Learning Approaches in medical students: The Role Classroom Goal Structure and Intelligence Beliefs

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Abstract: Learning approaches that are one of the key concepts of students' learning in higher education . The aim of this study was to identify factors related to learning approaches in students of Sabzevar University of Medical Sciences. The method of the present study is descriptive-correlational. The statistical population of this study included all medical students in Sabzevar; Cluster sampling and then Simple Random Sampling was used for sampling, the sample size according to Cochran's formula was 300 people. The questionnaires that were considered to collect information from the sample group were: Babaei Intelligence Beliefs Questionnaire (1998), Learning Approaches Questionnaire Miller et al. (1999), and classroom goal structure questionnaire by Migli et al. (1997). Pearson correlation coefficient and multivariate regression analysis using SPSS-22 software were used for statistical analysis of data. The results showed that the goal and class structure and Intelligence beliefs are related to Learning Approaches in Sabzevar medical students and among the components, the best predictor of Learning Approaches is the master class goal structure. If teachers shift the structure of their classrooms to a mastery structure, they will create more adaptable Learning Approaches in students.

Keywords: classroom goal structure, Intelligence beliefs, Learning Approaches.

I. INTRODUCTION:

From a phenomenological point of view, learning is considered to have two dimensions: Content and process. Content is what is learned and the process is how to learn, that is, the act of learning that is considered as students' Learning Approaches (Diehm RA, Lupton M, 2012). Learning Approaches, which are key concepts of student learning in higher education (Flood B, Wilson RMS, 2008), mental activities are the ways learner's use when studying and coping with learning and study assignments so that they can use them effectively in receiving, organizing, or remembering information (Rosander P, Bäckström M, 2012). Marton & Saljo in 1976, using a phenomenological research approach, named two different learning approaches as deep and superficial learning approaches (quoted by Baeten M et al., 2010). A student who takes a superficial approach: Considers the university as a means to achieve other results such as obtaining a suitable job and limits the goal to the requirements of the curriculum and evaluation (Parsa and Sakti, 2007), Is simply interested in learning the important facts and thoughts that are necessary to complete the needs of the course and pass the course (Chamorro-Premuzic T, Furnham A, 2008; von Stumm S and Fornham, 2012), Therefore, it relies on parrot-like learning, passive memorization, and memorization of educational content for the regular reproduction and reproduction of these materials (Ballantine JA et al., 2008; Ellis RA et al., 2008). In contrast, a student who takes an in-depth learning approach is interested in studying and doing homework and enjoys exploring and exploring the subject matter. (Struyven K et al., 2006), and seeks the underlying goals and meaningful and real understanding of what has been read (Yılmaz MB, Orhan F, 2010). One of the variables that seem to be related to Learning Approaches is Intelligence beliefs, says Dweck, C.S (2011). It is our beliefs that organize the world around us, and in pursuit of the underlying purposes, our experiences give meaning and generally form the behavioral and semantic system of each individual. One of these beliefs is Intelligence beliefs. Duke considers Intelligence beliefs to include intrinsic beliefs and incremental beliefs. People who believe in innate intelligence believe that their personal traits, such as intelligence, are immutable and measurable. Learners who have an increasing belief in intelligence focus mainly on improving their competencies and acquiring new knowledge, and strive to overcome past failures. In contrast, people who believe in increased intelligence believe that intelligence is not a fixed and unchangeable essence, but can be increased through effort and experience. Learners with an innate belief in intelligence focus on achieving good performance and make the least effort to achieve

their goals and overcome problems. And they give up easily in the face of problems (Dweck, C.S. & Molden, D.C., 2005; Duek, 2011). Another variable that seems to be related to Learning Approaches is the classroom goal structure, for example, Prosser, Trigol (1999, quoted in Cano, F, 2005) have shown that a positive perception of the classroom educational context is associated with a deep learning approach and a perception of poor educational quality is associated with parrot-like learning and a superficial approach. Findings showed that a positive perception of the learning environment encourages learners to directly and moderately positive learning outcomes through a learning approach. (Lizzio, A., Wilson, K., & Simons, R, 2002). The classroom goal structure has been conceptualized as situation-dependent development goals. By development, goals are meant the characteristics and conditions that are intentionally imposed on learners in their work environment. And focuses them on the task or themselves, as a result, it creates a kind of conflict of interest with individuals (Graham, Glan, 1991: Quoted from Hejazi et al., 2011).

Class goal structures are primarily focused on two types of goals; mastery goal structure, which emphasizes mastery, personal improvement, and understanding in the classroom; and functional goal structure, which emphasizes competition and ability in the classroom.

The results of some studies indicate a positive relationship between incremental belief about intelligence and mastery goals (Blackwell, L. S, 1988; Stipec, D., & Gralinski, G. H 1996; Spinath, B., & Pelster, J. 2001; Blackwell, L. S et al., 2007; Hejazi et al., 2008) and a positive relationship between innate belief about intelligence and approach-performance (Duke Volgett, 1988; Stipack and Grainski, 1996; Vermetten, Y.J et al., 2001) and avoidance-performance (Spinnatch and Plaster, 2001; Blackwell et al., 2007; Hejazi et al., 2008) goals. Therefore, the present researchers, according to the existing vacuum and studies, did not find research on the relationship between classroom goal structure and Intelligence beliefs with Learning Approaches; they decided to design a study to investigate the relationship between classroom goal structure and Intelligence beliefs with Learning Approaches in Sabzevar medical students.

II. RESEARCH METHODS

According to the subject and purpose of the research, the present research method is descriptive-correlational. The statistical population of this study included all medical students in Sabzevar, which included 1381 people. The sampling method was multi-stage Thus, from the various entrances of 2018 and 2016 and from the associate, bachelor, master, and doctoral degrees, 2 levels and from the formed classes, a total of 10 classes were selected. The sample size according to Cochran's formula was 300 people. Research tools included: Babaei Intelligence Beliefs Questionnaire (1998), Miller et al.'s Learning Approaches Questionnaire (1999), and the Perceptual Structure of the Classroom Questionnaire by Migli et al. (1988).

Intelligence beliefs questionnaire: Babaei Intelligence Beliefs Questionnaire (1998) was used to assess Intelligence beliefs this questionnaire has 14 items. Scoring method Based on the 5-point Likert scale from (completely opposite 5 to completely agree 1) items 1, 4, 6, and 14, which emphasize the inherent nature of intelligence, are scored in reverse. To get the total score of the questionnaire, add all the items of the questionnaire. This score will range from 14 to 70, Obviously, the higher the score, the more belief there is in increasing intelligence, and vice versa. Babaei (1998) while evaluating the apparent and content validity by expert professors, declared its reliability coefficient with Cronbach's alpha of 0.72. In another study, Achak (2003) stated that its reliability coefficient with Cronbach's alpha was 0.86. Sarmadi et al. (2009) while measuring apparent and content validity, declared its reliability coefficient with Cronbach's alpha of 0.71 and in this study the reliability of the questionnaire was confirmed by obtaining Cronbach's alpha of 0.81.

Learning Approaches Questionnaire Miller et al. (1999)

This questionnaire has 32 questions and its purpose is to evaluate Learning Approaches (Learning goals, performance goals, instrumental/future goals, perception of ability, internal and external evaluation). The scoring of this questionnaire is based on the Likert scale (strongly disagree 1; disagree 2; have no opinion 3; agree 4; strongly agree 5). If the scores of the questionnaire are between 32 and 64, the rate of Learning Approaches in this community is weak. If the scores of the questionnaire are between 64 and 96, the amount of Learning Approaches is moderate. If the scores are above 96, the Learning Approaches rate is very good, the internal consistency coefficient (Cronbach's alpha) for subscales of learning objectives is 0.84,

Performance goals 0.90, future instrumental goals 0.91, perception of ability 0.90, internal valuation 0.84, and external evaluation is 0.89 (Miller et al. 1999), the internal consistency coefficient (Cronbach's alpha) was calculated for the modified subscales after factor analysis and satisfying the item-subscale correlations. All subscales have a high validity from 0.82 to 0.93, which is similar to the scoring reported in Miller et al.'s 1999 study (Sedaghat et al., 2010). In this study, the reliability of the questionnaire was confirmed by obtaining Cronbach's alpha of 0.83.

Structure of Perceived Objectives by Migli (1988): The Perceived Classroom Structure Questionnaire was designed by Migli et al. (1988). This questionnaire has 14 items and 3 factors. The components of the questionnaire are mastery goal structure (1-6), performance-oriented goal structure (7-9), performance oriented goal structure (10-14).

Score between 14 and 23: The perceived structure of the classroom is undesirable.

Score between 24 and 47: The perceived structure of the classroom is relatively good.

Score above 47: The perceived structure of the classroom is at a desirable level.

Validity or validity deals with the question of how much a measuring instrument measures what we think (Sarmad et al., 2011). In the research (Ashuri, 2013) the validity of the questionnaire has been confirmed by professors and experts in this field. The reliability of a tool is the degree to which it is stable in measuring whatever it measures. That is, to what extent the measuring tool gives the same results in the same conditions (Sarmad et al., 2013). In Ashuri study (2013), the reliability of the questionnaire was obtained from Cronbach's alpha method above 0.70 and in this study, the reliability of the questionnaire was confirmed by obtaining Cronbach's alpha of 0.79. In this research, in order to analyze the data obtained by the above tools, descriptive statistics indicators and methods have been used to obtain the frequency, percentage, mean, standard deviation, and standard error of the data; then inferential statistics were used to obtain Pearson correlation coefficient and multivariate regression using SPSS-22 software.

III.   RESULTS

Descriptive analysis

As mentioned in Chapter 3, the present study was performed on a sample of 300 medical students in Sabzevar. In the table below, descriptive indicators including mean and standard deviation related to research variables were given.

Table 1: Descriptive information of the sample in the studied variables

Sample size	The standard deviation	Average	Variables
300	2/62	55/54	classroom goal structure
300	4/94	113/31	Intelligence beliefs
300	2/92	57/77	Learning Approaches

Kolmogorov-Smirnov test was used to check the normality of data distribution, when checking the normality of the data; we test the null hypothesis that the data distribution is normal at the 5% error level. Therefore, if the larger test statistic equals 0.05, then there is no reason to reject the null hypothesis that the data is normal.

Table 2: Results of Kolmogorov-Smirnov test for normal distribution of scores

Variable	Number	Kalmogorov-Smirnov Z test	The significance level
classroom goal structure	300	1/49	0/067
Intelligence beliefs	300	1/36	0/054
Learning Approaches	300	1/42	0/061

According to the information in Table 2, it can be seen that the significance level of all three questionnaires regarding the variables of classroom goal structure, Intelligence beliefs, and Learning Approaches is greater than 0.05. Therefore, the distribution of the scores of the variables is normal.

Table 3: Relationship between predictor and criterion variables

Estimation of criterion deviation	Modified coefficient of determination	The coefficient of determination	The regression coefficient	Variable
2/98	0/46	0/463	0/68	classroom goal structure
1/72	0/389	0/401	0/633	Intelligence beliefs

Table 4: Regression analysis of variance

significance	sum squares	grade of freedom	mean squares	f	Model	Variable
0/001	114/702 1568/906 1683/608	1 299 300	114/702 4/162	27/562	Residual regression coefficient of the total number	classroom goal structure
0/001	72/342 2313/080 2385/422	1 299 300	72/342 6/705	10/79	Residual regression coefficient of the total number	Intelligence beliefs

Table 5: Multivariate regression model for classroom goal structure and Intelligence beliefs components

Component	Non-standard coefficients		Standard coefficients	value of T	Significance level
	β	standard error	β		
Constant	2/647	0/907	-	2/919	0/001
Fixed / Intrinsic Theory of Intelligence	0/047	0/024	0/127	2/000	0/001
Incremental theory of intelligence	0/134	0/036	0/192	3/760	0/001
Skilled goal structure	0/095	0/022	0/224	4/392	0/001
Performance goal oriented structure	0/050	0/015	0/177	3/247	0/001
Objective structure / performance avoidance	0/091	0/021	0/221	4/219	0/001

According to the table above, the level of significance of the components of classroom goal structure and Intelligence beliefs is significant with Learning Approaches. Therefore, it shows the relationship between classroom goal structure and Intelligence beliefs with Learning Approaches. On the other hand, due to the amount of β obtained, most of which is related to the structure of the master target, and shows the greatest impact of this component on Learning Approaches.

The correlation between classroom goal structure and Learning Approaches is 0.54 (at the significance level of 0.001); as a result, classroom goal structure is related to Learning Approaches in Sabzevar medical students.

The correlation between Intelligence beliefs and Learning Approaches in Sabzevar medical students is equal to 0.56, and according to the estimated significance level which is equal to 0.001 and at the confidence level of 0.95, it can be claimed that the null hypothesis is rejected and its contradiction is confirmed. That is, H1 is accepted and as a result, Intelligence beliefs are related to Learning Approaches in Sabzevar medical students.

IV. DISCUSSION

This study investigated the relationship between classroom goal structure and Intelligence beliefs with Learning Approaches in Sabzevar medical students, correlation and regression were used to test this hypothesis, the results showed that the estimated significance level in the analysis of variance of the predictor variable and the criterion was 0.001. Therefore, the effects of predictor and criterion variables were significant, on the other hand, according to the amount of β obtained, most of which is related to the component of the skill target structure, that is, the best predictor of Learning Approaches is the mastery goal structure of the class.

The results showed that classroom goal structure and Intelligence beliefs can predict Learning Approaches. These findings with the research of Jafari and Zavar (2016) who showed that the orientation of the goal of progress predicts the Learning Approaches of students; champanci (2015) showed that there is a significant relationship between Learning Approaches and Intelligence beliefs.

Class goal structures are primarily focused on two types of goals, mastery goal structure, which emphasizes mastery, personal improvement, and understanding in the classroom, and a functional goal structure, which emphasizes competition and ability in the classroom. Classroom goal structures are environmental competencies related to competency, which is highlighted by the general classroom activities and the specific messages through which the teacher communicates with the students (Murayama and Elliott, 2009). Goal structure describes the type of developmental goals that are emphasized by the prevailing rules and educational activities in the classroom, school, or other learning environments (Wolters, A W, 2004).

In mastery goals, competency is defined based on internal criteria, while in performance goals, competence can be defined based on the approval and positive judgment of others. Therefore, considering the fact that learners seek internal approval with mastery goals, this internal validation seems to be obtained through a learning approach such as learning objectives, perception of ability, instrumental / future goals, and internal valuation. In explaining the prediction of Intelligence beliefs based on classroom goal structure, it can be said that Intelligence beliefs inherently state that intelligence is a fixed phenomenon and cannot be improved. Such a belief is associated with maladaptive motivational patterns such as learned helplessness, negative attributions of ability, and avoidance of risky tasks. Students with innate intelligence beliefs focus on achieving good performance and make the least effort to overcome problems. Students who believe that intelligence is an innate and inflexible trait are also more prone to Learned helplessness. Because they think that effort and hard work have no effect on improving this trait. In contrast, incremental belief indicates that a person's intelligence can be changed. People with such an IQ believe that IQ can be significantly improved. These individuals have a dynamic view of intelligence and also have fewer negative judgments about their personal traits and those of others (Hyman and Duke, 1998). Students who understand the classroom environment in a way that is the essence of learning and there is no negative competition in it and the main goal of students is to achieve mastery (mastery oriented), their intelligence beliefs will be more incremental. Conversely, if students feel that the atmosphere in their classroom is such that all classmates try to perform better than others and get a better grade from them (performance-oriented) Or they try not to look weaker than others and not to show themselves to be less competent (avoidance performance), this shows that their intelligence beliefs are increasing.

V. CONCLUSION

According to the results of the present study, learning activities, evaluation activities, and distribution of power and responsibility are led by teachers. Therefore, they should move the classroom goal structure towards mastery goals by eliminating competition in the classroom, not emphasizing grades, and giving importance to the level of students' efforts, so that they can institutionalize deep and lifelong learning in students.

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