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Investigating the Relationship between Learning Approaches and Academic Achievement among the Students of Shahroud University of Medical Sciences

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Abstract

Background: The study approaches are among the effective factors in comprehensive academic achievement and performance. The aim of study was to identify the learning approaches of nursing and midwifery students of Shahroud university of medical sciences and its connection to their academic achievement.

Methods: This study is a descriptive - cross-sectional one which was conducted on 234 nursing and midwifery students of Shahroud university of medical sciences during the educational year of 2010-11. Data were collected by Approached and Study Skills Inventory for Students (ASSIS) and also demographic information collection form. To determine the students' academic achievement, their averages were used. To analyze the data, descriptive test and Chi-square test as well as the one-way ANOVA were used by SPSS version 16.

Results: The results showed that more than 60% of students were using the in-depth approach. There was a significant relationship between the semester average among the nursing students and learning approaches (p value=0.032), while no significant relationship was observed between the semester average among the midwifery students and learning approaches (p value=0.270).

Conclusions: Regarding the study results, it seems that the manner of application of teaching techniques and methods, the environmental conditions of student, assessment method and motivation among the students are the probable causes of the results. To encourage the student to use the deep learning approach, it is needed to teach the systematic teaching methods to instructors and promote the teaching qualitatively.

Keywords: Learning approach, Academic achievement, Shahroud.
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Introduction

One of the important issues in teaching and learning process is the learning and study approach.[1,2] The learning and study approach is a means through which the learner learns the lessons so that he can organize and process the new information and experiences in his/her mind.[3] Selecting the appropriate approach to learning significantly affects the academic achievement and promotion as well as the learned knowledge durability.[4,5]

The deep, surface, and strategic approaches to learning are among the basic approaches in training. The deep approach aims at real understanding plus long-term and significant learning of materials, while in the surface learning, the learner memorizes what he sees and reads; i.e. like a parrot. The strategic approach focuses on the learning techniques where the learner organizes his notes and tries to predict the course criteria and makes the responses close to the learners' expectations and wants.[6-8]

The study approaches are effective in comprehensive academic achievement and performance.[9] Studies have shown that the factors related to the training environment such as the teaching methods, measurement methods, specific training objectives and standards, occupational needs of learners as well as the factors related to the personal characteristics of learners including interest in the content of curriculum, the learner's perception of the learning concept and his/her background in lesson subject matter all influence the person's learning.[10] The most important performance indicator of any university is the students' learning, where their academic achievement can be a means for its measurement. Specifying the academic performance enables the university planners to predict strategies for improving the university function.[11,12] The academic achievement is influenced by different factors whose investigation can show their contribution to academic achievement and determination of solutions for identifying the causes of academic achievement or failure. Meanwhile, identifying these factors can improve the preparation of learners to enter the university and their performance there. Various studies have indicated that factors such the comprehensiveness, teachers, programs, equipment and training environment can affect the academic achievement and learner's learning.[13,14]

Hence, given the developments and advances in medical procedures and clinical cares, the healthcare centers need nurses and midwives who can provide the patients with proper and effective healthcare concerning their complicated healthcare needs. Therefore, nurses and midwives should possess deep and sustainable learning, critical thinking, problem-solving ability and decision-making more than ever. To empower this group, training centers should take the proper training strategies and program contents as well as appropriate learning techniques into account.[15] Thus, regarding the impact

of learning approaches on learning and effects of deep learning in learning and requirements of students of nursing and midwifery especially in applying the taught sciences, this study was conducted for identifying the learning approaches of nursing and midwifery students of Shahroud University of Medical Sciences and its connection to their academic achievement.

Materials and Methods

The present research is a descriptive – cross sectional study which was conducted on 234 nursing and midwifery students of Shahroud University of Medical Sciences during the educational year of 2010-11. The population included all nursing and midwifery students who had passed at least two semesters. To conduct this research, the required permits were taken from the Research Division (project code 9061) and Nursing and Midwifery Faculty. To collect the data, once the study objectives were explained to the students, they were assured of the confidentiality of information and their voluntary participation.

Data were collected by Approached and Study Skills Inventory for Students (ASSIS) as well as demographic information collection form. The demographic questionnaire used in this study included ten questions on age, gender, field of study and year, semester average, grade point average, place of residence, interest, awareness and previous knowledge of the field of study. To determine the students' academic achievement, their averages were used. In order to classify the students based on the average, three high, medium and low averages were calculated through the mean and SD. Those students whose averages were higher than 1 SD of the calculated mean were categorized in high average group; those with 1 SD higher or lower than the mean and those with 1 SD lower than the mean were categorized in medium and low average groups, respectively.

The Approached and Study Skills Inventory for Students (ASSIS) has been designed to measure the use of learning and study approaches by the students which examines three deep, strategic, and surface levels.[16] This inventory was translated by Mansouri et al. and used in Shiraz University. The validity and reliability of this inventory had been investigated among the nursing and midwifery students of Shiraz University. The Cronbach's alpha calculated for the inventory's reliability among the nursing and midwifery students and total had been reported as 78%, 8% and 78%.[17] This questionnaire includes totally 52 questions of which 16, 20 and 16 questions are devoted to measurement of deep, strategic and surface approaches, respectively, with 5-point Likert scale in each field. Obtaining the highest score in each field is the criterion for determining the most common approach used by the student.[17,18] Since the number of questions in three approaches was not the same, the highest score in each approach was calculated from 5; i.e. in each field, the obtained scores were summed, then divided by the number of questions for that field. The scores obtained from the learning level were then compared to each other. To analyze the data, descriptive test and Chi-square test as well as the one-way ANOVA were used by SPSS version 16. The significant level was set at 0.05.

Results

In this study, 281 questionnaires were distributed out of which 234 were responded by the nursing and midwifery students. The study results indicated that the mean age of student was 21.85±2.76. Specifically, 210 (89.7%) and 24 (10.3) students were female and male, respectively. The 3rd and 5th semester's students had the highest (29.9%) and lowest (15.4%) frequencies, respectively. Also, 131 students (56%) were studying in the nursing principles. The mean average of students was 15.21±11.53.

Considering the approaches, 61% male and 54% female students used the deep approach where no significant difference was observed between the gender and learning approaches (p value=0.108). About 60% of students in two fields of study used the deep approach, but again no significant difference was observed between the field of study and learning approaches (p value=0.641). Among the participants, 166 students lived in dormitory and a significant difference was observed between the place of residence and learning approaches (p value=0.002) (table 1).

Among the participants, 178 students had chosen their fields of study with previous knowledge and 175 with interest. No significant difference was observed between the previous knowledge and learning approaches (p value=0.817) or between the interest in field of study and learning approaches (p value=0.254).

Although the frequency of students with deep approach was higher in the medium average group, there was no significant connection between the total average and learning approaches (p value=0.364). Those students whose semester average was medium used the deep approach more, but no significant difference was seen between the semester average and learning approaches (p value=0.097). Most participants were on the 2nd and 3rd educational years and most of them (more than 60%) used the deep approach; however, a significant difference was seen between the educational year and learning approaches (p value=0.359).

The results revealed no significant difference between the grade point average of nursing students and learning approaches (p value=0.453) or the grade point average of midwifery students and learning approaches (p value=0.449). There was a significant difference between the semester average of nursing students and learning approaches (p value=0.032), while no significant difference was observed between the semester average of midwifery students and learning approaches (p value=0.270) (table 2).

The results of one-way ANOVA showed that there was no significant difference between the learning approaches and total academic achievement of students (p value=0.099). On the other hand, there was a significant difference between the learning approaches and the semester average (p value=0.039); those who used the deep approach had a greater academic achievement than those employing the surface approach (p value=0.042) (table 3).

Table 1. Relationship between learning approaches and demographic variables

Variables	Learning approaches						p value*
	Deep		Strategic		Superficial		
	Number	Percent	Number	Percent	Number	Percent	
Sex							
− Male	13	54.2	4	16.7	7	29.2	0.108
− Female	129	61.4	53	25.2	28	13.3	
Field of Study							
− Nursing	76	58	34	26	21	16	0.641
− Midwifery	66	64.1	23	22.3	14	13.6	
Place of residence							
− Dormitory	30	44.1	26	38.2	12	17.6	0.002
− House	112	67.5	31	18.7	23	13.9	
Course Awareness							
− Against	28	59.6	11	23.4	8	17	
− Indifferent	6	75	2	25	0	0	0.817
− Agree	107	60.1	44	24.7	27	15.2	
Interest in choosing a field							
− Against	24	50	12	25	12	25	
− Indifferent	7	70	2	20	1	10	0.254
− Agree	110	62.9	43	24.6	22	12.6	
Total Average							
− Down	14	46.7	9	30	7	23.3	
− Medium	105	63.6	36	21.8	24	14.5	0.364
− Top	22	59.5	11	29.7	4	10.8	
Semester grade point average							
− Down	19	48.7	10	25.6	10	25.6	
− Medium	104	46.6	35	21.7	22	13.7	0.097
− Top	18	54.5	12	36.4	3	9.1	
Academic year							
− First	20	57.1	10	28.6	5	14.3	
− Second	50	68.5	14	19.2	9	12.3	0.359
− Third	50	62.5	20	25	10	12.5	
− Fourth	22	47.8	13	28.3	11	23.9	

* Chi-square test

Table 2. Relationship between average and educational approaches in nursing and midwifery

Field of Study	Variables		Learning approaches						p value*
			Deep		Strategic		Superficial		
			Number	Percent	Number	Percent	Number	Percent	
Nursing	Total Average	Down	11	44	7	28	7	28	
		Medium	59	61.5	24	25	13	13.5	0.453
		Top	5	62.5	2	25	1	12.5	
	Semester grade point average	Down	13	48.1	5	18.5	9	33.3	
		Medium	52	60.5	22	25.6	12	14	0.032
		Top	10	58.1	7	41.2	0	0	
Midwifery	Total Average	Down	3	60	2	40	0	0	
		Medium	46	66.7	12	17.4	11	15.9	0.439
		Top	17	58.6	9	31	3	10.3	
	Semester grade point average	Down	6	50	5	41.7	1	8.3	
		Medium	52	69.3	13	17.3	10	13.3	0.270
		Top	8	50	5	31.2	3	18.8	

* Chi-square test

Table 3. Relationship between academic achievement and learning approaches

	Learning approaches	Mean ± SD	p value*
Academic Achievement (Total Average)	Deep	15.35 ± 1.31	
	Strategic	15.41 ± 1.51	0.1
	Superficial	14.81 ± 1.73	
Semester grade point average	Deep	15.29 ± 1.40	
	Strategic	15.34 ± 1.64	0.04
	Superficial	14.60 ± 1.72	

Discussion

The present study was conducted to identify learning approaches among the nursing and midwifery students and their academic achievement. According to the results, 60% of students used the deep approach. These findings are consistent with the studies by Mansouri et al.,[17] Shokri et al.,[19] Saif et al.,[1] as well as Gabriel et al.[20] while some researches have indicated that the surface approach is more utilized among the students.[21,22] The difference between the learning environment and their understanding of various scientific requests seems to be a major factor in these discrepant results. Many studies have shown that the academic achievement is higher among the learners who use the deep learning. Therefore, if a factor leads to deep learning, one can expect that the academic achievements improve.[9,15]

Based on the results, the semester average of nursing students was associated with their learning approach and those who used the deep approach to learning had a higher academic achievement. In a study by Shakournia, they found that the dominant approach was the deep one.[9] The results of another study indicated that the prominent approach of study among the medical students was the deep approach[20] which is consistent with our study.

On the other hand, there was no significant relationship between the interest in the field of study or its previous knowledge and the learning approaches. However, in the study by Mansouri et al.[17] and Salari et al.[14] a significant relationship was seen in this regard. Factors such the study time, university grade, acceptable rank to enter the university, students' attitude to the field of study and impact of professor can explain these differences.

The results showed no significant difference either between the semester average and learning approach. On the other hand, in a similar study, students with higher average and lower average utilized the deep and surface approaches, respectively.[18] Another research indicated the same results[17] which are not consistent with this study. Such difference can be due to the assessment procedures of professors, university and facilities of the place of education and various fields of study. A significant difference was seen between the semester average among the nursing students and learning approaches; the students with a higher average and lower average used the deep and surface approaches, respectively. On the other hand, no significant difference was seen between the semester average among the midwifery students and learning approaches.

No significant difference was found either between the educational year and use of learning approaches which is consistent with the research by Snelgrove et al.[22] However, the study by Mansouri et al.[17] suggested that the students with a higher educational year use the deep approach more. The reason for such difference can be the year of entrance, attitude of senior students to the occupational future, the place where education occurs and the professors' teaching styles.

There was a significant relationship between the places of residence and learning approach; the students living in the dormitory used the deep approach while the native students used the strategic approach more. It seems that the connection among the students and their effect on each other in resolving their defects are among these reasons. Meanwhile, the study by Salari et al. showed that students living in their home had significantly higher averages than those living in dormitory.[14]

There was no significant relationship between the learning approach and academic achievement. However, the study by Pirmohammadi in Kurdistan University suggested that the students who use the deep approach had higher academic achievements.[23] Various studies have shown a positive relationship between the learning approach and academic achievement, while a negative one between the surface approach and academic achievement.[17,19] The difference in results can be attributed to the field of study, place of study, and type of study.

Concerning the relationship between the learning approach and academic achievement, it seems that the way teaching procedures are applied, environmental conditions, internal motivation, use of main sources in study, pervious training experiences, perception of training environments, program design and standard assessment ways, congruence between the teaching style and assessment techniques, the way materials are transferred, and connection between the previous and new knowledge are all from among the effective factors in this area.

Acknowledgement

Conflict of Interest

The authors declare that they have no conflict of interest.

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