ANALYSIS FOR DEVELOPING INSTRUCTIONAL MEDIA TO IMPROVE 21ST CENTURY SKILLS OF BACCALAUREATE NURSING STUDENTS DURING MATERNAL AND NEWBORN NURSING AND MIDWIFERY PRACTICUM

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Abstract

Maternal and newborn nursing and midwifery practicum is an important course for baccalaureate nursing students to practice maternal and newborn care. In the 21st century, nursing instructors should design instructional media focusing on learning processes and needed skills to promote lifelong learning. The aim of this research is to clarify the instructional problems and objectives, identify the learning environment, and determine nursing students’ existing knowledge and skills. Qualitative and quantitative designs were employed. In the quantitative phase, 133 senior nursing students who completed maternal and newborn nursing and midwifery practicum participated in the study. In the qualitative phase, 38 students were purposively selected to participate in four focus groups. Two instruments developed by the researchers were used for data collection: 1) Nursing Student Satisfaction Instrument to evaluate student's satisfaction toward the clinical manual used in this course and 2) a semi-structure interview guide for conducting focus groups. Qualitative data from focus groups were transcribed verbatim and analyzed by using content analysis technique and quantitative data were analyzed by using descriptive statistics.

The research results reveal that, overall nursing students have a good level of satisfaction with the clinical manual (M=3.90, SD=5.62). Considering each aspect, the highest score is in “Promote Learning Aspect” (M=3.97, SD=1.14), while the lowest score is in “Physical Aspect” (M=3.87, SD=1.57). Three guidelines for redesigning instructional media are 1) benefits of having the manual, 2) problems and obstacles in using the manual, and 3) expectations for future instructional media. The findings provide in-depth understanding about how a clinical manual promotes nursing students’ learning. They can be used to base ideas for designing attractive instructional media with informatics technology which encourages learners to enthusiastically seek new knowledge.

Keyword: Instructional media, Nursing students, 21st century

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Background and Significance of the Study

Computer technology and internet is playing a crucial role in changing teaching and learning patterns in the 21st century to more modern learning methods. It was stated in The National Education Act B.E. 1999, that educational revolution at all levels should be focused on curriculum improvement and changes of teaching methods to improve students’ skills, by using educational technology. Students should acquire enough knowledge and skills to use educational technology for seeking lifelong knowledge by themselves (The National Education Act B.E. 1999, 1999). These are relevant to 21st century learning styles that focus on learning community, education for all, all for education, learning how to learn, and co-operative and collaborative learning. Teachers must teach less, but prepare more experiences for students to learn. They teach students to use thinking processes, how to seek knowledge, and be able to use informatics technology to be innovative and build body of knowledge by themselves (Dachakupt & Yindeesuk, 2015). Lecture or traditional teaching styles, teaching nursing students to learn by heart, may result in most of nursing students to lack creative thinking, thinking skills, problem solving, how to seek knowledge, and promote lifelong learning (Sirisupluxana, 2013).

The theoretical part of the maternal and newborn nursing and midwifery course, in the baccalaureate nursing curriculum of nursing colleges under the jurisdiction of ministry of public health, is initially taught to junior students. After finishing this part, they will take its practicum in clinics. One study has found that, most of the time during their practice, students cannot remember content learned in the theoretical part. This causes them to lack confidence in provide nursing care and health education for clients. Some students have reviewed theoretical content ineffectively, therefore, they may be stressful, anxious, and downhearted (Waithayawongkorn, Somchock, & Wiangperm, 2013).

Maternal newborn nursing are new skills for junior nursing students. If they are not well prepared, they may be unable to perform health assessment for postpartum mothers correctly. This may result in late detection for postpartum complications such as early postpartum hemorrhaging, the major cause of maternal death worldwide and in Thailand (Bureau of Health Promotion, 2017: WHO, 2012). Postpartum can be considered as a critical period for women because they have to physically, mentally, and socially adjust to new roles after giving birth. Mothers who have gone through descent early postpartum care, but do not get appropriate health education and care at home, may lose confidence to play maternal roles and to nurse the newborn. This results in inappropriate newborn care behavior which could affect maternal and newborn health status (Manotham, Parisunyakul, & Sriporn, 2014).

In Boromarajonani College of Nursing, Nakhon Ratchasima, nursing students going to practice maternal newborn nursing and midwifery in clinics, will get pre-training for important skills. They will receive instructional media, and a hard-copy manual containing basic and important knowledge needed for the practice. They are told to have it with them every day when they work in the clinics. However, the researchers found that students barely used it. The researchers would like a study guideline to develop educational media appropriate to use during the practicum. The newly developed media should be able to increase learning activities, facilitate students to access knowledge, be easy to review content when needed, promote learning skills in the 21st century, and ultimately benefit the clients.
Research Objectives

To clarify the problems and obstacles in using instructional media while learning the maternal newborn nursing and midwifery practicum. Then finding ways to develop educational media for nursing students in the 21st century.

Methodology

This is the qualitative and quantitative research to analyze current use of instructional media, to improve 21st Century Skills of Baccalaureate Nursing Students during Maternal and Newborn Nursing and Midwifery Practicum.

Population and Sample

Population. Population was 151 senior nursing students of Boromarajonani College of Nursing, Nakhon Ratchasima in 2016 academic year.

Samples. Sample in quantitative part was 133 students and in qualitative part was 38 students recruited from 18 rotations of students practicing in postpartum units.

Instrumentation

Quantitative phase. The questionnaire entitled “Nursing Student Satisfaction on Nursing Practicum Manual for Maternal Newborn Nursing and midwifery” was developed by the researchers. It consists of 14 5-rating scale items. Content validity is established by five experts in maternal newborn nursing and instructional media development. Content validity index was excellent at .91. After the questionnaire was improved, it was piloted on 30 students and Cronbach’s alpha coefficient was satisfied at .83.

Qualitative phase. Semi-structured guideline for focus groups was developed by the researchers. Five questions were framed from literature review and 10 years of experience teaching in maternal and newborn nursing field by the researchers. The guideline was content validated by five experts. It composed of five questions as following.

1. What are benefits of the student nursing practice manual?
2. How do you feel toward structure and organization of the manual?
3. How do you feel toward corrections, concise content, and up-to-date manual?
4. How do you feel toward pictures sending message?
5. How does the manual stimulates your learning activities?
6. What is your expectation toward the future manual?’

Protection of the Rights of Human Subjects

The research was approved by the ethical review board of Boromarajonani College of Nursing, Nakhon Ratchasima. Participants were informed about research objective, procedure of data collection, benefit and risk of participating in the study, and confidentiality. Only pseudonyms would be used in the study, no real first and last names would appear in public.
They have right to participate or withdraw from the study at any time without negative affects to their study plans, grades, and evaluations. Audio tape recorded files, notes, and manuscripts would be destroyed after the study finishes. Transcripts would be kept in locked personal computer accessible by only the researchers. The potential participants would get a chance to discuss and ask questions about the study, before signing a research consent form if they volunteer to take part in the study.

**Data Collection**

Data were collected by the researchers as shown in following procedures

1. The researchers met the participants to explain how to answer the questionnaire and hand the questionnaire to them.
2. Participants were divided into 4 groups of 9-10 persons per group. The researchers and participants made an agreement about place, date, and time to conduct focus group.
3. Before focus group discussion, the researchers introduced themselves to participants. Participants who were willing to join the project would be asked to sign the consent form.
4. The researchers conducted focus groups using semi-structured interviews for around 60 minutes at Boromarajonani College of Nursing, Nakhon Ratchasiam.
5. The researchers digitally voice recorded and wrote field notes during the focus group with permission of participants.
6. After finishing focus group, the researchers checked for data completion. If there was uncompleted part, participants would be asked to fulfill the data. The researchers thanked participants for their cooperation.

**Data Analysis**

1. Satisfaction to student nursing manual analyzed by descriptive statistic
2. Digital voice recorded files were transcribed verbatim. Transcripts were analyzed by using content analysis. Obstacle, problem, and guided to developed instructional media were focused.

**Findings**

Findings will be presented into two parts for quantitative and qualitative data.

**Part 1: Quantitative data**

Overall satisfaction of nursing students toward the nursing students’ manual of maternal newborn nursing and midwifery practicum was at a good level (M=3.90, SD=5.62). The highest mean score was in subtopic “learning design” (M=3.97, SD=1.14), while the lowest mean score was in subtopic “physical design” (M=3.87, SD=1.57) as shown in Table 1.
Table 1: Mean and Standard Deviation of Satisfaction of Nursing Student toward the Practice Manual (N = 133)

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Mean</th>
<th>SD.</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical feature</td>
<td>3.87</td>
<td>1.57</td>
<td>High</td>
</tr>
<tr>
<td>Content</td>
<td>3.89</td>
<td>3.59</td>
<td>High</td>
</tr>
<tr>
<td>Learning Promotion</td>
<td>3.97</td>
<td>1.14</td>
<td>High</td>
</tr>
<tr>
<td>Overall</td>
<td>3.90</td>
<td>5.62</td>
<td>High</td>
</tr>
</tbody>
</table>

Part 2: Qualitative data

Three themes to improve instructional media emerged from the data: 1) benefits of having the manual 2) problems and obstacles in using the manual 3) expectations for future instructional media.

**Benefit of the manual.** Participants shared experience about benefits of the student nursing manual while practicing in the clinic.

**Work guideline.** The participants passed the theory part, but sometime were unable to remember how to perform nursing intervention. They thought that the manual was beneficial because they could quickly look at a nursing procedure when facing needed situation. “It was like our work guideline which told us what to do. It showed conclusion of what was really needed to be done in the clinic. The content was practical to apply in real situation in the ward” (Female, Participant 1) “When we forgot learned content, we could open and find the information. It was like this manual keep only important content that we can find answer from” (Female, Participant 4) “It was to keep important contents. Some of my friends said that the manual was not in detail, but it summarized needed content to answer teachers’ questions” (Female, Participant 17)

**Benefit to mental health.** Nursing students like to carry the manual to the clinic more than other textbooks, because it contains summarized short content suitable for nursing practices. Have the manual with them in the clinic warms student’s heart, giving the sense of confidence that can review needed content at all times. “It benefits my heart. When I practiced in some wards where manual was not provided, I felt like I was floating into that clinic” (Female, Participant 14) “Having the manual in hand helped me feel relieved. I could open it all the time (laugh). However, we were unable to open it when we were in the middle nursing care” (Female, Participant 14)

“It was very beneficial when I practiced in off-campus hospitals. Yes, sometimes we borrowed a lot of textbook from the library, but we barely open those. We preferred to open the manual. The borrowed textbook would be used only for writing a report. We are now in the senior year. Reading the manual recalled the memory of when we were practicing in the clinic”. (Female, Participant 22)
Problems and obstacles in using the manual. Participants mentioned problems and obstacles in using the manual as follows.

Size and physical feature of the manual. Participants thought that the size of the manual is too big and heavy to carry. Sometimes they felt reluctant to open it because it was too big. Used versions and design of the manual, as compared with nursing students from different nursing schools, also made them reluctant to carry it. They would like to be proud of it.

“Talking about its cover, it should be more attractive. Like when we carried it to a ward of off-campus hospitals. I would like my peers (nursing students from other nursing colleges) to think that OH! this manual was so beautiful” (Female, Participant 30)

“Its size should be A5 because it would be small enough to carry. Suppose that we forgot about contents, we could open it. (laugh). But it was so big, I didn’t dare to open it. The cover wasn’t attractive” (Female, Participant 18)

“Its size was too big. We had to carry many things to a ward. Sometime, I felt that it was too heavy. If it was smaller, it may look better too. When we were reading it, we would feel smarter. I saw other medical students reading a small book. When they opened it, I thought they looked good because the book was not too big” (Female, Participant 16)

Corrections, clarity, and up-to-dateness of the contents. Some content was not up-to-date. Fonts were not clear enough because the manual was copied with black and white ink. In some parts, the fonts were unable to be read clearly because they were italic and too condensed. Most contents were descriptive. Some pages had lost page number, so it wasn’t easy to find a certain page.

“Fonts inside the manual were not clear. The black ink was faded. It somewhat looked bad. Sometimes, we read it wrong because we were not reading it carefully. For pictures, I would like to see them in color especially the important ones” (Female, Participant 3)

“Talking about the up-to-dateness, I thought it was acceptable. In some content, for example, it had been changed. The manual was published in 2016, but we used it in 2017. Nurses in the antenatal care clinic said that like ‘it had been changed, didn’t you know that’. This might cause a mistake.” (Female, Participant 17)

“Most contents were narrative. Fonts were condensed, too condensed. It was not clear. When I would like to make a mark or note between lines, it was difficult. Some pages had no page numbers, maybe because how it was bounded. When I was looking for a certain page, I had to find a reference page to start from” (Female, Participant 19)

Pictures. Some pictures did not send clear messages. Some were too small, black, or clouded. Some students needed to find better pictures on internet.

Two students said
“If it was possible, I would like to have color pictures because some pictures in black and white could not be seen clearly. I fixed this problem by searching more pictures on internet”. (Female, Participant 15)

“Some pictures were too dark to identify what it was. I couldn’t tell. I would like it to have more pictures because I couldn’t understand narrated contents. Looking at pictures might help me understand the content better or could remember more. Anyway, if I really wanted to know, I would do a search on a computer”. (Female, Participant 18)

**Learning Promotion.** The manual barely stimulated learning activities of participants. Some would read it only when they were asked by teachers or preceptors. Two students said

“I, generally, barely read books. I would read when I had homework or when a teacher asked questions. I was not a person who would read every single page of the manual”. (Female, Participant 16)

“I, routinely, did not carry books to a ward. In case I needed to do so, it would be the manual of this course. It was like I felt relieved when I had it close to hands. When the teacher asked questions, it would be my priority to open. If I couldn’t find any answer, I would search on internet” (Female, Participant 4)

**Expectations for Future Instructional Media.** Participants talked about their expectations to their ideal manual as following.

**Apply modern instructional media technology.**

Instructional media should respond to students’ needs, such as learning media on mobile devices, animation, e-book, or files with attached images available for student to download. One student said “If we had a hard copy manual as well as an application, it should be nice. It also would be better if the application had animation and video while the manual had contents” (Female, Participant 17)

“I would like to have an application. It should, like, show big topics first and then subtopics such as ANC or PP. Then, we could be able to click on links after links in one application. It would be very convenient” (Female, Participant 24)

“Yes, you could create an e-book manual. Students who had an iPad with a big screen, they could easily open it. It also would not be heavy. We could open every page and be able to use a marker just like we used a normal pen to mark” (Female, Participant 22)

**Improve the Current Manual.** While some students would like to turn the manual from a hard-copy version into a digital version, others preferred to have the current one improved to a lighter version. That way it would be easier to carry. Besides, the new version should contain color pictures, clear fonts, up-to-date summary of contents, and beautiful design. One student said “I liked the current manual because I felt comfortable. However, more contents should be added. Its size should be smaller and easier to open. Pictures should be in color and clear”. (Female, Participant 14) Another student said “I would like the manual to be smaller, for I could
put it in the uniform’s pocket. The content should be summarized into forms that we could use it in a patient ward” (Female, Participant 6)

Discussion

The study reveals that the manual of Maternal Newborn and Midwifery Practicum for nursing students is beneficial. Participants mentioned that they used it to guide nursing practice and it was also their mental supporter. Although students have already learned theory of maternal newborn and midwifery, they may be unable to remember all important theory because this is their first practicum in the field. The manual is helpful to provide quick guides when students are facing nursing problems or asked by nursing instructors or preceptors.

The current manual has some issues to be solved. It is too big and heavy to carry every day to a ward. Its cover and organization are unattractive; therefore, it does not stimulate learning behavior. Examples of problematic issues are condensed and italic fonts, blurred or too dark pictures, lost page numbers, narrated contents, not up-to-date contents, and physical features. If the manual produced in smaller but stronger design, a reader may be perceived as a smarter student. The result from the satisfaction toward the manual questionnaire has shown clearly that physical feature earns the lowest mean score. This can be interpreted that physical feature is very important to nursing students. The manual should be one thing that they are proud of when they use it in the ward. Nursing students are also aware of its benefits to learning promotion, which they rated highest. The manual is necessary for the practicum, so that it should be continually revised and published. This finding is relevant to the study of Chantra and Sarakshetrin (2017) who explored learning characteristics of generation Y nursing students (aged 19-22 years old). They have found that nursing students in this generation, develop their skills by understand media and technology. They are more skillful in communication, so they perceive appearance as a crucial part for learning promotion and inspiration to learn.

Expectations of participants to instructional media in the future are that the use of technology such as educational application, e-book, or CD rom, to benefit learning activities should be used. Contents should cover all clinics (the ante natal care unit, labor and delivery room, and postpartum ward) in Maternal Newborn Nursing and Midwifery Practicum. Pictures in the media should send its message clearly. Files, video or animations should be attached and available for downloading when students want to review certain content. Chantra and Sarakshetrin (2017) found that present nursing students acquire skills of computing and ICT literary at a high level. They fluently use computer and technology to communicate. Applying technology to design teaching-learning activities will stimulate and promote students to learn. This is relevant with Dachakupt and Yindeesuk (2015) who believe that choosing technology appropriate for learning, to support and enhance effectiveness of teaching-learning design, will simultaneously develop students in multiple dimensions. Turner, Leunggratanamart, Niranrat, Jarnarerux, Wattanakull, & Reunreang, (2015) have also found that nursing students in all classes have 21st century skills at a good level for every item. So applying new educational technology will develop students’ skills for the 21st century.

Nursing students find knowledge and information easier and faster online because internet service is more effective and service fee is cheaper. However, participants are worried that searching online may cause clients, nurses, and health care staffs to misunderstand that
students seem to be focused on playing with the phone and ignoring clients. Because of that, the present hard-copy manual is suitable to use in the clinic. It only needs to be downsized, more attractive, modern, easier to carry, colored, clear fonts, and up-to-date contents.

Applying technology to create instructional media for nursing students in 21st century during their practicum should consider image of nursing profession. If nurses are perceived as bad images of the profession, or able to cause problems, they may feel low self-esteem and frustrated. This results in nursing students having low self-confidence or lack of confidence in the profession. Real image of nursing profession should be close to expected image in nursing students, so that the they can trust and be proud of their nursing profession (Sirirat, & Aonseng, 2012)

Participants perceive that complementing the hard-copy manual with educational technology will help students understand learning situations during the practicum. This agrees with Kunaviktikul, 2015) who stated that applying educational technology should be two-way communication because lecture is still important in some topics. During the practicum, instructors and students may set time and place for searching information and knowledge from internet or mobile devices. This will promote appropriate technology use and students feel more comfortable to do so.

**Recommendation**

1. Nurse educator should apply the finding to improve learning materials and instructional media for Maternal Newborn Nursing and Midwifery Practicum to promote their nursing skills and learning skill in 21st century.

2. Qualitative research should be conducted to explore nursing student’s thoughts and expectations about learning materials in other courses.

**Reference**


