


# Nursing Skills Video Selfies: An Innovative Teaching and Learning Strategy for Undergraduate Nursing Students to Master Psychomotor Skills

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## Abstract

**Introduction:** The quality of care for patients is linked to the performance and competence of nurses. Nurse educators are challenged to prepare graduates to deliver safe, competent, patient-centered care. Nursing skills video “selfie” is an innovative teaching and learning strategy in which nursing students use technology to create videos of themselves (video selfie) performing psychomotor skills.

**Method:** The instructional exercise of creating the video selfie was administered to a group of nursing students in a medical–surgical class. The laboratory instructors identified three psychomotor nursing skills. In the skills lab, the instructors showed videos to demonstrate how the skills were performed. The students returned demonstration in the lab and were asked to return to the lab independently to practice the skills and to create a video selfie.

**Results:** The exercise encouraged students to increase the quality and length of practice and master the skill. Students demonstrated confidence to perform the skills and to accurately list each step required to perform the skills. The video selfie was used as a peer evaluation tool and as a faculty assessment tool to guide individual students’ instruction, learning, and remediation.

**Conclusion:** The exercise had some shortcomings. Future quantitative research using survey instruments to collect data from a larger group of nursing students is needed to validate the utility of this innovative teaching and learning strategy in nursing programs.

## Keywords

nursing students, teaching and learning, psychomotor skills, technology

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The quality of care provided to patients in the hospital environment is strongly linked to the performance of psychomotor nursing skills by nurses, while the skills’ proficiency of the nursing staff is associated with health-care outcomes (Aiken et al., 2008, 2012; Bloomfield, 2010; Duffield et al., 2010; McHugh & Lake, 2010; Needleman & Hassmiller, 2009). Nursing faculty are charged with the responsibility to ensure graduate nurses attain the skillset knowledge and are competent with respect to the clinical skills (Barnsteiner et al., 2013; Cho & Choi, 2018; Sullivan et al., 2009). Faculty are challenged to locate, design, or create teaching and

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learning strategies that assist nursing students in attaining clinical skills proficiency in the clinical learning laboratory environment (Ball et al., 2015; Chicca & Shellenbarger, 2018; Gregory et al., 2014; Wilson et al., 2015; Young et al., 2014). The importance of skills competence is becoming more crucial as limited clinical placements and fewer nursing faculty shift the skills learning process from the healthcare environment to the clinical learning laboratory (Bensfield et al., 2012; Bloomfield et al., 2010).

To aid students in attaining psychomotor skills competence, deliberate practice is one principal method utilized by nurse educators (Clapper & Kardong-Edgren, 2012). Deliberate practice has been used by certified registered nurse anesthetists to achieve comfort and confidence in maintaining skills (Wiggins, 2018), by nursing students to gain competence in aseptic technique during urinary catheter insertion (Johnson et al., 2020), and in the online learning environment to help students develop critical communication skills using Situation, Background, Assessment, Recommendation (SBAR) (Yeh et al., 2019). More recently, nurse educators have been exploring new theories that include deliberate practice to prepare nursing students to perform skills safely both in the skills laboratory and in the clinical setting (Kardong-Edgren et al., 2019). Deliberate practice involves critical reflection and ongoing reflection. During the critical reflection phase, students pursue opportunities to improve skills performance when they recognize that skills need to be improved (Ericsson, 2008). During the ongoing reflection phase, students practice a skill until it can be completed with consistent success (Ericsson, 2008). The instructional exercise of creating video selfie encouraged students to use deliberate practice to master psychomotor nursing skills.

In the skills learning lab, lab instructors are responsible for teaching psychomotor skills to students. Lab instructors are regular full-time masters degree-prepared faculty. At the beginning of the semester, students signed a contract to make them accountable for practicing skills for a minimum of 10 hours for the semester. However, the laboratory instructors had no effective monitoring system to determine the amount and quality of time students spent practicing skills independently. In addition, lab instructors lacked an effective system to provide feedback to students after the initial skills demonstration. Traditionally, 1 to 2 weeks before the end of semester practicum, students returned to the lab to practice all the clinical skills learned throughout the semester. During the practicum, faculty noted that many students lacked the confidence to perform the skills and to accurately list the steps to perform the skills. Performing skills validation at the end of the semester did not facilitate student feedback and remediation. Consequently, graduate nursing students

were at risk of entering the nursing profession deficient of the knowledge and confidence to perform psychomotor skills.

Faculty and lab instructors were challenged through the New York City Nursing Education Consortium in Technology (NYCNECT, 2015) program to find a technological solution to a problem in our nursing program. The goal of the grant-funded project was to assist nurse educators to transform nursing education through technology integration in nursing education. A team consisting of one lab instructor, two clinical laboratory technicians (CLTs) and a registered nurse developed “nursing skills video selfie” (NSVS), to help nursing students master psychomotor skills. The primary purpose of the instructional exercise was to use technology (smartphones and iPads) to monitor the amount and quality of time students spent practicing psychomotor skills. However, the creation of NSVS evolved into an innovative teaching and learning strategy with enormous benefits to both faculty and students.

## *Theory*

The concept of mastering skills by creating the NSVS and deliberate practice is supported by Mayer multimedia learning theory (Mayer, 2005) and Kolb’s experiential learning theory (Kolb, 1984). Mayer’s theory proposes that deeper learning can take place with words and pictures as opposed to the sole use of words (Mayer, 2005). Kolb’s theory proposes that knowledge is gained through “grasping and transforming experience” through the concepts of understanding what is to be learned and by participating in the actual learning experience (Kolb, 1984). The instructional exercise of creating NSVS exemplified the elements from Mayer and Kolb theories in addition to the method of using deliberate practice to master psychomotor nursing skills.

## *Definition of Selfie*

A selfie is a self-portrait photograph, typically taken with a hand-held device like a digital camera or smartphone held at arm’s length (Oxford Dictionaries Word of the Year, 2013, p. 1). A selfie may be edited, stored, or shared with other individuals, usually after ensuring its acceptability. In this instructional exercise, instead of a self-portrait photograph, a self-made video was used.

## **Method**

The instructional exercise to create NSVS was administered to one skills lab class of 15 students. All students verbally agreed to participate in the learning exercise and to maintain confidentiality of the exercise. The lab instructor identified three psychomotor skills: (a) inserting a urinary catheter, (b) hanging or changing

intravenous fluids, and (c) performing a neurological assessment. The lab instructor chose the skills from the list of skills competencies established for the course. Moreover, the lab instructor considered the skills that students typically feared and had high risk of failure during the end of semester practicum. For example, students often failed at maintaining sterile technique when performing urinary catheter insertion. Similarly, students also described the assessment of the 12 cranial nerves as intimidating and challenging.

### **Intervention**

First, the students were given written instructions from the skills lab manual on how to perform each of the above skills. During the skills lab, the lab instructor showed videos of the skills to the students and demonstrated how the skills were to be performed. Students participated in a return-demonstration of the skills during the lab session. During the following week, the students were instructed to return to the skills lab during open lab time for independent practice and to create the video selfie while performing the skills.

On the day the students returned to the open lab time for independent practice and to create the video selfie, they were required to sign in and document the time at the start of the practice session and sign out at the end of the practice session. The students were given unlimited practice time in the open lab and determined their readiness to create the video. All students used, practiced, refolded, practiced, and reused the supplies. However, the CLT was present to distribute new supplies if needed. Students who did not have a smartphone available to them were given iPads owned by the department of nursing. At the outset, the CLT (whose job is to operate the laboratory equipment, manage the supplies, and assist lab instructors) provided the students with a pre-check list. The pre-checklist was similar to the “drag and drop/ordered response items” on the NCLEX examination (NCLEX Examination Candidate Bulletin, 2020) and contained a set of skills steps in random order. When the skills steps were placed in the correct sequence, the checklist accurately represented the sequence of the steps to completing the skill. Sequencing of the skills’ steps on the checklist was the first action completed by the students followed by creating the video selfie. The CLT verified that the checklist was completed but the lab instructor was responsible to determine the accuracy of the sequenced steps. After creating the video selfie, the students received a post-checklist from the CLT. The post-checklist also contained the skills’ steps in a random order. The students repeated the process of correctly sequencing the steps to accurately represent the correct order to complete the skills. The CLT collected all checklists and ensured

that students documented the time of departure from the lab.

Within 1 week of creating the video selfie, students uploaded the videos to a private video channel and sent the video to the lab instructor to access to the newly created NSVS. The lab instructor viewed each video selfie and, using a rubric, documented the strengths, weaknesses, and the areas needing improvements for each student. During a follow-up scheduled lab session, the lab instructor identified which and how many videos to show to the class of 15 students. First, the lab instructor requested the individual students in the video to perform a self-assessment of the video selfie. The self-assessment was followed by critique, peer evaluation, and feedback from the other students in the class. The lab instructor facilitated cordial respectful feedback by the students followed by a report of the faculty assessment.

### **Results**

Originally, the instruction to the students was to create a video selfie (each student recorded himself or herself while performing the skill). However, during the practice sessions, the students were noted to have difficulty creating actual selfie as holding the recording devices while performing the skills proved challenging and cumbersome. As a result, the students formed themselves into groups of three and naturally moved through three phases while creating the video selfie (Ericsson, 2008). The first phase, or the preparation phase, consisted of reading the skills laboratory manual which is a required textbook for the class. Students spent time reading the lab manual and audibly repeated the steps for the skill before creating the video. The students then moved on to the second phase where they assumed one of three roles (a) the narrator, (b) the performer, or (c) the recorder. In the second phase, one student narrated the skill step-by-step, while another student performed the skill and a third student recorded the video. Each student alternated to assume each of the three roles. When each student was comfortable performing the skill, the student moved into the final phase where the nursing skill video was recorded, without prompting by the narrator.

The greatest amount of time was spent in the final and third phase. After many video-recording attempts, the students uploaded their best videos to the private video channel. During the iterative process of creating the video, group members provided feedback while watching the video and learned from each other. The cycle of watching and rerecording of the video exemplified deliberate practice and Mayer’s cognitive theory of multimedia learning. The verbal repetition of the steps to performing the skills, coupled with viewing the video

selfie of the skills, helped the students to learn and master the skills.

### **Outcomes**

The teaching and learning strategy of creating NSVS was a novel teaching method that was not conducted using the formal research process. However, the learning strategy of creating NSVS encouraged students to return to the skills lab to practice skills within 1 week after the initial demonstration of the skill by the lab instructor. The NSVS increased the length and quality of practice time and fostered confidence in performing skills throughout the semester and at the end of semester practicum. The video selfie became a self-assessment and peer evaluation tool to empower students to master psychomotor nursing skills. The students mastered the technique of maintaining the sterile field required for urinary catheter insertion. Students also demonstrated competence in changing and hanging intravenous fluids. In contrast, the assessment of the 12 cranial nerve continues to pose a challenge for some students. As a peer evaluation tool, the video selfie also aided students in developing their critiquing skills in a nonjudgmental supportive environment. Finally, although this may be difficult to determine, the exercise may assist students to perform more efficiently on the drag and drop/ordered response questions on the NCLEX examination. From a faculty and lab instructor perspective, the videos proved to be a valuable monitoring tool to assess the length and quality of time students spend practicing skills. Faculty used the videos as an assessment tool to identify areas that need remediation and as a teaching tool to guide individual student instruction.

At the completion of the exercise, the logbook showed that students spent greater than 4 hours practicing each assigned skill prior to making the nursing skill video when they were accountable to spend 10 hours total each semester per the student contract. Students gained confidence through deliberate practice. The students' selection of relevant words from the skills lab manual for narrating, plus the organizing of selected words into the video presentation helped students to master the performance of the skill. Students who initially ordered the pre-checklist steps incorrectly were able to accurately list the steps in correct order on the post-checklist.

### **Discussion**

#### ***Lessons Learned***

Despite the increasing availability and widespread use of electronic devices, some students may not have access to smartphones and iPads. Therefore, some students may

need technological resources and support to complete learning activity. The lab instructor was required to spend a significant amount of time to review the videos as each video ranged from 6 to 12 minutes in length. Therefore, a skills lab class of 15 students required the allocation of between 90 and 180 minutes to evaluate students' performance of the skills. This writer acknowledges that some instructors may be uncomfortable with students using recording devices during scheduled skills labs sessions. In this exercise, the students used the recording devices in the open lab time only.

#### ***Strengths and Limitations***

There were several shortcomings in the instructional exercise of creating NSVS. First, as stated previously, a formal research approach was not used in this innovative teaching and learning strategy. Also, a small number of students (15) participated in the activity. Moreover, the original intent for students to create self-made video "selfie" in the true sense of the word was met with technical difficulties. Students were unable to independently use hand-held smartphones or iPads to record the selfie and simultaneously perform the nursing skills. Consequently, students formed three-member groups and rotated between the roles of recorder, performer, and narrator.

#### ***Implications for Practice***

Despite the shortcomings, the instructional exercise encouraged students to devote quality time practice and master clinical nursing skills. The exercise increased students' competence and confidence to perform psychomotor nursing skills. Finally, the videos assisted students to prepare for the challenging role of the graduate professional nurse in contemporary healthcare that demands skilled competent nurses.

#### ***Students' Reflections***

On the written reflections of the exercise, students expressed initial anxiety about being recorded on video. However, students reported that the anxiety diminished as they gained confidence in performing the skills. The learning activity was described as "amazing" but "time-consuming" by some students. Most of the students remarked that it was a fun way to learn and to master nursing skills.

### **Conclusion**

The use of NSVS may be used in nursing and indeed in any educational discipline in which the learning of psychomotor skills is critical. To corroborate, the utility of NSVS in the nursing curriculum requires its application

in larger groups of nursing students. Formal research approach is needed for validation. A quantitative study using survey instruments to collect data from participants is recommended.

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