

The Development of a Question-Embedded Movie Clips Learning Program for Therapeutic Use of Self and Communication in Nursing Students

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Abstract

Purpose: The advance in technology and software has revolutionized the way nurses acquire knowledge and skills. The primary aim of this study was to systematically develop an innovative learning program “Heart Talk” for nursing students using question-embedded short movie clips. The secondary aim was to assess the effectiveness of the learning program.

Design: The development of the learning program was guided by Gagne's instructional design model using 9-step plan of educational events. To evaluate the program's efficiency, a quasi-experimental study with a one-group-posttest-only design was used to examine students' learning outcomes and study experiences.

Methods: A convenient sample of 15 fourth-year nursing students was interviewed to get input information for the program development, and was invited to participate again for the initial test of the program's usability. After refining the program, another group of 30 fourth-year nursing students were purposively selected based on their grades on a designated class to participate in the test of program's efficiency.

Main findings: The effectiveness of the program was shown by the item-objective congruence (IOC) of 0.85 and an index of process and output efficiency (E1/E2) of 85.00/82.60. The student satisfaction level was strongly satisfied ($\bar{X} = 4.39$, $SD = 0.77$) with most students reporting positive experiences and an optimistic attitude toward the program. The students' report suggests that the learning program facilitate the integration of theoretical knowledge into clinical practice by simultaneously stimulating cognitive, affective, and psycho-motor learning domains.

Conclusion and recommendations: The learning program Heart Talk was shown to be effective for instructing students to accomplish the desired learning outcomes. Nurse educators should use this learning program that increase accessibility and appeal to young nursing students to help them transfer what they learned in classrooms into clinical practice.

Keywords: embedded question, learning program, movie clips, nursing students, therapeutic communication

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การพัฒนาโปรแกรมการเรียนรู้ด้วยคลิปภาพยนตร์แทรกคำถาม เรื่องการใช้ตนเองและการสื่อสารเพื่อการบำบัด สำหรับนักศึกษา พยาบาล

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บทคัดย่อ

วัตถุประสงค์: ความก้าวหน้าทางเทคโนโลยีและซอฟต์แวร์ ได้ปฏิรูปการวิธีการเรียนรู้ของพยาบาล การศึกษานี้มีวัตถุประสงค์เพื่อพัฒนานวัตกรรมโปรแกรมการเรียนการสอนภาษาใจ (Heart Talk) ในหัวข้อการสร้างสัมพันธ์ภาพและการใช้ตนเองเพื่อการบำบัดสำหรับนักศึกษาพยาบาล โดยใช้คลิปสั้นจากภาพยนตร์และคำถามสอดแทรกในคลิป และเพื่อประเมินประสิทธิภาพของโปรแกรมจากผลลัพธ์การเรียนรู้และความพึงพอใจต่อการใช้โปรแกรมของนักศึกษาพยาบาล

รูปแบบการวิจัย: โปรแกรมถูกพัฒนาขึ้นตามโมเดลการวางแผนกิจกรรมการเรียนรู้ 9 ขั้นตอน ของกาเย่ และทดสอบประสิทธิภาพโดยใช้การวิจัยกึ่งทดลองแบบกลุ่มเดียววัดผลหลังเรียน

วิธีดำเนินการวิจัย: เลือกกลุ่มตัวอย่างแบบสะดวกจากนักศึกษาพยาบาลชั้นปีที่ 4 จำนวน 15 คน ได้รับการสัมภาษณ์เพื่อนำข้อมูลมาใช้ในการพัฒนาโปรแกรม และร่วมทดสอบเบื้องต้นเกี่ยวกับการใช้งานโปรแกรมที่พัฒนาขึ้น หลังจากปรับปรุงโปรแกรมจนสมบูรณ์ ผู้วิจัยทดสอบประสิทธิภาพของโปรแกรมกับกลุ่มตัวอย่างนักศึกษาพยาบาลชั้นปีที่ 4 ที่เลือกแบบเจาะจงตามเกรดของวิชาที่กำหนด จำนวน 30 คน

ผลการวิจัย: โปรแกรมที่พัฒนาขึ้นมีความตรงเชิงเนื้อหา โดยมีค่าดัชนีความสอดคล้องความตรงเชิงเนื้อหาเกี่ยวกับวัตถุประสงค์ (IOC) เท่ากับ 0.85 และมีประสิทธิภาพตามเกณฑ์ โดยมีค่าดัชนีประสิทธิภาพด้านกระบวนการต่อผลลัพธ์ (E1/E2) เท่ากับ 85.00/82.60 ค่าเฉลี่ยความพึงพอใจของกลุ่มตัวอย่างต่อการใช้โปรแกรมอยู่ในระดับมากที่สุด ($\bar{X} = 4.39$, $SD = 0.77$) โดยส่วนใหญ่ให้ความคิดเห็นเชิงบวกว่า โปรแกรมช่วยให้ผู้เรียนสามารถบูรณาการความรู้จากทฤษฎีสู่การปฏิบัติทางคลินิก ด้วยการกระตุ้นการเรียนรู้ด้านพุทธิพิสัย จิตพิสัย และทักษะพิสัย

สรุปและข้อเสนอแนะ: ผลการศึกษาสะท้อนให้เห็นว่าโปรแกรมการเรียนการสอนภาษาใจมีประสิทธิภาพ สามารถทำให้ผู้เรียนบรรลุผลลัพธ์การเรียนรู้ที่ต้องการ อาจารย์พยาบาลควรใช้โปรแกรมการเรียนนี้ เนื่องจากสามารถเพิ่มการเข้าถึงบทเรียนและดึงดูดความสนใจนักศึกษาพยาบาลให้สามารถเรียนรู้เพื่อประยุกต์ใช้ความรู้ในห้องเรียนสู่การฝึกปฏิบัติทางคลินิก

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Background and Significance

In the field of mental health nursing, therapeutic communication skill is known to be the axis of nursing care. Despite being an essential competency, teaching therapeutic communication skills is found to be challenging by nursing educator. As communication with clients, especially when they are in the mental health clinical rotations, has been consistently reported by Thai nursing students and students elsewhere to be the major source of anxiety in clinical practice.¹⁻³ The anxiety can interfere with learning and makes it difficult for nursing students to build the skills, leading to poor performance and failed learning. Since developing clinical ability in mental health care can be difficult, nurse educators have to use of various instructional strategies and select appropriate teaching methods to achieve learning goals of students.

Therapeutic communication is defined as a purposeful, interpersonal, information-transmitting process in which nurses use specific techniques to help patients better understand their condition and be able to attain utmost health and wellbeing.⁴ As a dynamic and complex skill that involves much subtlety, nursing students need a strong understanding of fundamental concepts before being able to develop the sense of communication reasoning. The use of feature film in nursing education and training has been supported as an effective instructional method.^{5,6} A group of nurse educators even introduced the term

“cinenurducation”, a compound of cinema, nursing, and education, to refer to “an instructional method that uses films, or some clips, as a context in which students engage in a learning process that enhances competencies in nursing”.⁷ The use of embedded questioning techniques was found to improve the interactive videoclip features and increase student learning efficacy.⁸

Up to now, there is an expanding literature documenting the applicability of using movies in nursing education.⁹ Researchers found that film-watching experiences contributed positively to students’ learning process by increasing their level of knowledge, improving clinical performance, decreasing anxiety level, as well as creating an active, experiential, and reflective learning environment.¹⁰⁻¹² Although the question-embedded videoclips are found to be widely effective for clinical skills acquisition, its application in Thailand is still limited. Numerous strategies including standardized patients¹³⁻¹⁴, computer assisted instruction¹⁵⁻¹⁶, augmented reality¹⁷, and virtual reality¹⁸ were found for teaching therapeutic communication, but not the question-embedded videoclips. As current nursing students belong to the digital generation, they are avid consumers of technology and prefer an independent, less passive, and more visual and kinesthetic learning. The innovative online learning methods is, therefore, recommended for them.¹⁹ Given all the supporting evidence, it is clearly a call to explore the use of this teaching method in nursing education.

All essential features derived from the literature including student-oriented, context-based problem-solving, experiential, and reflective learning were identified to synthetically create a question-embedded movie clips learning program.

Objectives

The primary aim of this study is to develop an interactive web-based learning program using question-embedded short movie clips to illustrate therapeutic relationship and communication techniques to nursing students. The secondary aim is to test the program effectiveness by examining the content validity of the program from field experts and evaluating student’s learning outcomes and satisfaction after using the program.

Theoretical Framework

The development of the current learning program was guided by Gagne’s instructional design model. This model is based on the Condition of Learning theory that explains the information processing of mental events occurring when students are presented with various stimuli.²⁰ This model provides an instructional design framework for organizing learning tasks according to stimulus recognition, conditions for learning, and response generation. Focusing on the learning outcomes, a sequence of nine-step events is outlined to address key cognitive areas, ensuring that students stay engaged, informed, and effectively retain and apply new knowledge. Figure 1 shows brief descriptions of instructional events used in the current program.

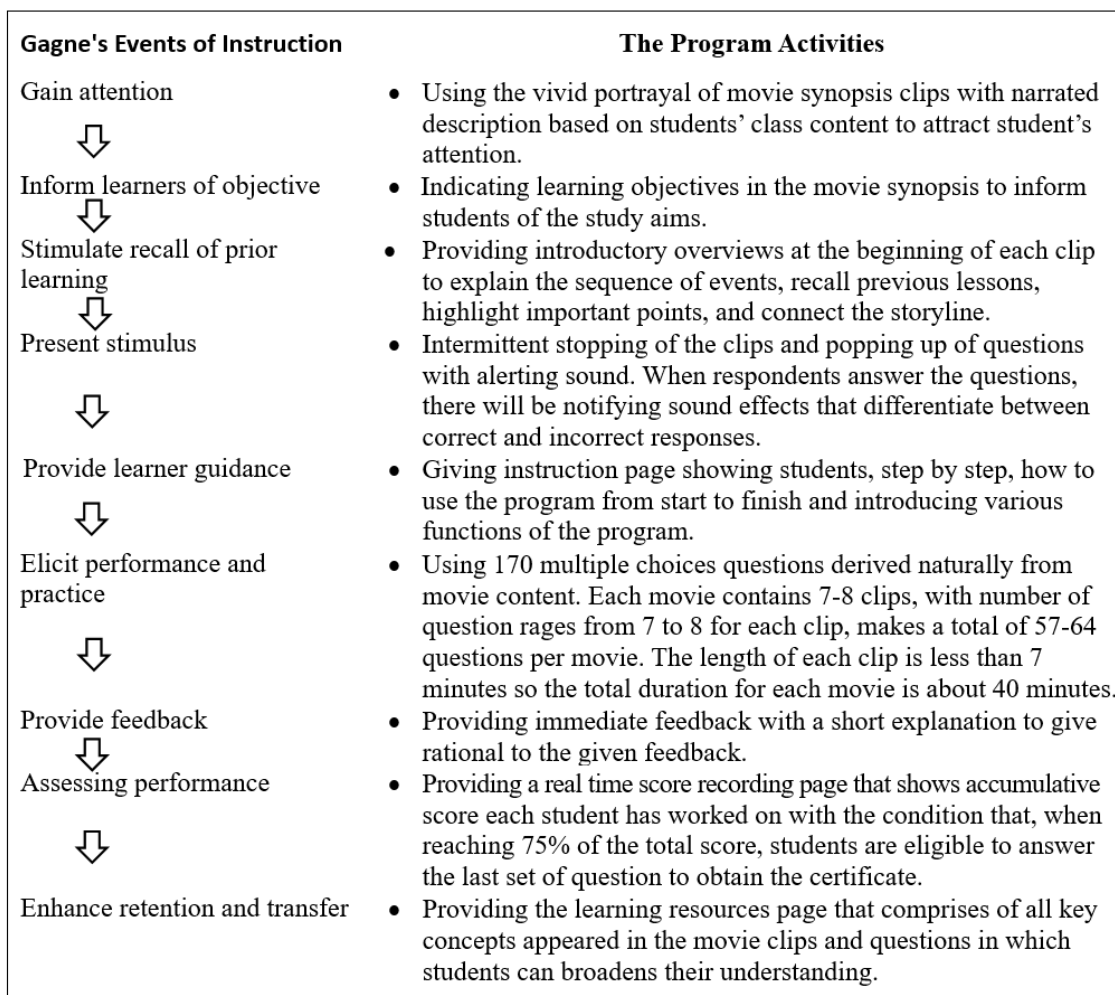


Figure 1: Gagne's nine events of instruction

Gagne's 9 events of learning are widely used by nurse educators and related health professions. Miner and colleagues found that the mean grade of the undergraduate nursing students improved significantly as a result of integrating Gagne's instruction into a 3-hour didactic course over a 3-semester period.²¹ A recent study reported the use of Gagne's instruction to successfully teach communication skills through role-play in phlebotomy education.²² Other studies also reported the effectiveness of applying of Gagne's instruction in clinical teaching to develop procedural skills²³, enhance clinical competency²⁴, and improved learning outcome in obstetric emergency management.²⁵

Methodology

The study procedure was divided into two phases of program development and efficacy evaluation. The development of the learning program according to Gagne's 9 events instruction were executed in phase 1. To examine the efficacy of the learning program, the study Phase 2 was conducted using to a quasi-experimental study with a one-group-posttest-only design.

Population and Sample

The target population of this study were the undergraduate nursing students in Thailand. The accessible population was undergraduate nursing students who were enrolled in the four-year BSN program at a university in the Northeastern region of Thailand at the time of the study. A different

group of participants were recruited for each phase of the study. For Phase 1, convenience sampling was used to recruit 15 fourth-year students from Faculty of Nursing of the University. With the assumption of the Central Limit Theorem for normality of sample size²⁶, another group of 30 fourth-year students was purposively recruited for Phase 2 and divided into three group with 10 each. These three groups were designated on the basis of academic performance of prior mental health nursing class, as higher achievers (class grades of A, B+), average achievers (class grades of B, C+), and below average achievers (class grades of C, D+).

Research Instruments

There are four instruments used for data collection.

1. A semi-structured questionnaire comprising five open-ended questions including: "What has been your experience in learning therapeutic use of self and therapeutic communication in the classroom?", "What difficulties did you have in learning therapeutic use of self and communication techniques?", "Can you think of any learning resources that best facilitate your understanding of therapeutic use of self and communication techniques?", "What learning activities do you think is necessary for student nurses to improve their therapeutic communication techniques?", and "We have discussed how best to learn therapeutic use of self and communication techniques; is there anything else you want to say?" The questions were verified by two nurses in their 10th year of experience as to the validity of the contents of the interview.

2. A 30-item multiple choice structured posttest questionnaire developed by the researchers was used to measure students' knowledge on therapeutic use of self and therapeutic communication upon the completion of the program. This questionnaire consists of three subscales measuring students' learning outcomes of memorization, understanding, and applied knowledge. Possible score range was 0 to 30 points, with higher score indicates higher knowledge. The content validity of the questionnaire was examined by three experts in psychiatric nursing field. The overall test item-objective congruence (IOC) of 0.83 indicating that the items were acceptably congruent with the objective of the study. The test-retest reliability was conducted three weeks apart with the 15 fourth year nursing students which yielded an intraclass correlation coefficient of .84.

3. An 11-item scale designed by the researchers was used to assess students' perceived satisfaction with the learning program. Each item featured a 5-point rating scale ranging from strongly satisfied to strongly dissatisfied. For content validity, Index of Item Objective Congruence (IOC) were rated by three experts in the field, yielding the scale-level content validity (S-CVI) value 0.90. The pilot test of this scale with 15 fourth year nursing students reported a Cronbach's alpha coefficient for internal consistency of .83.

4. Two open-ended self-reflective questions aiming to evaluate students' perceived strengths and limitations of the program in which students use their own words to articulate their opinion.

Ethical Consideration

This study was approved by the Center for Ethics in Human Research of the study University (No. HE662147). To ensure the conditions free of coercion and undue influence, one of the research team (JS.), who never had any personal or academic contact with the students provided the research information to the class. Informed consent was obtained online with recorded timestamp. Participated students have the right to withdraw from the research project at any time without any academic consequences. Data were collected in an electronic format and stored on a secure computer server. Only the research team could access to study data.

Data Collection

In Phase 1, a two-hour group discussion led by the two researchers using a semi-structured questionnaire consisting of five open-ended questions was conducted with 15 participants to gather their opinions about using technology and media in psychology class. Results of the interview highlighted the need for clip-based study tools with interactive or simulation features. Then, the research team worked on organizing the structure and detail of the program including movie clips, tutorial questions and answers, and putting together to create interactive lessons using Adobe Captivate 9 software. Once 170 tutorial questions were generated and ensured the content validity by three experts in the mental health field, the same group of 15 students were asked to participate again in the test use for feasibility of the web-based learning program.

In Phase 2, the participants were 30 fourth year nursing students (25 women and 5 men) with the same age group (20-22 years). Their academic achievement (GPA) ranged from 2.75 and 3.47. All students had previous experience of using web-based interactive lessons but none of them had any experience on question-embed interactive video clip learning lessons. These students engaged in the 3-hour use of the learning program. Upon the completion of the learning program with a 30-minute break, the students were asked for online-administering the posttest questionnaires about the knowledge, satisfaction, and reflection.

Data Analysis

To examine program's effectiveness, the index of process and output efficiency was examined with the standard criteria set to be (E1/E2 = 80/80), while E1 was the percentage of students' average scores from tutorial questions and E2 was the percentage of their average posttest scores.²⁷ The mean and standard deviations of students' satisfaction scores were examined. Also, the thematic analysis of students' reflection was performed with a point of view of the third person, who was the expert in the field, to ensure verification of the analysis process.

Findings

Phase 1: Program Development

The result of phase 1 group interview revealed that many nursing students find learning interpersonal skills a challenge, and struggle to establish therapeutic relationships with patients. Thirteen students showed

negative perceptions of psychiatric patients and were a afraid to interact with them. All fifteen students felt that they had insufficient knowledge on the topic and were inadequately trained for clinical practice. They expressed that they had difficulty in learning through conventional instruction of the 60 minutes lecture and showed preferences for more innovative, interactive, and practice-based strategies. Key emerging themes included: not readily visible and hard-to-identify psychiatric symptomatology in psychiatric patients; absence of an extensive example for communication techniques; the absence of tangible indicators of what, when, and how to use specific communication techniques; fear of saying somethings wrong that will harm or stimulate patients' anger."

The results from group interview provide valuable input for the development of learning program. The current program was, therefore, designed with the aim of enhancing students' knowledge on therapeutic relationships and communication techniques. The literature reviewed was conducted based on the input from students and the "cinenurducation" was found to be an outstanding learning strategy for this matter.⁷ As movies can depict a wide range of topics related to psychiatry from symptomatology, coping strategies, to various modalities of psychotherapeutic treatments, the selection of the movies was based on their themes and contents illustrating key concepts of Peplau's theory of Interpersonal Relations.²⁸ Peplau's theory provides a framework to structure therapeutic nurse-patient relationship which is the crux of psychiatric

nursing. According to Peplau, the nurse-patient relationship evolves through three sequential phases of orientation, working, and termination. During these phases, the nurse assumes different roles such as a stranger, leader, teacher, resource person, surrogate and counsellor, in order to help patients adopting healthier behaviors. Many movies had been watched by the researchers; and then three movies, Good Will Hunting²⁹, Ordinary People³⁰ and the Prince of Tides³¹ were selected. These movies are highly acclaimed for educational use to portray therapeutic relationship and found to complement Peplau's key concepts. The Gagne's 9 events instruction were used to design the learning program.²⁰ Movies were strategically cut to short clips and only relevant content that matches learning objectives were extracted to facilitate student's appraisal of clinical relevance. Then, a set of 170 multiple-choice question was embedded into each clip to create active-learning experiences.

To ensure that the use of movie clips operates under fair use regulation guidelines and the Technology Education and Copyright Harmonization Act (TEACH Act), the researcher adhere to certain restrictions as followed. Each movie clips have the length of about 5-6 minutes which is less than 10% of the total length of the film. The recording being used is a legitimate copy. The clips were strictly used in a classroom setting with limiting access to those enrolled in the class, restricting use to class time, informing students of copyright laws, prohibiting copying outside the constraints of the class, and not tampering with copyright protection mechanisms as part of copying. The showing of movie clips is not

advertised and not charged and there are citations to give intellectual credit to all production companies.

Program Output

The current learning program consists of tutorial clips from three movies, which each movie contains 7-8 consecutive clip lessons congruent with usual numbers of psychotherapy sessions. There are 7-8 questions naturally derived from story content of each clip, making a total of 53-62 questions per movie and 170 questions for the whole program. The following figure depicts how the program operates in sequential order (see Figure 2). First, the assigned URL directs students to the login page which only enrolled students receive usernames and passwords. The passwords will be expired within three hours congruent with class time. Once logged in, students will be in main page where they can select the movie clip they want to study. They can also consult learning instructions to guide them through. When starting the lesson, the video clip will play and pause at specific points demanding students to answer questions. The automated feedback with short explanations will be provided for both incorrect and correct answers. Locked lessons will remain unavailable until all prior lessons are completed. Students can check their progress on the real time scoring page. When their scores reach 75% of the total score, they would be eligible to answer the last set of questions to get certificates. There is also administrator function for teachers to manage all user accounts, granting or rejecting login requests, and monitor students' score to give feedback.



Content Validation of the Program

Three experts in the field, including two university lecturers whose teaching experience were more than 15 years and a psychiatric nurse who have worked with psychiatric patients for more than 20 years, were asked to review each question in terms of whether or not it measures the target construct using the index of item-objective congruence (IOC) measurement.

There were originally 176 questions categorized into 12 topics reflecting key concepts students need to learn to meet class objective. Out of 176 questions, 12 were rated below .50 IOC score and only 6 questions were rewritten and kept, making the final number questions to be 170. As shown in Table 1, the mean scores of the IOC index rated for each question categories range from .78 to 1.00, with the overall mean of .85, which was at an acceptable level.

Table 1: Results of IOC indices of heart talk and lesson questions

Content objective (Number of questions)	Mean IOC
1. Therapeutic use of self (14)	.85
2. Interpersonal relationship (16)	.82
3. Communication technique (50)	.83
4. Attitude (15)	.79
5. Emotion (10)	.85
6. Believe/thoughts (10)	.78
7. Defense mechanism (15)	.89
8. Psychoanalysis technique (9)	.79
9. Behavioral modification (6)	.93
10. Cognitive techniques (8)	.85
11. Humanistic techniques (9)	.87
12. Existential techniques (6)	.84
13. Non-therapeutic communication (2)	1.00
Overall Mean IOC	.85

Phase 2: Effectiveness of the Program

The findings revealed the efficiency value of the current learning program to be $\bar{X} = 85.00/82.60$.

As shown in Table 2, the ratio of performance scores (from study question embedded in the clips) and output scores (from the questionnaire) from all three movies were higher than the set criteria of 80/80.

Table 2: Efficiency implementation result of the learning lesson

Learning unit	Number of learners	Process score (E1)		Outcome score (E2)		Efficiency value (E1/E2)
		Score (\bar{X})	%	Score (\bar{X})	%	
1. Good will hunting	30	44.8 /53	84.5			84.5/82.6
2. Ordinary people	30	45.7 /55	83.1	24.8 /30	82.6	83.1/82.6
3. The prince of tides	30	54.3 /62	87.6			87.6/82.6
$\bar{X} = 85.0/82.6$						

The mean scores from three subscales of students' learning outcome were presented in Table 3, indicating the higher score on applied knowledge, memorization, and understanding, respectively.

As shown in Table 4, the overall mean score of

student satisfaction was 4.39 (SD = .77) with all satisfaction items were high, ranging from 4.00 to 4.80. Students were most satisfied with the learner's usability ($\bar{X} = 4.53$), with the learning content ($\bar{X} = 4.46$) and the system and function ($\bar{X} = 4.20$), respectively.

Table 3: Mean scores and standard deviation of the learning outcome subscales

Rating items	\bar{X}	SD
Memorization subscale	8.24	1.45
Understanding subscale	7.89	1.34
Applied knowledge subscale	8.66	1.42

Table 4: Mean scores and standard deviation of the satisfaction scale

Rating items	\bar{X}	SD
<i>Learning Content</i>		
The learning content adequately brings out the clinical relevance	4.1	0.76
The program's learning context was in line with the content taught in class	4.2	0.83
Level of difficulty of the learning content is suitable	4.0	0.68
I can gain knowledge of therapeutic communication from learning activities.	4.5	0.78
<i>Learner's Applicability</i>		
The learning activities help me develop useful skills	4.4	0.81
Learning activities prepared me for clinical learning experience	4.5	0.67
Learning activities help me to apply knowledge outside the classroom	4.7	0.72
<i>System Interface and Function</i>		
The use of the learning program is easy and applicable	4.3	0.91
The learning program has suitable tools for supporting my learning	4.3	0.87
The multimedia application helped me learn this topic in a new way.	4.8	0.74

Students' reflection on learning experience also revealed significant implications for teachers to design interactive learning program. Specifically, the strengths of the program found to be associated with its capacity to foster deep learning and enhance

memory content, reduce anxiety and increase motivation, as well as the simplicity of use. While the limitation of the program was associated with a small number of movies and technical problems (see Table 5 for the results of students' reflection).

Table 5: Reflective experiences reported after using the learning program

1. Strengths of the Web-Based Learning Program

Foster Deeper Learning and Increase Memory of Content

"By watching the movies, I get a vivid picture of how to talk with the clients."

"It makes sense with all that conversation in the movie, more than when it comes up in lecture as examples"

"I forget a lot of what I learned in lecture class, but I will never forget the "it's not your fault" scene."

"At the end of movie#1, I started to feel the change in me, I pause the scene very often, sometime just to look at the actor's face to figure out how he feels or to ponder what he might be thinking, and that takes me to another level of watching movie."

"It's amazing to learn that a simple scene can be very informative. If you really pay attention, there is so many underlying messages for just one sentence or a simple gesture."

"I learned that it's not just talking techniques that you need to consider, it's all you, your manner, your voice, your thoughts, your intention to help, and how you express it."

"I think it's a lot better than just watching the whole movie, short clips make it less exhausting and popping up of questions with answers helps me with a sense of what to look for or what's important."

Make Learning Fun

"Lecture can be boring, good movie's definitely not."

"it's both entertaining and educational, I love it."

"I enjoy study using multimedia, it brings hard to understand concepts come to live and you get it by seeing not by reading it from some books."

Help Reduce Anxiety and Increase Motivation

"My worries about talking to the patients decreased as I learned that therapists can relax and just be themselves, like Dr. Maguire. Well, I guess that because he knows what he is doing."

"The story is so touching; it makes me realize that words can be so powerful, makes me want to help someone with what I learned."

Table 5: (Cont.)

“I learn better with personal exercise because I don’t get embarrassed when my answer is wrong, I mean it’s kind of humiliating when the whole class knows that your answer is wrong.”

“It’s good to see how people with mental illness would behave in different situations, so I know what to expect when dealing with one. They can be violent, but it’s not out of the blue, there’s story behind it”

All in One with Simple and Easy to Use Features

“This program has it all, the story, the questions and answers, additional learning resources, plus certificates! But what I like the most is that it’s very easy to use.”

“I like it that the questions are short and easy to understand, also answer choices are pretty much the same, so by the time you are done with one movie it gets easier to do the next.”

“I like movie reviews and the overview before each session, it guides me through the whole exercise”

2. Limitations of the Web-Based Learning Program

A Small Number of Movies and Limited Study Context

“Three movies are good, but it should be many more because seeing the same technique using in different situation makes me understand what it really means and how to apply it.”

“The lead actor for all movies are male patients, so the movie with female patients should be added and also with different age groups and groups of psychiatric disorders.”

No Face-to-Face Communication with the Instructor

“Though there is answer guide with short explanations, sometimes I still don’t get it. So, if there is a function for posting messages asking for more clarification, or even get a real-time interaction with the instructor, will be really good.”

Technical Problems

“It’s hard to use from outside the university because you have to connect through VPN.”

“There’s a problem with graphic display sometime, especially when the internet speed is slow.”

Discussion

The overall results support the efficacy of the current learning program. The efficiency value of 85.0/82.6 exceeds the standard criteria of 80/80,

which means that the program is effective for instructing students to learn target materials. Also, the gap between E1 and E2 is less than 5%, implying that the program tutorial questions and the posttest are balance in terms

of their level of difficulty.²⁷ Students' opinion indicated that the vivid content of the movies helped them to memorize better, made them less anxious to encounter mental health patients, gave them a realistic picture of how to perform therapeutic relationship and communication, and even motivated them to use what they learned to help people with mental health problems. This hopeful feedback did not appear frequently in traditional class lecture, even with experienced instructors. The reported positive learning experiences corresponded with their highest scores on the learning outcome subscale of applied knowledge ($\bar{X} = 8.66$, $SD = 1.42$), while the memorization and ($\bar{X} = 8.24$, $SD = 1.45$), and the understanding subscale ($\bar{X} = 7.89$, $SD = 1.34$) were next in order.

Interestingly, students reported the highest levels of satisfaction with the perceived applicability of the content ($\bar{X} = 4.53$), while the system interface function ($\bar{X} = 4.46$) and the content of learning itself ($\bar{X} = 4.20$) were next in order. The outcome emphasized the importance of user interface design on learning experience and program's capacity to facilitate desired learning outcomes. By providing a user-friendly interface with intuitive navigations, simplistic activities, and a comprehensive learning content, students could easily access all features resulting in increased engagement and high satisfaction.

The finding suggests that the current learning program might be able to help students transfer didactic learning to practical application. The outcome

was consistent with a previous study that pointed out three teaching-learning strategies to be used with film for nursing education, comprising of reflective activities, practical activities, and evaluative activities.³² Movie scenes used in the current program were specifically selected to lead students to where they need to pay attention and the guided questions were organized to foster students' reflective activities. Also, using movie clips are especially advantageous for delivering practical activities as the imitated clinical scenarios allow students to conveniently identify with actors and stimulate their clinical judgement. Finally, the current web-based interactive learning program provided various evaluative activities including immediate feedback with short explanations, real-time scoring, and final summative test with certificates of accomplishment. This would be consistent with Gagne's Nine Events of Instruction.²⁰ Movie and other media are not inherently effective but has to be well designed to be fully exploit their possibilities. Putting interactive features to the movie clips using task-based approach might be able to bring the best out of multimedia use.³³⁻³⁴

The student's report of learning experience suggests that they achieved learning outcomes of the current class based on Blooms' taxonomy of learning.³⁵ According to this framework, learning outcome is categorized into three domains: the cognitive domain (knowledge), the affective domain (attitudes), and the psychomotor domain (skills). These domains are not

mutually exclusive. Rather, they complement each other to facilitate learning that progresses from basic to complex levels.

The cognitive domain, the first and most common hierarchy of learning objectives, is focused on intellectual skills. According to Bloom's taxonomy³⁵, there are six levels of cognitive complexity including knowledge comprehension, application, analysis, synthesis, and evaluation. In this domain, learners are expected to progress in a linear manner starting from remembering and ending at creating. While in traditional class lecture, the study feedback usually reflects only how much they understand what the instructors explained to them, the current feedback showed that students reached a deeper level of understanding. By saying that they could get a vivid picture of difficult concepts, students were applying abstract psychological notions to a more concrete movie context. By trying to make sense of the movie story, they were analyzing how those concepts were related. And by trying to figure out what the main character might be thinking or feeling, they were synthesizing what they learned to create hypotheses explaining the character's minds and behaviors. Consistent with previous study, this cognitive process allows student to hone their clinical judgment and make critical evaluation of the character's behaviors.³⁶ Consistent with students' reflections, the use of short videoclips with interactive features can reduce the cognitive load by segmenting complex ideas into small learning units and enhancing memory retention.³⁷

While emphasis is often placed on the cognitive domain, emotions are inherently linked to and influence cognitive skills. The affective mechanism is an integral part of the information processing system to create meaning. The affective domain focuses on the emotional and attitudinal aspects of learning which progresses from simple to more complex levels over time. Composed of five categories of receiving, responding, valuing, organization, and characterization, this domain links to ethical development and values acquisition of students.³⁸ For the current study, the receiving level was illustrated by students' perception of learning clips as "entertaining" and "not boring", indicating their attention and willingness to learn. The appreciation that "words can be so powerful" reflects students' responding to professional responsibilities. Also, realizing that "[therapeutic relationship] is not just about talking techniques but it's all you" demonstrates students' preferences for professional values and attitudes. Furthermore, student's remark of "it makes me want to help someone with what I learned" showed that students are progressing to adopt professional identity. Finally, by recognizing that "[people with mental illness] can be violent, but it's not out of the blue, there's story behind it", students were shown to develop ethical awareness and sensitivity. Findings from the current study support prior studies showing that movie clips can foster students' professional values and improve learning outcome in the affective domain.⁵

The psychomotor domain of learning deals with students' ability to physically accomplish tasks and coordinates the skills. As an instructional tool for lecture and pre-clinical class, the current learning program only aimed to set students' mental and emotional state for readiness to perform therapeutic relationship. The accomplishment of this goal was evidenced by students' reported experience of reduced anxiety and increased motivation to help others with what they learned. Movie clips help students manage their anxiety by providing cognitive rehearsals of encountering stressful situations. Also, the clips can draw students' attention to certain skills and deliver insightful guides of how to maneuver such skills in their own live context. Student's reflection of main characters acting as therapists with praised showed how they took them as role models. Congruent with previous study, movie featuring a potential role model are useful for building professional identity in young nursing students whose mindset are prevailed by feelings and visual impact.^{5,39}

Limitations

One notable limitation lies in the number of movies included in the learning program. There are only three foreign movies presented in the current learning program, in which main characters are predominantly males. To effectively facilitate the learning objectives, nurse educators should provide appropriate materials to make unfamiliar cultural contents comprehensible for the students. Another limitation is the exclusive focus on third-year nursing students. Extending research to different educational

levels and age groups would provide a more comprehensive picture of learning program applicability and effectiveness across various education backgrounds.

Conclusion and Recommendations

Although therapeutic relationship and communication techniques are the cornerstones of psychiatric nursing, cultivating these complex skills under limited time in clinical rotations can be challenging. The Heart Talk learning program enable students to engage in therapeutic relationships with patients in a simulative manner. The interactive features such as stopping and replaying videoclips, responding to embedded questions and getting feedback allow students to develop their own communication strategies. The current study findings provide evidence to support the effectiveness of using interactive question-embedded movie clips to enhance students' learning motivation and enable a deep understanding of abstract psychological concepts. The well-designed lesson plan could facilitate student learning by simultaneously stimulates cognitive, affective and psycho-motor learning domains.

The use of movies with specifically relevant content and embedded questions organized into inductive form is, therefore, recommended to help students interpret hypotheses, build explanations, and integrate theoretical knowledge into clinical practice. The interactivity enables students to be active learners who can integrate new information in their memory more than passive learners. For the current learning

program, the students indicate the need to have immediate interaction with instructors to clarify the unclear question response. There is, thus, opportunities to add more movie clips as well as additional interactive tools such as digital notes or mailing messages to instructors asking questions question or video fragment they did not understand.

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