



The Impact of Using the Reverse Learning Approach on Educational Goals and Lifelong Learning

Fariba Dortaj-, Ph.D.

Department of Educational Technology, Payame Noor University, Iran

Azad Allahkarami, Ph.D.

Farhangian University (Shahid Modares Campus), Sanandaj, Iran

Abstract

This research investigated the effect of using the reverse-learning approach on academic goal-oriented and lifelong learning of teacher students of Farhangian University. This is an applied research using a quasi-experimental research method. The research design was pre-test and post-test with the experimental and control groups. The population of this research included all teacher students of Farhangian University who were studying in the academic years 2018 and 2019. A cluster randomized two-stage random sampling method was used to collect the sample. At first, a pre-test of educational goal-orientation and lifelong learning was administered in both groups and after the implementation of the course at the end of the first semester, both groups were subjected to the post-test. To analyze the data, descriptive statistics including mean and standard deviation and inferential statistics, multivariate analysis of covariance analysis were used. Findings of the study showed the effectiveness of reverse education compared with the traditional method on academic goals and lifelong learning.

Keywords: Educational goals, inverse learning, lifelong learning, University of Farhangian

Introduction#

For many years, psychologists and educators have shown that goal-oriented education has a key role in the learning of learners (Ames & Archer, 1988; Duke & Leggett, 1988; Honicke et al., 2020; Raufort et al., 1999; Valle et al., 2003). Goal-orientation is defined as the destination that individuals pursue for their progress (Roebken, 2007; Schunk, 2005). Goal orientation refers to the underlying achievement outcome an individual strives for, which motivates engagement in a learning task (Honicke et al., 2020).

Wigfield and Cambria (2010) pointed out that goal orientation is an organized pattern of ideas, doctrines and emotions that determine the behavioral purpose of a person and makes him more interested in situations in which a particular behavioral pattern is followed. Specialists of goal-orientation tend to distinguish between goals of mastery and functional goals (Dweck, 2000). They believed that when one pursues

the goals of mastery, he wants to develop his adequacy by acquiring new knowledge and skills. Therefore, they consider their efforts as an effective step toward achieving goals and learn from their mistakes as a part of learning (Bouffard & Couture, 2003, p. 21). These people are struggling to master the tasks and duties, overcome the challenges, and increase their level of competence. In contrast, learners who pursue performance goals are more likely to demonstrate their skills and have a negative attitude towards new efforts. They ultimately strive to achieve a good grade or other important people's satisfaction in their lives like teachers or parents (Schank, Pintrich & Meece, 2008). Some have categorized functional goals into two groups: tendency to performance and avoidance of failure (Plante, O'Keefe & The'ore^, 2012). Learners either want to demonstrate their skills and competencies or try not to show these competencies in comparison to others. Performance-oriented people see themselves as skilled and capable of competing with others to showcase their abilities. But those people who avoid performance do not believe in themselves and try to avoid participating in competitions or

***Corresponding Author**

Email: faribadortaj2007@yahoo.com

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displaying their abilities in comparison with others (Elliot, Murayama & Pekrun, 2011). Generally speaking, there are many goal-oriented theories for developmental behaviors, but the key concept in all of them is the tendency towards the goal that expresses the learner's intention of the desired behavior (Schank et al., 2008). Goal orientation has been developed through a social cognitive approach, which focuses on the purpose or the goal perceived by the students. Previous research indicates that goal orientation is related to a widerange of cognitive, emotional, motivational, and behavioral outcomes (Lerang et al., 2019). For example researchers found a strong positive relationship between mastery goal orientation and academic outcomes (Neroni et al., 2018). If there is a mechanism to create and maintain this goal as a key factor in educational environments, it is hoped that learners are prepared for lifelong learning.

In lifelong learning, an individual learns from all stages of his life through organized or accidental, formal or informal learning. In this approach, the individual participates continuously in tackling success with many challenges, and enjoys the opportunity provided by learning, and will be motivated through a supportive process for gaining knowledge, values, skills and perceptions. Scientific and technical revolution, especially in information and communication technologies, is a remarkable phenomenon that has distinguished our age from the past centuries of human history. This revolution has made humans far ahead in a number of ways, providing a wealth of information, knowledge and tools, and on the other hand, it has faced us with difficulties and dangers. As a result, the need for lifelong learning is felt more than ever, because active participation of individuals in social, cultural and economic activities is essential by providing opportunities for learning so that they can play important roles in society. Lifelong learning is a form of social behavior; it is a continuous process, and education improves personal and social relationships as well as social and personal preferences. Furthermore, the concept of lifelong learning has emerged in order to adapt to rapidly evolving and changing social and cultural life and has become an important indicator of the level of education and employment conditions in developed and developing countries (Taşçı et al., 2019). Life-long learning involves the process of learning from the birth to the end without compulsion and willingness of the learner (Brahmi, 2008). According to Crowther (2004), lifelong learning is a kind of learning in which the person is constantly learning and is responsible for his

own learning. The acceptance of the responsibility to learn requires the person's awareness of how to learn.

UNESCO conducted a series of studies on the concept of lifelong learning, listing its remarkable features. A summary of these features is: 1) Holisticism: this feature provides a comprehensive insight into the skills and experiences that can be gained through life-long learning; (2) Coherence is understood through the curriculum tension and the cohesion between education, science and social life; 3) Flexibility: with the diversity or variety of educational content, learning styles, and learning time; 4) Opportunity or motivation; Development of lifelong learning requires social and individual guidance; 5) Learning Ability; the main focus of this tutorial is learning how to learn; (6) The Distinctive Administration: the fact that education can be done formally, informally, and by chance; and 7) Quality of life and learning: recognizing that the central and social function of education is human growth, so that all its potential talents can be actualized (Karimi et al., 2010). Duke and Hinsen's (2015) research suggests that universities have a key role in building lifelong learning and supporting adult education.

Throughout the history of education, the methods that can be used in teaching for the realization of goals have been the focus of many discussions and research, since the method of teaching and learning is in direct relationship with each other and determines the quality of the results in each program and is directly related to the quality of the teaching method. One of the approaches applied in recent years resulting in effective learning and the development of high-level thinking in learners is the reverse-learning approach or reverse-classroom approach. The reverse instruction, also referred to as inverted classroom, inverted learning and reverse classroom, is a learning pattern in which the traditional method of lecturing and the way students do assignments change (Arnold-Garza, 2014). The reverse class approach can be described as "what has traditionally been done in the classroom is now out of class and vice versa" (Lage et al., 2000, p. 32). The flipped classroom teaching model is colloquially defined as one in which the activities traditionally done by students outside class (e.g., practicing problem solving) are moved into the classroom session, whereas what is traditionally done in class (e.g., expository, information transmission teaching) is done outside and prior to class (Låg & Sæle, 2019). The reverse-learning approach is a technology-based educational approach that consists of two components: 1. Individual and direct computer-centered learning outside the classroom by video presentations and 2. Interactive group activities within the classroom

(Bishop & Werlinberg, 2013). Specifically, this definition emphasizes the need to use educational video in non-classroom learning. However, there are reports in the use of non-video media in the reverse-class approach, such as the use of presentation files (Alsowat, 2016), electronic books (Lee et al, 2016), and even paper books (Radcliff & Wong, 2015; Thai et al., 2017). Through the reverse learning method, learners have access to content in the form of educational videos before the class begins and when they go to the classroom, instead of being a passive listener, they will perform at the workshops (Boyer, 2013; Johnson, 2012).

The reverse learning originated from Eric Mazur's work at Harvard in the 1990s, in which he allowed his students to choose the content that best matched their needs. His students could choose textual, interactive, or problem-based content (Mazur, 1991). This idea was initially used to improve learning in the Harvard undergraduate elementary school classes and gradually became widespread throughout the world in various fields of study. The reverse learning model is the best way to make maximum use of direct presentation or lecture and active learning, perhaps this is why the model has many fans at all levels of education (Hoffman, 2014). Using the reverse learning approach, you can spend most of the classroom time in the most effective and creative way possible (Fulton, 2012). Because in this way, learners use online resources before the classroom, so the class time is freed for more effective learning activities such as class discussion and problem solving, and the learners will be less passive (Arnold-Garza, 2014).

Another advantage of reverse education is to enhance and improve learner-teacher interaction. This method makes it possible for learners to have the least amount of misunderstanding about the content of the course, because after viewing the educational content at home, learners will discuss issues that are difficult to understand in the classroom. In reverse learning, learners use video and multimedia to look at the teacher's teaching over and over again, put it back and forward and focus on the particular part, or store the content. Thus, in this way, the learner will learn in accordance with his or her personal characteristics. In this way, learners will control important elements such as time, location, learning path, and learning speed (Staker & Hom, 2012). Many proponents of the flipped classroom advocate the use of some mechanism to ensure student preparation, for instance, in the form of a quiz before or at the beginning of class (Talbert, 2017). Such mechanisms may serve as motivators for studying. Hew and Lo (2018) found in their meta-analysis of flipped class-room studies in

medicine and health education that quizzes at the beginning of class were a significant moderator of the summary effect size estimate

Increasing academic performance (Davies et al., 2013), creating an environment in which learner preferences are answered (Lemmer, 2013) and providing content tailored to inclusive needs (Bergman et al., 2013) are other benefits of reverse classes. Mental conflict (Millard, 2012), freedom (Fulton, 2012), control and participation in activities (Acedo, 2013), sense of responsibility for learning (Pape et al., 2012), sense of independence (Driscoll & Petty, 2014), motivation and self-esteem (Lemmer, 2013), cognitive enhancement (Taran & Gectas, 2016; Mattis, 2015), the degree of engagement in the course (Chen et al., 2017; Al-Suwat, 2016), increased accuracy (Matiss, 2015), self-efficacy improvement (Kurt, 2017; Thai et al., 2017), increased self-esteem (Luxe et al., 2016) and flexibility (Thai et al., 2017) are other advantages that provide reciprocal classes for learners.

As the benefits of reverse education have increasingly been recognized in universities in developed countries, and given the role that students at the University of Fahangian will play in educating future generations, it is better to make them familiar with the methods of teaching and learning practically. Considering the advantages of reverse education in previous research abroad, and because in our country no research has been found with the combination of the variables of this research so far, the present study sought to investigate the following hypotheses:

- 1) Reverse education is effective on the academic purposefulness of students at the University of Farhangian.
- 2) Reverse learning is effective in lifelong learning among students at the University of Farhangian.

Method

The present research is a type of experimental research in which the participants were randomly assigned to experimental and control groups.

Participants

The statistical population was 1396 teachers at Farhangian University, who studied in the academic year of 2018-19. The minimum number of people in each group for comparative and experimental causal research is 15 (Biabangard, 2010). Because the present study is part of experimental research, the statistical sample size for each of the experimental and control groups was considered to be 30 people. Using a two-stage cluster random sampling method, 60 participants were selected and divided into two groups of 30

people. The sample consisted of males between the ages of 18 and 24. The experimental group was run by using reverse learning and the control group using the traditional method for one semester. To ensure homogeneity and greater assurance of the same characteristics of the participants, the two groups were similar in terms of age, gender, and place of study. Also, the results of the pre-test of the two groups showed that the goal-oriented education and life-long learning of the experimental and control groups were homogeneous before the start of the experimental period. In this research, a pretest-posttest test design with a test and control group was used which is presented as follows:

R	T_1	X_1	T_2
R	T_1	–	T_2

Instruments

Educational Goal-orientation Questionnaire:

This questionnaire was developed by Buffard et al. in 1998. The purpose of this questionnaire is to evaluate the type of goal that a person chooses in his / her academic setting. This orientation is categorized into three categories: (1) mastery GO, (2) performance GO, and (3) avoidance GO. The questionnaire has 20 parts and is based on a five-point Likert scale (totally disagree to totally agree) with questions such as: (It's important for me to be better in class than others), which evaluate the type of goal that a person has in his or her situations chooses. 6 questions were related to the factor of mastery, 7 questions to the factor of performance, and 7 questions were related to avoidance to fail. In the present study, the face and content validity of the questionnaire was confirmed by experts and its reliability was obtained using Cronbach's alpha to be 0.79, which indicates an acceptable level of reliability for the questionnaire.

Lifelong Learning Questionnaire:

The Lifelong Learning Questionnaire was developed by Watzel et al. (2010). This scale has 14 parts, with a four degree Likert scale (totally agree to completely disagree), each substance having a value between 1 and 4. This questionnaire Questions such as: "Continuous Learning throughout Life (Lifelong Learning) is a professional responsibility for all students" evaluates lifelong learning. The questionnaire has three components of learning and motivation related beliefs (11, 9, 8, 7, 3, 2, 1), information search skills (14, 10, 6, 5) and attention to individual competencies (13, 12, 4). The minimum score is 14 and maximum 56. The scores between 14 to 18 indicated that lifelong learning is low. Between

18 and 36 shows lifelong learning is moderate, and the score above 36 indicates a high lifelong learning experience. In this study, the face and content validity of the questionnaire was confirmed by experts and its reliability was obtained using Cronbach's alpha to be 0.83, which indicates an acceptable level of reliability.

Procedure

Traditional classes were carried out through interactive-retroactive lectures between teachers and students in which the teacher used the students' questions to redirect the subject towards the objectives of the theoretical and practical concepts exposed in class. For this reason, traditional classes have been structured in three phases: Firstly, in the introductory phase the teacher goes over the contents explained in previous sessions in order to continue constructing new knowledge through presentations; secondly, in the phase of development, the teacher exposes the contents through presentations on multimedia platforms (PowerPoint: text, video-audio and images) and finally, the closing phase concludes with a synthesis, based on a summary made by the teacher and students' questions. For the flipped classroom, before each class meeting, the students were required to watch a lecturer provided video lecture. Video lectures were the primary means of disseminating course material to the students. The videos included audio of the instructor explaining the material and a live screen capture of the instructor writing equations on a tablet computer. Regarding the Flipped Classroom method, the classes were divided into two phases: In the first one, the students work with videos, presentations, readings and reflections on control questions before attending the class, in order to prepare the contents. Therefore, depending on the contents, the material is presented in multimedia format. In addition, the learning platform for the pre-class preparation is Moodle, which is accessible at any place and time. Activities, self-assessment questionnaires and a forum to discuss ideas and clear up doubts are also available within the platform. In the second phase during class time, the teacher starts clearing doubts by answering the student's questions related to the previously given academic material and then aims to deepen the knowledge through a design of situations introduced through illustrative examples, problems and simulations. The class ends with a synthesis of the work done in class, and students are given the opportunity to ask questions. Finally, students take a final test on the platform at the end of the session and are given immediate feedback on their answers.

Findings

To analyze the data, both descriptive statistics and inferential statistics methods were used. At the level of descriptive statistics, the mean, standard deviation, frequency was used to describe the existing conditions.

For analyzing the hypothesis of research, multivariate analysis of covariance analysis was used for analyzing the inferential statistics for generalized sample traits. SPSS 24 software was used to describe and analyze the data.

Table 1.

Mean and Standard Deviation of the Pre-Test and Post-Test Scores of the Two Groups in the Educational Goal-oriented Curriculum

test	The dependent variable	Experiment		control	
		M	SD	M	SD
Pre-Test	Educational Goal-Oriented	61.70	5.58	61.33	4.78
	mastery GO	22.53	3.29	22.66	2.90
	Performance GO	15.93	2.36	15.03	1.99
	Avoidance GO	23.23	3.95	23.66	5.08
Post-Test	Educational Goal-Oriented	65.80	5.95	61.96	5.21
	mastery GO	23.86	3.33	22.76	3.07
	Performance GO	17.26	2.69	15.20	2.36
	Avoidance GO	24.66	4.22	24.00	5.33

Table 1 shows the mean and standard deviation of the pre-test and post-test scores of the two groups in the educational goal-orientation variable in two stages of measurement. The mean and standard deviation in the pre-test of this variable in the experimental group

were 61.70 and 5.58 and in the control group 61.33 and 4.78 respectively. Mean and standard deviation in the posttest in the experimental group were 65.80 and 5.95 respectively while in the control group, they were 61.96 and 5.21 respectively.

Table 2.

Mean and Standard Deviation of Pre-Test and Post-Test Scores of Two Groups in the Lifelong Learning Variable

test	The dependent variable	Experiment		Control	
		M	SD	M	SD
Pre-Test	lifelong learning	51.56	6.99	50.03	3.36
	learning and motivation related beliefs	25.03	3.70	24.13	2.63
	information search skill	15.23	2.07	15.20	1.12
	attention to individual competencies	11.30	2.16	10.70	1.48
Post-Test	lifelong learning	54.90	6.57	50.13	3.31
	learning and motivation related beliefs	26.43	3.45	24.30	2.61
	information search skill	16.16	2.06	15.06	1.28
	attention to individual competencies	12.30	2.15	10.76	1.50

Table 2 shows the mean and standard deviation of the pre-test and post-test scores of the two groups in the lifelong learning variable in two stages of measurement. The mean and standard deviation in the pre-test of this variable in the experimental group were 51.56 and 6.99 and 50.03 and 3.36 in the control group, respectively. Mean and standard deviation in post test of this variable in the experimental group were 54.90 and 6.57 and in the control group 50.13 and 3.31 respectively.

Before testing the research hypothesis using multivariate covariance analysis, the assumption of normality was tested using the Kalmgorov Smirnov test, the homogeneity assumption of variances by using the F-Levin test, and regression slope assumption was also assessed by using variance test and for each of the 5 components with a significant level greater than 0.05. Equivalence assumption of variance covariance matrices was examined using the OMX test and this test was not confirmed by a significant level of 0.025. Based on the results of the

test, there was a significant difference between the experimental and the control groups in the linear

composition of lifelong learning components (Pillai's Trace= 0.83, $p < 0.01$, $F_{(2,55)} = 141.23$).

Table 3.

Results of Single-Variable Covariance Test in Multivariate Covariance Analysis for Comparison between Two Groups in Academic Goal-Orientation and Lifelong Learning

Source	Variable	Sum of Squares	Df	Mean Square	F	P	Effect size	Statistical power
Pre-Test	Academic Goal-Orientation	1749.13	1	1749.13	1429.77	0.001	0.96	1.00
	Lifelong Learning	1442.37	1	1442.37	639.21	0.001	0.91	1.00
Group	Academic Goal-Orientation	172.88	1	172.88	141.32	0.001	0.71	1.00
	Lifelong Learning	168.55	1	168.55	74.69	0.001	0.57	1.00

The results of Table 3 show that after controlling the effects of pre-test, there was a significant difference between the experimental and control groups in the educational goal-oriented variable with ($F = 141.32$, $P < 0.025$). The average of the moderated test group (65.59) and the moderate mean of the control group (62.12) were in the educational goal-orientation variable. With regard to the results of covariance analysis and adjusted averages, and considering the research constraints, it was effective in improving the academic goal-orientation of the students of the University of Farhangian. Due to the size of the effect of reverse training, 71% of the variance variable predicted the educational goal-orientation.

In the lifetime learning variable with ($F = 74.69$; $p < 0.025$), there was a significant difference between the two experimental and control groups in the lifestyle learning variable. In the life-long learning, the adjusted mean of the experimental group was (54.21) while it equals to (50.28) in the control group. According to the results of the covariance analysis and the adjusted means, and in the meantime of the research, the reverse training has been effective in

improving the performance of the Farhangian University students. Due to the effect size, 57% of the variance was expected to predict lifelong learning variable.

Exploring the First Hypothesis: Reverse education is effective on the academic purposefulness of students at the University of Farhangian.

Before testing the research hypothesis using multivariate covariance analysis, the normality of the groups was tested using the Kolmogorov Smirnov test, the homogeneity of the variance was used using the F-Levin test, and the regression slope assumption was also investigated using the variance test and was verified for each 5 components with a significant level of higher than 0.05. The coefficient of covariance variance matrix was evaluated using the MBox test and this test was conducted with a significant level of 0.44. According to the results of the Lambda Wilk's test between the two groups of experimental and control tests in the linear testing of target components was significantly different between the two groups in the linear testing of the components of goal orientation (Wilk's Lambda= 0.25, $p < .01$, $F_{(3,53)} = 25.16$).

Table 4.

Results of the Single-Variable Covariance Test in the of the Multivariate Covariance Analysis to Compare the Two Groups in Academic Goal-orientation Components

Source	Variable	Sum of Squares	df	Mean Square	F	P	Effect size	Statistical power
Pre-Test	mastery GO	506.60	1	506.60	1510.63	0.001	0.96	1.00
	Performance GO	302.19	1	302.19	509.30	0.001	0.90	1.00
	Avoidance GO	1198.91	1	1198.91	3596.71	0.001	0.98	1.00
Group	mastery GO	19.94	1	19.94	59.46	0.001	0.51	1.00
	Performance GO	16.09	1	16.09	27.13	0.001	0.33	0.99
	Avoidance GO	16.94	1	16.94	50.80	0.001	0.48	1.00

The results of Table 4 indicate that after controlling the pre-test effects, there was a significant difference between the two groups in domination with ($F=59.46$; $p < 0.016$), in performance variable with ($F= 27.13$; $p < 0.016$); and in avoidance of failure with ($F= 50.80$; $p < 0.016$).

In the goal orientation component, the adjusted average of the experimental group mastery was (23.90) and for the control group was (22.72). In the component of the performance orientation, the adjusted average of the experimental group was (16.76), while it equaled to (15.70) in the control group and in the component of avoiding failure, the adjusted average of the experimental group was (24.87) and the adjusted average of the control group was (23.78). According to the results of the analysis of the covariance and adjusted averages and considering the limitations of the research, it can be said that reverse education has been effective in improving the components of academic goal-oriented students of Farhangian University. Given the magnitude of the effect size, 51% of the variance of

dominance, 33% by performance component and %48 of the variance was predicted by failure avoidance.

Exploring the Second Hypothesis: Reverse learning is effective in lifelong learning among students at the University of Farhangian.

Prior to testing the second research hypothesis, using multivariate covariance analysis, the normality of the groups was tested using the Kolmogorov Smirnov test, the homogeneity of the variance was used using the F-Levin test, and the regression slope assumption was also investigated using the variance test and was verified for each 5 components with a significant level of higher than 0.05. The coefficient of covariance matrix was evaluated using the MBox test and this test was not verified with a significant level of 0.029 According to the results of the Pillai test, there was a significant difference between the two experimental and control groups in the linear testing of lifelong learning components (Pillai's Trace= 0.67, $p < 0.01$, $F_{(3.53)}=36.33$).

Table 5.

Results of the Single-Variable Covariance Test in the of the Multivariate Covariance Analysis to Compare the Two Groups in Lifelong Learning Components

Source	Variable	Sum of Squares	Df	Mean Square	F	P	Effect size	Statistical power
Pre-Test	learning and motivation related beliefs	352.22	1	352.22	246.21	0.001	0.81	1.00
	information search skill	93.95	1	93.95	253.78	0.001	0.82	1.00
	attention to individual competencies	119.92	1	119.92	427.67	0.001	0.88	1.00
Group	learning and motivation related beliefs	25.40	1	25.40	17.75	0.001	0.24	0.98
	information search skill	16.95	1	16.95	45.79	0.001	0.46	1.00
	attention to individual competencies	12.73	1	12.73	45.42	0.001	0.45	1.00

The results of Table 5 indicate that after controlling the pre-test effects, in the component of the learning and motivation beliefs ($F= 17.75$; $P < 0.016$), in the information search skills ($F= 45.79$; $P < 0.016$), in the attention to individual competency ($F= 45.42$; $P < 0.016$), there was a significant difference between the experimental and the control groups. In the beliefs related to learning and motivation component, the adjusted average of the experimental group was 26.03 and for the control group was 24.69; in the component of information search skills, the adjusted average of the experimental group was 16.16 while it equaled to (15.07) in the control group and in the component of individual competencies, the adjusted average of the experimental group was 12.00 and the adjusted average of the control group was 11.06. According to the results of the analysis of

covariance and adjusted averages and considering the limitations of the research, it can be stated that reverse education has been effective in improving the components of life-long learning in the students of Farhangian University .

Due to the effect size of the reverse training, it can predict 24% of the variance of the beliefs to learning and motivation component, 46% of the information search skills and 45% of the components of attention to individual competencies.

Discussion and Conclusion

In the present study, the effect of reverse training on academic goal-orientation and learning lifelong learning of students of the University of Farhangian was examined. The findings showed that changes after the administration of reverse training in were

significant in the experimental groups and that reverse learning was effective on educational goal-orientation and lifelong learning of the students of Farhangian University. In order to show the differences in the pre-test and the post-test scores of the experimental and the control groups, the mean scores of the two groups were compared using the multivariate covariance test. According to the results, the significant level of the differences between the mean pre-test scores with post-test was $p < 0.001$. Therefore, it was concluded that reverse training was influential on the educational goal-orientation and lifelong learning of the Farhangian University students.

Considering the first hypothesis, although no study was found which directly investigated the effect of reverse training on academic goal-orientation, the findings of this research are indirectly in line with the results of the studies by Thai et al. (2017), Alsewat (2016), Dahlke (2016), González-Gómez et al. (2016) and Özpınar (2016). In the explanation of the findings, it can be said that the methods making the learners actively learn and be active learners rather than passive listeners can make them motivated goal-oriented learners. When a person does not have any motives in his ordinary and educational life, he would act passively and has no intention to progress. In other words, a person's tendency towards a situation, performance in that situation and his reactions to the variables would be in accordance to the goals he defines for himself. The performance and presence in reverse training is based on goal-orientation since a teacher will upload the content for the students in advance and the students will attend the class considering the questions they have in mind. The advantage of reverse training is its ability to change the classroom to a workshop in which the learners can choose the content and interact with the other learners in practical and group activities. While in reverse training, a teacher acts as a coach, a consulter, and a facilitator and encourages the learners to practice more. Therefore, reverse training leads to more motivated class participation due to its learners' preparation before the class (Court, 2017; Fraga & Harmon, 2015).

Also, regarding the second hypothesis on the effectiveness of the reverse education on lifelong learning, the findings of the research are consistent with the results of Thai et al. (2017), Mennella (2016), Özpınar (2016), Moos and Bonde (2015), and Yang et al. (2015). In the explanation of these findings, it can be stated that in recent years, there is a large number of new tools and resources such as microfilms, slides, videos and computer to improve the teaching-learning process. From the lifelong learning perspective, the

computer has a special place, since it facilitates the access to a large amount of information. In addition, it can make the difficult and repeated jobs easier for the instructors, for example repeating the same subject for several times in the classroom is tedious for the instructors while the students can watch a video uploaded by their instructors in the site again and again.

It is quite clear that if a curriculum is student-centered and based on problem-solving, it can improve the lifelong learning in the students. The problem-solving based curriculum increases self-regulated learning and develops self-regulated learning and self-assessment skills that are important factors in the continuation of learning, more than traditional curriculum (White, 2005). While unfortunately, in many cases, teaching at the University level is just transferring the content from the instructors' mind to the students' and the instructor is the only source of knowledge and information which has led to training some passive learners who memorize the content. Currently, the teaching method of lecturing is dominant, and it is obvious that teaching this way cannot be effective in the time when the students should be trained to continue education. Therefore, traditional teaching methods should be in line with the methods that will be consistent with the idea of lifelong learning. One of the reasons of improving learning in the reverse classroom is due to the increase in time and practice. Because studies have shown a significant correlation between the time allocated and learning (Chen et al, 2017).

Finally, it can be claimed that from among the wide range of teaching methods used in higher education, there should be a move from teacher-centered approach to more problem-solving approaches to promote lifelong learning and train independent learners and researchers. One of the basic approaches associated with lifelong learning is the creation of the conditions in which students obtain the knowledge, skills and attitudes that enable them to choose and plan to achieve the learning goals and learn independently. In other words, students should learn how to learn. Knapper and Copley (2000) have listed more than 76 teaching approaches which facilitate longlife learning. The common points among all the approaches are using group resources in learning, giving importance of processing and thinking in learning rather than memorization, using various learning resources to assimilate real life conditions and pay tribute to creative ways for problem solving and making decision. What is clear is that reverse training is an effective method for lifelong learning since it focuses

on the classroom and shows the above-mentioned features.

In short, the present study can be concluded that the reverse training is effective on academic goal-orientation and the lifelong learning of the students of Farhangian University. Obviously, if this method is used correctly, it will lead to the teacher students' progress, cooperation and participation.

The findings recommended providing schools with adequate technology tools, modern laboratory devices, and high speed internet to help teacher to prepare the needed materials according to the flipped classroom strategy. Furthermore, the study suggested re-applying this research study by investigating the effect of flipped classroom strategy on other variables such as other content subjects or areas and other grades from different academic stages. There were some limitations in the implementation of this research; the most important ones included limiting the statistical population to male students and caution in generalizing the results to the female's society, as well as the limitation of the instruments to some questionnaires and the inability to use the other data gathering tools such as interviewing and observation. .

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