

# Development of Fundamental Nursing Instructional Teaching Media for Nursing Student of Suratthani Rajabhat University, Thailand

Nittaya Srisuk<sup>1</sup>, Nuchanath Wichit<sup>1</sup>

<sup>1</sup>RN, Ph.D. \*, Faculty of Nursing, Suratthani Rajabhat University, 272, Moo 9, Khuntale, Muang, Suratthani, Thailand, 84100

## Abstract

Nursing care is the core of any nursing education curriculum. Developing teaching and learning strategies to enhance skills development and response to student learning need is challenging for educators. This was a developmental study produced instructional teaching media. There were 95 seconds year nursing student participated in the study by using purposive sampling. The two focus group was conducted in order to gather the instructional media needed. The instructional media then was develop based on the student demanded. The instructional media quality was assessed by three experts and comprehensively assessed by nursing students and made amendments as suggested. Data were collect by using two research instruments consisted of 1) nursing practice assessment form 2) satisfaction assessment form. Data were analysis using descriptive statistic, and one sample t-test. The results revealed that the instructional media of fundamental nursing practice skills according to standard criteria greater than 80/80. The students had significantly higher mean score of fundamental nursing skills suctioning, dressing, and drug administrating practice than critical standard ( $t=13.63, 13.38, \text{ and } 19.89$  respectively,  $p<.001$ ). The findings suggested that the instructional media developing in conjunction with the student desired was effective in improving fundamental nursing skills and satisfaction.

**Keywords:** *Developmental research, Fundamental nursing, Nursing student, Teaching media.*

## Introduction

Despite, many recent advance technology, nursing students is still expect to provide a high quality of nursing care. Nurse educator is one of the most important facilitator responsible for improving their knowledge, skills and attitude to be a competent nurse in the future. Combining modern media with the spirit of the profession helps to develop the profession, resulting in safety to patients.

Fundamental nursing is the first course of the specific required courses for entering into nursing profession, it is the foundation for nursing students and for learning other fields in nursing. Teaching and learning management of this course consists of lecture, demonstration and reverse demonstration in the important nursing practice skills that must be done. Improper nursing practices may result in dangerous complications for patients.<sup>1,2</sup>

In Thailand, nursing educators are one of those who have an important role in supervising students both in the theory in nursing schools and the practice in hospitals. The teaching and learning management in the past focused on the demonstration of nursing practice skills. There were approximately 40-50 students or more per class and the reverse demonstration by students under the supervision of educators for each group. However, this teaching and learning management has

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### Corresponding Author:

**Dr. Nittaya Srisuk**

Nurse Educator, Faculty of Nursing, Suratthani

Rajabhat University

e-mail: nittaya.sri@sru.ac.th

Mob: +66 815386625

disadvantages: many students are unable to follow or remember correctly the steps demonstrated by the educator, and the demonstration to students with large groups makes it difficult for students to practice. In addition, the demonstration by different educator for each group affects the students' skills, including insufficient equipment, insufficient time, and failure to meet the individual need in education. Moreover, nowadays Thailand is one of the countries that experience shortage of nurses. Therefore, the government has implemented the nurse production policy to meet the need of society, resulting in an increase in the number of nursing students in all nursing schools.<sup>3</sup> All of these are challenges for nursing educators that need to bridge the gap between technology, and science and art of nursing theory. One way to connect 21<sup>st</sup> century nursing student with nursing education is through updated teaching media.<sup>4</sup>

Cognitive theory of multimedia learning is one of the theories that explain the use of technology in media production to promote student learning.<sup>5</sup> One of the examples of technology based on the cognitive theory of multimedia learning that effectively responds to the needs of students is a teaching video. It is a teaching media that contains both image and sound which are stimuli that are perceived by eyes and ears, helping to learn and remember better, so it can attract the attention of the learners very well.<sup>6</sup> The video can also be used as a media for developing psychomotor skills that are the heart of nursing skill<sup>1</sup>, with presentation of practical nursing skills that are similar to real situations, which can connect students through the learning experience presented through the teaching video. In addition, video media can respond to the learning style of students. Students can choose to view slowly, pause, repeat, or replay images as desired.

The systematic review exploring the use of video in teaching and learning clinical skills of nursing student revealed that video is a promising tool in enhancing the quality of nursing skills in the student.<sup>7</sup> However, evidence from review literature regarding this approach may improve nursing student clinical skills is lacking.

### **Objectives:**

1. To develop teaching videos on fundamental nursing practice skills for 2<sup>nd</sup> year nursing students, Suratthani Rajabhat University
2. To assess the effectiveness of teaching videos on fundamental nursing practice skills for 2<sup>nd</sup> year

nursing students, Suratthani Rajabhat University

- 2.1 To assess the effectiveness of teaching media on fundamental nursing practice skills according to standard criteria equal to or greater than 80/80.
- 2.2 To compare the average score of fundamental nursing practice skill and the passing score of basic nursing course.
- 2.3 Assess the satisfaction of 2<sup>nd</sup> year nursing students, Suratthani Rajabhat University, with the teaching media on fundamental nursing practice skills.

### **Method and Materials**

This was a developmental study consisting of two phases. In Phase 1, development of the teaching media. Phase 2 involves testing the feasibility of the preliminary teaching media. The population of 95 2<sup>nd</sup> year nursing students from the Faculty of Nursing, Suratthani Rajabhat University participated in this research. The purposive sampling was used. The population was divided into two groups. Group 1 was the informant who provided information on the needs for video media development. Group 2 was the students who assessed the efficiency of the media, and the field test with 95 students.

### **Instruments:**

1. Tool used in conducting the research is the teaching video development plan on fundamental nursing practice skills.
2. Tools used for collecting data are 1) general data recording form about students: gender, age, GPA; 2) nursing skill assessment form: for suction skill with a full score of 54, IV administration skill with a full score of 30, and wound dressing skill with a full score of 100. The answer format is a rating scale with 3 levels: 2 means the nursing skill is performed correctly and completely all steps; 1 means the nursing skill is performed correctly but not completed all steps; and 0 means the nursing skill is performed incorrectly.
3. Comment and satisfaction questionnaire on video media is developed by the researcher, consisting of 10 questions. The answer format is a Likert scale with five levels from the lowest satisfaction to the most satisfaction.
4. Questions for group discussion about the need for video media are the issues about format and topic to

be used for creating the video that can help students to practice fundamental nursing practice skills correctly and effectively.

The researcher gives three qualified educators the assessment forms of suction, intravenous drug administration, wound dressing skills, and questions for focus group discussion to consider the need according to the content of the assessment forms. It was found that IOC values were 0.73 for suction skill assessment form, 0.81 for IV administration skill assessment form, and 0.79 for wound dressing skill assessment form.

Participants were provided with verbal and written information on the purposes of the study, their right to withdraw without consequence on learning achievement, and assurance of confidentiality. Inform consent was obtained from each participant prior to the commencement of the project. The development of a teaching video on fundamental nursing practice skills are as follow;

**Pre-production phase:** The need for a teaching video on basic nursing practice skills was analyzed by using focus group discussion based on questions. The topics of basic nursing practice skills that students intend to be produced as video media are suction, intravenous drug administration, and wound dressing skills. After analyzing the result of focus group discussion, the researcher brought the result into the meeting of the fundamental nursing educators, and developed fundamental nursing teaching media by examining accuracy of the procedure to be consistent, and proceeded to organize the content according to the objectives, arranged the procedure and dialogue.

**Production Phase:** The video and audio are recorded by staff and by using devices of a news station in Surat Thani province. The nursing laboratory at the Faculty of Nursing, Suratthani Rajabhat University was used as the place for recoding the video.

**Post-production phase:** The researcher has asked three educators who teach the fundamental nursing for reviewing the content and the procedures, as well as for assessing the quality of media by using a media quality assessment form with questions about the objectives of course, techniques for shooting video, and techniques for producing audio description.

Next, the media edited by the qualified educators was brought to seven nursing students for watching,

and brought to the subgroup of seven students for testing by studying two times each video, and then the students practice the skills to be completed according to the schedule. The researcher and assistants observed the students' practical skills and then questioned their opinions. At the end of practice, the researcher asked the students to exercise the post-test according to the order at the end of the story, and determined the efficiency of media from the results in practicing and after practicing.

Field test was conducted individually, with giving 95 students enrolled in fundamental nursing. Those students would receive the videos after studying the theory, with demonstration by educators. These students have two weeks for study and practice before assessment of each skill. The educator's meeting before the assessment of each skill was held. The assessment of each skill was performed by using the assessment form inspected by the qualified educators. The students answer a satisfaction questionnaire for use of fundamental nursing teaching media at the end of the last skill assessment.

**Data analysis:** The general data of students and satisfaction were analyzed by a descriptive statistic. A comparison between the average scores of the nursing skills practice test and the passing criteria of 70% from 100% was performed. One-sample test for the mean was used.

## Results

The results of testing the overall media effectiveness showed that E1/E2 for suction skill was 84.37/86.00; E1/E2 for IV administration skill was 83.67/84.52; and E1/E2 for wound dressing skill was 83.50/85.40. In the field test, a total of 95 students was mostly female (97.89%), with an average age of 21.32 years old, and 43.4% of them had GPA scores between 3.0-3.49.

Result of the teaching media on the achievement of basic nursing skills of nursing students found that the highest score of suction skills was 53, representing 3.15%, with an average score of 46.58 (4.45); the highest score of dressing wound skill was 100 scores, representing 1.05%, with an average score of 85.42 (8.15); and the highest score of IV administration skill was 30 scores, representing 6.31%, with an average score of 26.62 (1.10).

The comparison result of nursing skill scores of nursing students after studying video media and the passing criteria using t-test (One-sample test for

the mean), found significantly higher mean score of suctioning, dressing, and drug administrating practice than critical standard ( $t=13.63, 13.38, \text{ and } 19.89$  respectively,  $p<.001$ ) as shown in Table 1.

The analysis result of the satisfaction on the developed media for nursing students are at a good level overall ( $\bar{x} = 3.76, SD = 0.21$ ). When considering each item, it was found that the item eighth: students can review lessons by themselves, had the highest average satisfaction ( $\bar{x} = 4.78, SD = 0.55$ ) and item sixth the image, sound of the media are clear: had the lowest average satisfaction ( $\bar{x} = 3.14, SD = 0.49$ ) as shown in Table 2.

**Table 1: Comparison of nursing skill scores of nursing students after studying video media**

Nursing skills (n=95)	Testing group		Passing Score (70%)	t-test	P-value
	Mean	SD			
Suction	46.58	4.45	38	13.63	**P<.001
Wound Dressing	85.42	8.15	70	13.38	**P<.001
IV Drug Administration	26.62	1.10	21	19.89	**P<.001

IV refers to intravenous

**Table 2: Satisfaction of using a basic nursing teaching media**

Questions	Mean	SD	Satisfaction Level
The media is interesting.	3.82	0.66	Good
Able to use the media for preparing the nursing practice in ward.	3.76	0.65	Good
Content presented is easy to understand.	3.52	0.54	Good
Time and content are appropriate.	3.82	0.66	Good
Image, sound and story are suitable.	3.86	0.60	Good
Image, and sound are clear.	3.14	0.49	Moderate
The content arrangement is appropriate.	3.88	0.65	Good
Students can review lessons by themselves.	4.78	0.55	Very Good
The media are suitable to be used in teaching.	3.84	0.58	Good
After watching the media, students are more confident in their practice.	3.58	0.60	Good
<b>Total</b>	<b>3.76</b>	<b>0.21</b>	<b>Good</b>

SD refers to standard deviation

### Discussion

The result of the research shows that a video type that students need for teaching and learning in fundamental nursing is a video demonstrated by the educator and it can be brought back to review anytime as needed. Conventional teaching method in the class room and laboratory demonstrations may be inadequate to support the need of today’s diverse student population.<sup>8</sup> This development of media focuses on the respond to the need of students corresponding to the adult learning theory and self-directed leaning – which said that adult learners focus on and study according to their own interests.<sup>9</sup> In addition, the need for animated media with

sound would help students learn better according to the Cognitive Theory of Multimedia Learning. Watching the nursing practice video demonstrated by the educator would support students to gain more confidence and clinical nursing skills.<sup>10</sup>

The study results correspond with the study results in the abroad, which found that the video as one of the effective teaching media to increase the academic achievement of nursing students.<sup>11</sup> The video-based teaching media helped the students to watch the content slowly, quickly, forwards, or backwards as often as needed and can be viewed safely in a controlled environment.<sup>10</sup> Chan<sup>12</sup> found that videos are preferred

by students as learning tools compared to other online learning media.

Overall satisfaction for use of the developed media for the 2<sup>nd</sup> year nursing students at Suratthani Rajabhat University was at a good level. When considering each item, it was found that item 8: students can review lessons by themselves, has the highest average satisfaction. This was in line with the other studies reported that the video teaching media increased students' motivation and self-ownership.<sup>1, 10</sup> The students commented that the media can be repeatedly viewed and helped them to be able to practice. However, the result found that the student had a lowest score on the quality of image and sound. It is possible that in the production phase on video recording had some noise because the laboratory room is not a sound proof room.

### Conclusions

The current study focused on developing the instructional teaching media underpinned by the theory and according to students learning needed. The findings demonstrated that students who watched the video teaching media had passed the standard skills assessment and contributed to their satisfactory. The findings of this study guided the nurse educators to further apply teaching media in nursing courses, to improve teaching and learning method, and promote life-long learning for nurses within Thailand and elsewhere.

**Ethical Clearance:** Ethical clearance was obtained from the Research Ethics Review Committee, Suratthani Rajabhat University, according to the Document SRU 2560/011.

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**Conflict of Interest:** Nil

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