 people (33.3%) and a group of students who are not ready for as 46 people (66.7%) (Table 1.). Students are grouped into student with high and low motivation. The division is based on the motivation level of the mean score of AMS. The mean value of AMS score in this study is at 99.9. AMS samples with a score of less

than 99.9 are grouped in the category of low motivation while samples with a score of AMS over 99.9 grouped in the category of high motivation. A total of 39 (56.5%) students are grouped in the category of high motivation and 30 (43.5%) of students in the category of low motivation (Table 1).

2. Data analysis

Personality type first converted into two variables with dummy variables in order to do the logistic regression analysis. Provisions for variable amounts established as K-1 (K is the number of categories in the initial variable, in this case the personality types

are divided into three categories, so we get two dummy variables.

Three categories of personality types are introvert, extrovert, ambivert and converted into two variables, D₁ (Extrovert) and D₂ (ambivert) (Table 2).

Table 2. Dummy variabel

Code	Personality Type	D ₁	D ₂
3	Introvert	0	0
2	Ambivert	0	1
1	Extrovert	1	0

The variables obtained by comparing extroverted personality and ambivert on introverted personality as the basis.

Students introverted personality who declared ready by 9 votes (36.00%) and

were declared not ready as 16 people (64.00%) (Table 3). Students with personality ambivert declared ready by 9 votes (32.14%) and were declared not ready as 19 people (67.86%) (Table 3).

Students with extroverted personality who ready by 5 votes (31.25%) and were declared not ready as 11 people (68.75%) (Table 3).

Students with ambiverted personality have the possibility to prepare 0.91 times lower than students with introverted personality (Table 3). Students with extrovert personality type have possibility of 0.89 times lower than students with introverted personality (Table 3).

Table 3. Result bivariate analysis type and DSLR

Personality Type	Degree of Readiness (SDLR)				OR
	Not ready		Ready		
	n	%	n	%	
Introvert	16	64.00	9	36.00	
Ambivert	19	67.86	9	32.14	0.91
Ekstrovert	11	68.75	5	31.25	0.89

Table 4. Logistic regression analysis of the difference DSLR on extrovert and ambivert with controlling influence of motivation

Free Variables	Model I (Crude Analysis)				Model II (Adjusted Analysis)			
	OR	95% CI		p	OR	95% CI		p
		Lower Limit	Upper Limit			Lower Limit	Upper Limit	
Ekstrovert	0.89	0.27	2.93	0.840	0.70	0.18	2.74	0.604
Ambivert	0.91	0.33	2.54	0.862	0.83	0.26	2.64	0.745
Motivation					2.37	0.81	6.93	0.115
N observation	= 69							
-2 log likelihood	= 85.117							
NagelkerkeRSquare	= 5.4 %							

Currently lifelong learning skills become a necessity in the field of medicine and health sciences. The learning model with SDL has become quite important learning methods related thereto. Various changes and developments in medical science require students as future doctors to be able to implement SDL (Gyawali et al.,

2011). While the readiness of students to SDL strategy can be seen from the high level of SDR. SDR considered as a factor that may affect the student's success in implementing PBL (Gould, 2013).

Not all individuals can adapt to changing learning environment demands the ability to implement SDL (Klotz, 2011). Evi-

dence suggests that not every student skilled, willing and able to make decisions about whether and to what extent to be taught (O'Shea, 2003). Variables that are considered most influential in this regard are psychological variables (Abd-El-Fattah, 2010). The extent the ability and willingness to implement SDL can be explained psychologically by the personality (Kreber, 2006).

Extroverted personality is regarded as a strong predictor of a student tendency to engage SDL (Kreber, 2006). This is not consistent with the results in this study. Students with extrovert personality would have a lower level of readiness than the introverted students (Table 4). Extrovert prefers discussions, more active and tends interaction with others (Li, 2003) but this does not indicate the level of readiness of SDL higher than private introvert. Personal introverts tend to like the course (Li, 2003) it has a score SDLR higher.

Low levels of SDLR the students can relate to anxiety. Anxiety is described as having a strong relationship to the level SDLR (Hirson, 2011). While high levels of SDLR can be associated with personality, but it can be influenced by the situation (Candy, 1991). Students tend to be faced with the situation of PBL in learning will have a higher SDLR (Baker, 2012). In this study, all samples have been involved in learning with PBL system. This may explain the presence of a significant difference in the score SDLR students. In addition, the implementation of appropriate strategies in the learning system can also increase personal responsibility and increased levels SDLR on the student (Candy, 1991).

SDLR also affected the environment in which learning occurs. Personality characteristics may fluctuate depending on the circumstances of the learning environment (Candy, 1991). Environment learning

that encompasses various factors such as the design of (resource and environmental structures) and the support that can be feedback from the instructor and peer learning (Song and Hill, 2007). The circumstances of the learning environment to support, then it will also affect the increased score SDLR. Conditions one appropriate of which related to the learners who already have a basic knowledge, basic skills, experience, familiar with the existing system and often face the same learning conditions (Baker, 2012).

In the application of SDL, a student as a learner needs to have certain personality traits to be able to direct himself (Brockert and Hiemstra, 1991). Personal attributes that play a role in determining the level of SDL is the self-awareness of the need to learn, is personal responsibility for learning (Bouncouvalas, 2009). Students are also expected to have a curiosity, a willingness to learn and a tendency to be able to take their own inisiatif (Guglielmino, 1977). Thus, SDL is a product of personal characteristics (Hirson, 2011).

According to Fisher et al., SDLR total score greater than 150 indicates readiness for SDL. In this study, 23 students (33.3%) to the category of ready (Table 4). This shows that the students in this study were not ready (66.7%) more than the students who are ready (Table 4). This means that only 33.3% of students are ready for SDL and can set lifelong learning throughout their careers (Greveson and Spencer, 2005). Readiness of students need to be improved because students continue to be motivated, be able to use the skills to evaluate the performance, able to identify, select and evaluate to achieve goals even when education is no longer available (Mifflin et al, 2000).

In this study there is the possibility of biased information/recall bias. This was a

cross sectional study using a questionnaire. The accuracy of data depends on the honesty and memory of respondents that would affect the data and information obtained.

Cross-sectional study also has weaknesses in determining causation because the risks and effects data retrieval is done at the same time. Study by this method is the conclusion of study has correlation with the risk factors most effect is weak compared with the case control and cohort. We can conclude that there were no differences that are statistically significant in SDLR according to personality type.

Extroverted type personality are less likely to be prepared than introverted personality types, but it was not statistically significant (OR=0.70; p=0.604). Likewise personality ambivert are less likely to be ready, but this relationship was not statistically significant (OR=0.83; p=0.745). This conclusion has taken into account the influence of confounding factors of motivation.

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