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The Role of Critical Thinking in the Educational Progress of Nursing University Students

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Critical thinking can lead to the educational progress of the students and improve their learning process. This research aimed to study the effect of critical thinking on the educational progress of nursing university students. This descriptive research has been focused on 110 nursing university students in Iranian Jiroft City. The needed data was collected using demographic questionnaire and California Critical Thinking Skills Questionnaire, and the students' average score of the educational semester was considered as the criterion for the educational progress. The collected data were analyzed using Chi square (X_2) test and T test. The mean of the critical thinking score was obtained as 11.49 ± 2.6 and the students' average score of the semester was obtained as 15.78 ± 2.1. The findings showed that there is no statistically significant relationship between the educational progress and the critical thinking (p= 0.61). Considering the results of this research and the learnability nature of the critical thinking skills, we have to attempt to improve these skills in the students.

Key words: California Questionnaire, Critical Thinking, Educational Progress, Nursing Students

The universities play a vital role in the process of the development of efficient human resources. One of the most important factors in evaluating the higher education that is considered as the main goal of the educational attempts is the educational progress of the students[1, 2]. Educational progress is defined as the scale of fulfilling pre-determined expected goals by the students being attained by their learning expertise[3, 4]. In recent years, the researchers have tried to identify effective variables in reforming the educational and class structure and consequently to promote the educational performance of the students. In this regard, one of the variables that must be learnt in any educational system is the thinking skill[5]. In education, the system has to reinforce the spirit of being open to criticism in the teachers and professors and the spirit of criticizing and scrutinizing in the students and learners because one of the main goals of the education is to nurture the way os critical thinking in the individuals[6,7]. Critical thinking is a discursive thinking about those problems that have more than a single solution. This sort of thinking is based on the reasoning and on making decision to do anything just after assessing the relevant issues and consideration to come to an objective result considering all effective relevant factors[8]. One of the important dimensions of the teaching and learning process is to increase and improve the students' thinking skills[9].

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Critical thinking has an important direction that reinforces the motivations of the students during their learning process and leads to their meaningful learning and the development of their particular skills for their future professions[10]. Some studies have found that the students' score of the critical thinking has a positive relationship with their educational progress[11-14]; while some other researchers have found no significant relationship between two variables[15]. The findings of Simpson, et al (2002) showed that the need for critical thinking in nursing is necessary in response to the rapid changes in the health care environments, and the nurses have to critically think in providing effective cares so that they can get ready to accept their roles and current issues in the health care systems[16]. On the other hand, Roding (2001) has studied the relationship between the tendency toward the critical thinking and the scientific successfulness of the nursing trainings. He showed that there is a positive relationship between the mean scores of the nursing trainings and the critical thinking of the nursing trainees[17]. Moreover, a study on the students of one of Sweden medical universities showed that it is not enough to train limited skills of critical thinking such as problem solving and decision making[18]. Generally speaking, the results of the researches show that the learners lack a desirable level of critical thinking[19-21]. This is while the results of Profito (2003) imply that the students have a desirable level of the critical thinking. It suggests that the classrooms have to move from the passive remembering-based programs toward the critical thinking as a component of facilitating the learning[22].

The complexity of the critical thinking implies that such thinking requires a long- term evolutionary procedure and it needs exercise, nurture, attempt and reinforcement during the time[10]. Since the understanding and studying the effective variables on the educational performance will lead to a better understanding and predicting the effective variables; and since focusing on these variables is one of the fundamental research subjects in the educational system, this study aims to focus on the role of the critical thinking in the educational progress of nursing university students.

MATERIALS AND METHODS

This study is a descriptive analysis on the nursing students of Midwifery and Nursing Faculty of Iran Jiroft University of Medical Sciences in 2013. The statistical population of the research included all nursing students and we conducted no sampling. The needed information and data were collected by a questionnaire designed in two parts. The first part of the questionnaire contained demographic information like the age, educational grade, gender, marital status, locality, total mean score, number of refused units, and the number of the conditional semesters. The average score of the semester was considered as the index for the educational progress. In this regard the average score of each student was divided into 4 quarters. First quarter (less than 14 out of 20) was defined as unsuccessful student and the fourth quarter (higher than 16.75 out of 20) was defined as the successful student while second and third quarters were considered as the middle student.

The second part of the questionnaire contained some questions exclusive to test the critical thinking skills, i.e. California Critical thinking Skills Test[23]. This test is an extended instrument for assessing the critical thinking skills in the students and includes 34 multi-item questions designed in 5 fields of critical thinking cognitive skills (i.e. analysis, evaluation, inference, induction, and analogy)[24]. In order to respect the moral issues, the participation was completely voluntarily, the questionnaires were filled anonymously, and the results were completely confidential. Moreover, we assured the participants not to record the results in their educational documents. In this regard, the collected data were analyses collectively. The collected data were analyzed using SPSS statistical software, Chi square (Xi_2) test, and T test.

Data analysis

In this research, 110 nursing students participated among which 47% were male and 53% were female. Age average of the participants was equal to 22.59 ± 2.9. The majority of the students were single (90%). Only 5.7% of the participants were employed. The average semester score of the students was obtained as 15.78 ± 2.1 and the mean score of the critical thinking skills was obtained as 11.49 ± 2.6. 74.4% of the students had a weak score in critical thinking. The score of critical thinking in

female and male students were 11.82 ± 2.5 and 11.98 ± 2.1 respectively which shows that there is no significant relationship between the critical thinking and the gender of the participants (p= 0.78). Moreover, the average semester score of the female and male students were 15.85 ± 1.2 and 14.99 ± 1.56 respectively which shows that there is a significant relationship between the average score and the gender of the participants (p= 0.000). The relevant results are shown in table 1. As the table 1 shows, there is no significant relationship between the students in term of their grade (p= 0.61). In sum, there is no statistically significant relationship between the educational progress and the critical thinking (p= 0.61). Table 2 shows the relevant results.

Conclusion and discussion

Although critical thinking and the semester scores significantly predict the educational progress of the students, but this research showed that the score of critical thinking has not a significant role in the educational progress; and there is no significant relationship between the components of the critical thinking and the educational progress of the students. These findings are consistent with the findings of Fasion (1992), Menga (2005), and Serap (2009)[25, 26, 27]. Moreover, in their research, Read and Kumery (2002) showed that although the students who have passed the critical thinking trainings have attained the essential skill of the critical thinking but no statistically significant difference was recorded in their educational progress[28]. In a research administered in Turkey, Ali Azar (2009) reported that there is no significant relationship between the strong critical thinking students and the weak critical thinking students with their educational progress[29]. Presumably such students do not look for their goals and needs in the predetermined goals and needs of the medical trainings (while the educational position is one of such goals) but they look for some goals that are different from the higher education goals. So the researchers have to focus on the goals and needs of such students because their opinions can be a very important source for identifying the weaknesses and strengths of the educational programs.

Another probable reason for the negative relationship between the critical thinking and the educational progress is that when their score of the critical thinking is higher than their educational progress, they will find less space for their educational progress and hence they rely on memorizing the educational materials in their assessments. There are not many researches that have focused on the importance of the critical thinking in and its effect on the educational progress. Yet most of such studies have confirmed the positive significant role of the critical thinking on the educational progress. In a research titled "the relationship between the progress motivation and the critical thinking", Samersi (2002) has reported a positive relationship between the progress motivation and the critical thinking[30].

In yet another research, Tesoui and Galo (2007) showed that the application of seminar method in training the skills of critical thinking can lead to educational progress of the students[31]. Yachin (1992) reported a positive significant relationship between the critical thinking and the

Table 1. Comparison of the average scores of the critical thinking and the educational progress of the students in terms of their gender

Variable	Gender	Mean and std. deviation	P
	Female	11.82 ± 2.5	0.78
	Male	11.98 ± 2.1	
Educationalprogress	Female	15.85 ± 1.2	0.000
	Male	14.99 ± 1.56	

Table 2. Mean and standard deviation of the scores of critical thinking and educational progress

Variable	Mean and std. deviation	Test result
Critical thinking	15.78 ± 1.2	p = 0.61
Educational progress	11.49 ± 2.6	

educational progress of the elementary students, high school students, and university students[32]. Saka (2009) concluded that there is a significant relationship between the critical thinking and learning styles on one hand and the scale of educational progress on the other hand. Moreover, he found that more curious students have more cognitive and metacognitive strategies and they are more successful in problem solving[33].

Other findings of our research showed that the average score of the critical thinking stands on the weak and medium level. This finding is consistent with Athari, et al. (2009), Bridgard (1998), and Zeng (2008)[34-36]. Additionally, in his research, Stone (2008) showed that all of his participants lacked the critical thinking[37]. The studies on assessing the critical thinking of the Canadian and Australian students have shown that most participants have had a medium to strong critical thinking skills, while their results are inconsistent with our corresponding findings[12]. Other findings of our research showed that there is not a significant difference between the critical thinking of different educational grades. This finding is consistent with the results of Porof (1997) and Kim (2013). These researchers had expressed that the change in the critical thinking is not the result of passing training courses[38-39]. But the same finding of us is not consistent with the findings of Baba Mohammadi, *et al*.[40].

In order to attain a successful and smart society, the high-level intellectual tendencies have to be considered as the promotion point of the educational system. With regard to the relationship between the critical thinking and the gender, we found that the total score of the critical thinking test has no significant relationship with the gender. This finding has been reported in some other relevant studies[13]. Other findings of our research confirmed the significant difference between the male and female students in terms of their educational progress in which the educational progress of the females is higher than the males. This finding is consistent with the Shrod's study (2009)[41].

The educational system needs more studies on the ability of critical thinking in the nursing students in order to describe the problem and to provide the strategies of learning and teaching in which the critical thinking is developed and reinforced actively in the students[9]. The variable of the educational progress is multidimensional and is affected by several factors. Critical thinking is one of the basic factors that can directly affect the educational progress. The educational system can employ the results of such researches to come to a better programming and to promote the quality of the education and to reform the teaching methods and to improve and reinforce the force of the critical thinking in the development of the medicine.

In sum, the results of this research showed that there is no statistically significant relationship between the critical thinking and the educational progress. The critical thinking has not significant difference in the males and females, but there was a statistically significant relationship between the educational progress and the gender, in which, the female subjects had a better educational progressT.

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