DESIGNING AND IMPLEMENTING A SITUATED LEARNING PROGRAM AND DETERMINING ITS IMPACT ON THE STUDENTS' MOTIVATION AND LEARNING

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ABSTRACT

Inability to use knowledge is one of the major problems that university graduates face. Some instructional designers recommend situated learning for the solution.

The purpose of this study is to determine the effect of situated learning on students' school motivation and achievement. The two main hypotheses are: 1- Situated learning increases learning. 2- Situated learning increases school motivation. Thirty four psychology junior students at Payame Noor University, Tehran, Iran participated in the study. Classes were randomly selected for situated learning curriculum and lecture-based curriculum. Lecture-based curriculum was performed in face to face classroom. Situated learning was carried out in blended learning approach. Data was collected by school achievement test and the short form of Mc Inerney and Sinclaier standard motivation questionnaire, before and after interventions. Statistical analysis was done by SPSS software version 15. It was shown that situated learning increased academic achievement ($p<0.001$) and motivation ($p<0.001$) in comparison to lecture- based learning and can serve as a good method in instructional programs.

Keywords: Situated learning, school motivation, learning

INTRODUCTION

There is a growing concern in professional contexts about performance levels of new recruits and the existing staff. However, university graduates do not have the "higher order skills "and attitudes necessary to do the job properly. Although occupations are going to be more and more technical, university graduates often do not have enough ability to confront with workplace challenges (Kirschner 2001, Dalgran 2007).

Sunden (2008) points to Broad and Newstorm (1992), these authors, as well as many others, have called attention to the problem that most of knowledge and skills gained in training (well over 80 percent) are not fully applied by employees in job situatins. He also points to Balodine and Ford (1988) that claimed, as a rule only 10 percent of the expenditures on the training in organizations lead to on-the-job application. Technology can improve instruction. The possibility of synchronous and asynchronous interaction and information transfer among different groups in different geographical areas is amazing (Serano 2009). But the question which should be answered is whether the use of technology is enough. If not, what approach should be taken and what key factors should be considered? Herrington and Oliver (2000) offer situated learning approach. Situated learning means learning in an authentic work situation (Furstenau, 2007). In this approach, learning is a social process that happens in situations similar to real work place (Lunce, 2006 and Lave, 2008). How can we design a situated learning curriculum? Some authors believe that situated learning curriculum can be performed through real work activities or by classroom activities that simulate authentic context.

Other authors believe that educational designers, who want to apply situated learning theory in electronic media, are on the wrong track. But Smith (2003) believes that distance learning with computer can create an authentic environment for learning.

DESIGNING SITUATED LEARNING CURRICULUM

For designing situated learning curriculum, the following items should be considered:

- **Provide authentic context. Authentic context reflects the way knowledge will be used in real life, and is correlated with authentic challenges (Herrington, 1995).**
- **Provide authentic activities: Authentic activity is similar to real world situations. In this environment, learners can interact with the environment and review the issue from different perspectives (Herrington, 1995).**
- **Provide access to expert performance and modeling process: learners should be able to see the expert job performance and use it as a model in their own activities (Stalmeijer, 2009).**
- **Provide access to different roles and perspectives: learners should be familiarized with different roles and perspectives. Diversity of views not only prevents boredom, but also provides a more authentic learning by enriching the environment (Herrington, 1995).**
- **Support collaborative construction of knowledge: Situated learning emphasizes social presence and cooperative participation. Here participation is not just joining a group and contributing in specific activities with certain people; it's also an active process in which the society and social identity are formed (Wenger, 2008).**
- **Promote reflection to enable abstraction to be formed. Reflection means' that apprentices review and analyze their own and other peer work, and compare it with a specialist or other group members work (Oril, 2010).**

- **Promote articulation to enable tacit knowledge to be made explicit: Articulation means sharing ideas (Oril, 2010).**
- **Promote scaffolding and coaching in critical items: Scaffolding means increasing the novice ability with the support of a specialist and achieving expertise with receiving feedback. By increasing the student's capabilities, the specialist adds complexity to the environment and considers greater autonomy for the learner (Lave, 2008).**
- **Promote authentic assessment: When situated learning is performed, traditional evaluation methods lose their adequacy, and assessment must be focused on understanding and problem solving (Morrison, 2007).**

THEORETICAL BASIS AND BACKGROUND

Numerous studies indicate the importance of situated learning programs on improving the students' school achievement and motivation. Some of them are as follows:

Hals (2006) designed a situated learning curriculum for nursing students and showed that blended situated learning enhanced learning. Ngayen (2006) also performed a blended situated learning program for pharmacology students, and demonstrated that in comparison to the control group, that students gained better professional performance. A study in the University of Sydney by Robbie et al. (1998) indicates that situated learning increases application of knowledge by trainees. Kneebone and colleagues (2006) explained that situated learning not only increased learners' motivation, but also was suitable as an alternative in the cases where there was no possibility of real world experience.

In a study conducted by Gulikers (2008), situated learning increased learning and professionalism in social science students. In another learning program, to evaluate and understand the views of learners towards situated learning, 25 students in the seventh grade participated in a blended situated learning program including modeling, coaching, scaffolding, reflection and articulation. The results displayed that learners had positive view towards situated learning and evaluated it as a good model for learning science (Unal, 2010). The results of a series of extensive research from River City projects with cooperation of Harvard University in comparing blended situated learning and lecture-based learning revealed that situated learning increased learning and motivation compared to lecture-based learning (Ketelhut, 2006).

In another study, Edwards (2008) designed a situated learning curriculum for teaching gerontology care for nursing students. The results showed that the program not only increased the learners' learning and motivation, but also improved the students' attitudes toward gerontology care. Students participating in this program had more accurate and positive understanding of the needs of the elderly. To determine the advantages of situated learning in business education, Anderson and colleagues (2008) attempted to design a business skills curriculum. Therefore, an on-line training course was designed based on the trading experiences of the tutor. In addition, a textbook was offered as reference guide. Before starting the course, the instructor asked questions about the situations and learners were confronted with the issue.

In the first step, the students worked through the internet and then presented their findings, and in the next step the teacher announced his opinion and interacted with the students about the issue. In all of these sessions, the instructor acted as a key member and raised discussion stimulating questions. All of the discussions were uploaded in a public web site, and through this method collective situated learning was performed.

He suggests that this educational method can also be suitable for education of medical and law students. Although numerous studies and research reviews, indicates the usefulness of situated learning in improving students' school motivation and learning, there is no special guide direction for designing these programs, and in each rejoin, according to regional restrictions and posiblities, different special method must be used.

OBJECTIVES

This study aimed at designing and implementing a situated learning program and determining its interventional effect on motivation and academic achievement.

RESEARCH HYPOTHESES

1- Situated learning increases learning.
2- Situated learning increases school motivation.

RESEARCH METHODOLOGY

Statistical Society, Sample and Sampling Methods

This study was an empirical research. A total of 34 junior psychology students at Tehran Payame Noor University, Iran who had enrolled in the "psychopathology" course for the first time and tended to participate in the study were selected as the sample group.

Classes were randomly divided into the intervention and the control groups. Eighteen students participated in the situated learning curriculum and sixteen participated in the lecture-based curriculum.

Instruments

Student's motivation was measured by the short form of Mc Inerney and Sinclaire school motivation questionnaire and their school achievement was determined by achievement tests before and after programs. The short form of Mc Inerney and Sinclaire school motivation questionnaire has 49 questions on different aspects of school motivation; the questionnaire not only measures academic motivation, but also the intrinsic and extrinsic motivation can be measured by it. Validity and reliability of this questionnaire have been confirmed by Bahrani, 1372, Salehi (1388) and Mottahedi (1386) in Iran. To determine academic achievement, a number of questions related to content were randomly selected from the bank of university questions and were used in the pre- and post-tests. The same questions were used for both groups and in both stages.

Research Method

Lecture-based curriculum was performed in university classroom. Initially, an introductory session was held between the students and lecturer. In this session, the students got familiar with training process, obligations and tasks of the lecturer and themselves. Then, they were asked to complete pre-tests. After six weeks, a lecture-based classroom was held for students and post-tests were given by them. During this period, they were allowed to study the textbook. Situated learning program was designed according to the viewpoints of experts and background research.

An introductory session was held between the students and tutor and the students got familiar with training process, obligations and tasks of the tutor and themselves. In this session, the students received a multimedia CD ROM about the course content. Allen (2007) believes that introductory sessions motivate students for attending in learning process.

To provide an authentic context, we used video-based demonstrations, stories related to the context and clinical interviews with step by step description of instructor conducted activities. Hsiao (2008) believes that pictures or video demonstrations can lead to learning in authentic context. Herrington (2000) and Lok (2006) used narratives for designing authentic context in the situated learning program. In this study, the authentic context was produced by role playing between students and a trained person who played the role of a mental illness patient too. Gulikers and his colleagues (2008) used role playing in the classroom to create authentic context in the situated learning program. To provide authentic activities, students thought about answering questions on the CD individually or in groups and then shared their opinions and comments with the instructor or other classmates through online chat, e-mail messages and yahoo group. In addition, they had the opportunity to interact with simulated patients. They faced specific patient's problem and tried to solve the problem individually or in groups. Finally, they sent their comments to other classmates. They had to study the patient's problem carefully to understand completely what the question was. In fact, they had to review every aspect of the issue. For creating an authentic context, Allen (2007) suggests questions that require open ended answers, and exercises that need activities and thorough review of the subject. Serano (2009) used online chat for establishing on line communications, too.

To provide access to expert performance and modeling process, we used video-based instruction composed of interviews of the psychologist with patients with step by step explanations of the psychologist's actions. Wooly (2007) used expert's performance by demonstrating video-based instruction as well. Herrington and Oliver (2000) also used video based instruction for modeling process.

Furthermore, to provide access to different roles and perspectives, the examples in the educational CD ROM were discussed in groups by chat, email or the non-virtual classroom.

Examples were gradually replaced with questions that could be evaluated from different points of view. Students solved the problem individually or in paired online groups and finally shared their opinions with other classmates and tutor. In this regard, Serano (2009) used online chat for group communication and construction of collaborative knowledge.

The students were asked to articulate their thought while thinking about the questions. Wooly (2007) believes that reflection can be achieved by encouraging students to express what is going on in their minds. Serano (2009) made articulation possible by on-line chat. In the present study, the students could take part in online chat, articulate their opinions by e-mail, and participate in face to face classes.

Scaffolding and coaching were made by working individually or in paired groups with feedback and support of the tutor. Wooly (2007) believes that scaffolding can be presented through tips, references and feedback on students' performance.

Authentic assessment was done through monitoring the students' performance in online group discussions, student's portfolios and face to face classes. Morrison (2007) believes that in situated learning, assessment should focus on understanding and problem solving. In order to perform an authentic assessment, Allen (2007) offers portfolio and monitoring students in group discussions. Although evaluation was carried out through this method, the same questions and methods should have been used to comparatively evaluate academic achievement.

FINDINGS

Twenty four percent of the individuals were older than 30 and 76 percent were between 18 to 30 years old. No significant difference was observed in their personal characteristics including age, occupation and marital status (p<0.01).

Table: 1
Comparison of pre-test and post-test scores of academic achievement and academic motivation (intrinsic motivation and extrinsic motivation) in lecture-based instruction group.

Variable	Mean and SD in lecture-based learning		Wilcoxon test	
	pre-test (n=16)	post-test (n=16)	significance	z
Academic motivation	172.87±12.52	170.50±14.98	0.568	-0.571
intrinsic motivation	26.87±3.51	26.06±3.78	0.618	-0.498
extrinsic motivation	58.12±8.04	56.75±6.52	0.238	-1.181
Academic achievement	3.93±1.7	8.94±1.64	0.001	-3.370

Table: 2
Comparison of pre-test and post-test scores of academic achievement and academic motivation (intrinsic motivation and extrinsic motivation) in situated learning group.

Variable	Mean and SD in lecture-based learning		Wilcoxon test	
	pre-test (n=18)	post-test (n=18)	significance	z
Academic motivation	167.88±11.77	186.16±12.89	<0.001	-3.507
intrinsic motivation	26.77±2-34	29.72±2.51	0.004	-2.868
extrinsic motivation	55.77±66.67	56.16±6.31	0.905	-0.119
Academic achievement	3.13±1.78	14.80±2.13	<0.001	-3.305

Table: 3
changes in pre-test and post-test score in academic achievement and academic motivation (intrinsic motivation and extrinsic motivation) in lecture-based learning and situated-based learning groups.

Variable	Mean difference in pre test and post test		Man withnney test		
	situated learning	lecture-based instruction	Man withnney	z	significance
Academic motivation	18.28±15.07	-2.37±9.00	18.5	-4.32	<0.001
intrinsic motivation	2.94±3.26	-.81±3.05	65.5	-2.72	0.002
extrinsic motivation	0.39±1.03	-1.37±3.42	11.5	-1.03	0.509
Academic achievement	11.66±2.03	5.00±2.97	5	-4.80	<0.001

DISCUSSION AND CONCLUSION

A significant increase in the mean of academic achievement in post-test scores was observed in both lecture-based program and situated learning program groups compared with the pre-test scores (Table: 1 and 2). In order to compare the effects of training programs on academic achievement, the mean difference in pre- and post-test scores of both groups was also measured. The results showed a significant increase in mean score changes in the situated learning group compared with the lecture-based instruction group (Table: 3). In other words, confirming the first hypothesis, compared with lecture-based instruction, situated learning increased students' academic achievement. Consistent with these findings, Ngayen (2006) also showed that situated learning increased the students' learning in comparison with the control group. Anderson and colleagues (2008) also reported that situated learning improved the students' learning. In a study conducted by Ajjawi et al. (2007) on 12 physiotherapy students, situated learning with role playing increased learning and professional reasoning. Smith (2010) believes that since different learners have different learning styles, in correspond to lecture based learning, blended learning improves learning. Wang (2010) mentions that blended learning improve critical thinking, reflection and sharing knowledge among the learners and improve learning. He believes that using technology improves learning by improving the students' interactions and offering integrated learning.

One of the features of situated learning is "collaborative problem based learning". Wiginia (2010) believes that in collaborative problem based learning; problems can be viewed from different perspectives and improves learning. The fact that anybody's learning in group depends on other members' success, encourages all groups to help each other and improves social learning (wentzel, 2010).

In confirming the second hypothesis, the findings showed significant differences in score changes of school motivation and intrinsic motivation between pre test and post test in situated learning group, and no difference was observed in extrinsic motivation. However, none of the motivational aspects, in lecture-based learning displayed significant changes among pre-test and post test. Comparisons of Mean difference in pre test and post test of both groups demonstrated that a significant difference exists between the intrinsic motivation and academic motivation variables.

In other words, situated learning not only increased school motivation of learners, but this effect was mostly imposed intrinsically.Several factors caused increase in the students' motivation in this study. Wentzel (2010) believes that collaborative learning increases intrinsic motivation of learners. Urdan (2006) believes that positive reinforcement accompanied with tutors' supportive behaviors augments the students' responsibility for active learning and self adequacy, which increases the students' intrinsic motivation for learning. Koka (2003) believes that positive and informative reinforcements of tutor intrinsically motivates learner to learn.

Another feature of situated learning is "Scaffold instruction". "Scaffold instruction" increases learner intrinsic motivation by encouraging both learner and tutor to take part in challenging activities (urdan.2006) Students participating in the study by Develotte (2005) reported that situated learning increased their motivation and commitment by working in authentic context.

Richardson (1999) believed that when learners find their professional identity, and are encouraged to challenge professional problems, they work with more intrinsic motivation and their ability to deal with problems increases.

Research conducted by Shell (1997) also showed that situated learning increases motivation by creating the appropriate atmosphere for learning and promotes the feeling of strength and ability in learners. Galia (2002) demonstrated that with increasing participation of students in professional roles, their intrinsic motivation increased.

Erich (2008) also designed a situated learning program for nurses and demonstrated that situated learning increased their motivation. unal (2010), quoting Collins, Brown and Newman (1998) that the processes of coaching, modeling and entrusted responsibility to learners, as seen in situated learning, increase intrinsic motivation of the learners (unal, 2010).

Working with real information enhances the learner's intrinsic motivation. Unal (2010), quoting Krajek (2001) also points out that working with real information makes the learners understand the relationship between learning and application of knowledge and, therefore, increases both learning and motivation. Although designing situated learning curriculum expends much time and money, it is a worthwhile approach to education.

There are some limitations in this study. For example, this method of teaching-learning requires active learners. Another problem is limited access or inability to use computers. In a study sponsored by Jones knowledge.com and course share.com, the most important barriers to e-learning were inadequate time for learning and lack of educational support (Bonk, 2003).

Besides, in this study, situated learning was implemented in only a small part of the course; consequently, the adverse effects of other teaching methods were incontrollable. According to the results of this study, it is recommended to view situated leaning as a suitable training program and research in different aspects of its efficacy should continue.

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