

The Effects of Blended Learning in Nursing Education on Critical Thinking and Learning Satisfaction of Nursing Students

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Abstract. This study is a pre-post design experimental research on a nonequivalent control group with the aim of identifying the effects of blended learning in nursing education on critical thinking and learning satisfaction of the nursing students. The research subjects were 79 second-year nursing students of K University in G region, composed of 39 students in the control group and 40 students in the experimental group, gathered through convenience sampling. The two groups equally went through the pre-test using the questionnaire for data collection. Afterwards, blended learning was applied to the experimental group for three weeks in total. The collected data was analyzed using the SPSS PC+20.0 for windows. According to the research, the experimental group that participated in blended learning had a statistically significantly high score for critical thinking ($t=-6.21$ $p<.001$) and had a high but not statistically significant score for learning satisfaction ($t=-.52$, $p=.683$). Given the research findings, it was determined that blended learning in nursing education was more effective in improving the critical thinking of nursing students than the existing nursing education curriculum.

Keywords: Blended Learning, Critical Thinking, Learning Satisfaction

1 Introduction

1.1 Research Background

In modern society, the kinds of the diseases of those in need of nursing care have become diverse, the severity of the diseases has become more acute and the medical environment has become more complicated. In addition, it is essential to clinical nursing to guarantee the safety of those in need of nursing care and provide them with high quality nursing care in the course of performing clinical nursing. To meet the requirements of society, nursing education requires the students to develop clinical nursing judgment and capabilities to a significant degree so that they can apply learned knowledge and technologies in order to address the health issues of those in need of nursing care [1]. Due to weaknesses of conventional education methods,

which teach by rote focusing on lectures and lack connection with and relevance to education content, and the lack of competence of nursing students in real situations because of repetitive training methods conducted in a passive manner, it is somewhat difficult to cultivate nurses who have the proper and adequate nursing capabilities required by nursing practice [2]. The new learning method is causing stress to students[3] and Self-directed learning through computer-based learning is reporting that can replace the clinical practice due to lack of experience[4]

Blended learning is regarded as a blended form of teaching methods and has been used by online educationalists in the U.S. since 2000[5]. Blended learning adopts various strategies depending on the educational subjects, including online learning strategies and offline assistive ways focusing on group activities. The use of blended learning is showing students a variety of advantages, standard patient learning and practice-based learning has been reported that improves the performance and skills of nursing students communication skills [6]. It is not easy to create or realize very big learning effects based on the fragmentary and uniform education methods in nursing education that requires correct understanding and judgement and integrated thinking about patients' conditions in the clinical field. Although there are a growing number of cases where teaching methods are blended and applied to learning in other educational fields, the researches on the effects or critical thinking of blended learning in nursing education are few compared to other studies. Therefore, this study aimed to identify the effects of blended learning in nursing education on critical thinking and learning satisfaction of nursing students.

1.2 Research Purpose

This research aimed to verify the effects of blended learning on the critical thinking and learning satisfaction of nursing students. The content included watching a simulation video on nursing skills, discussion class and application of nursing examples using standardized patients.

2 Research Method

2.1 Research Design

This study is a pre-post design on a nonequivalent control group to verify the effect of blended learning on the second-year students of a nursing university.

Table 1. Research Design for Experimentation

Group	Pre-test	Intervention	Post-test
Experimental group	E ₁	X ₁	E ₂
Control group	C ₁	X ₂	C ₂

2.2 Research Subjects

The research subjects were second-year students of a nursing university in G region, who have no experience of blended learning, focusing especially on urination nursing among the education items of basic nursing practice. Among the total four classes, two classes were assembled through convenience sampling and were assigned to the experimental group of blended learning and the remaining two classes were assigned to the control group that applied the existing autonomous practice of basic nursing. In the end it was determined that the experimental group be composed of 40 people and the control group be composed of 39 people.

2.3 Program Development Process

This research developed a blended learning program by selecting urination nursing as a learning topic from the book of goals of nursing studies. The blended learning program was composed of a catheterization video education in the first stage, a discussion class that supplements the video education in the second stage and clinical case application using standardized patients in the third stage. The program was provided for 6 hours in total, composed of two-hours of education for each stage for three weeks. In the first stage, the students watched a video on intubation of self-retaining catheter, developed focusing on the protocols of key nursing skills of Korean Accreditation Board of Nursing for five times, and pointed out and reviewed the errors of the theory and practice in the video. In the second stage, after discussing the errors and watching the video, the students freely expressed their ideas on the errors in the nursing treatment, developed cases and reproduced the procedure of catheterization. In the third stage, the clinical examples were applied to patients who have difficulties in urinating, using standardized patients and a nursing simulator.

2.4 Data Collection Procedures

This research was conducted in the order of pre-test, experimental treatment and post-test and the written consent of the research subjects participating was obtained after sufficiently explaining that they would remain anonymous and confidentiality would be maintained. The questionnaire was distributed to the subjects within the period of research accompanied with verbal explanation and filled out by the subjects in their own handwriting. The research subjects were 79 second-year nursing students of K University in G region gathered together through convenience sampling, and the control group was composed of 39 people and the experimental group was composed of 40 people. The subjects completed the theory class on techniques to facilitate urination lasting four hours during the basic nursing course. The two groups equally went through the pre-test. The experimental group adopted the blended learning method for three weeks while the control group received cases on difficulties in urinating and were provided with autonomous learning time. After the practice course, the post-test was conducted on both groups at the same time.

3 Research Findings

Table 2. Competence of critical thinking and satisfaction experimental and control group

Dependent variable	Groups	Pre-test		Post-test		t	p
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
critical thinking	Exp(n=40)	95.95	10.63	100.47	8.92	-6.21	<.001
	Cont(n=39)	96.43	11.83	96.92	10.63		
satisfaction	Exp(n=40)	38.95	9.86	41.85	6.83	-.52	.683
	Cont(n=39)	36.51	10.5	38.72	7.16		

4 Conclusion

It was established that blended learning in nursing education was more effective in improving the critical thinking of nursing students than the existing nursing education. Although there was no statistically significant difference in the learning satisfaction of the nursing students, the satisfaction score slightly increased. The reason why there was no significant difference in the satisfaction score between the two groups was thought to be that most of the students who participated in the research preferred learning through lectures and did not fully adapt to blended learning. Therefore, it is deemed necessary to provide education using the blended learning method on a continuous basis.

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