Feedback on video skill: A concept analysis

Iris Epstein¹, Mavoy S. Bertram¹, Elisheva Lightstone², Thi Thanh Tuyen Pham¹,
Lilia Quach¹, Jarinca Santos-Macias¹, Karen Skardzius ¹

¹York University, ²Seneca College

Abstract: Increasing rates of mental health concerns are seen among youth in post-secondary institutions, particularly those enrolled in clinical-based health programs such as nursing. Nursing students are required to demonstrate skill competence for successful completion of nursing programs. Recent studies show that when students and faculty are engaged in video and audio recording of their own skills or co-creating video skills, many positive outcomes emerge, including a positive influence on their mental health. However, these videos skills are often overlooked by faculty. We explore the concept of “feedback on video skills” and its pedagogical and ethical implications for health and allied health practitioners within the context of flexible learning environments. Walker and Avant’s (2011) concept analysis methodology was used. We identified the quantitative attributes and characteristics of “feedback on video skills” and presented sample cases to illustrate the concept further and guide the design and application of an online feedback video toolbox resource. Feedback is an important dimension of video skill teaching and learning. While faculty (expert) feedback on clinical skills is paramount in nursing education, other forms of feedback can be as valuable. This concept analysis method highlighted quantitative elements of feedback but left gaps in our understanding of the social relations and ethical considerations involved in using video-recorded feedback as a pedagogical tool. We suggest to further consider the use of video-recorded feedback through the lens of socio-technical affordances.

Keywords: feedback on video; concept analysis; smartphone video; flexible teaching, scenario development

Abstrait: Des taux croissants de problèmes de santé mentale sont observés chez les jeunes des établissements postsecondaires, en particulier ceux qui sont inscrits à des programmes de santé en milieu clinique comme les soins infirmiers. Les étudiants en soins infirmiers doivent démontrer leurs compétences pour réussir les programmes de soins infirmiers. Des études récentes montrent que lorsque les étudiants et les professeurs sont engagés dans l’enregistrement vidéo et audio de leurs propres compétences ou co-création de compétences vidéo, de nombreux résultats positifs émergent, y compris une influence positive sur leur santé mentale. Cependant, ces compétences vidéo sont souvent négligées par les professeurs. Nous explorons le concept de «rétroaction sur les compétences vidéo» et ses implications pédagogiques et éthiques pour les praticiens de la santé et des services paramédicaux dans le contexte d’environnements d’apprentissage flexibles. La méthodologie d’analyse de concept de Walker et Avant (2011) a été utilisée. Nous avons identifié les attributs et les caractéristiques quantitatives des «commentaires sur les compétences vidéo» et présenté des exemples de cas pour illustrer davantage le concept et guider la conception et l’application d’une ressource de boîte à outils vidéo en ligne. La rétroaction est une dimension importante de l’enseignement et de l'apprentissage des compétences vidéo. Bien que la rétroaction des professeurs (experts) sur les compétences cliniques soit primordiale dans la formation en soins infirmiers, d’autres formes de rétroaction peuvent être tout aussi valables. Cette méthode d’analyse de concept a mis en évidence des éléments quantitatifs de la rétroaction, mais a laissé des lacunes dans notre compréhension des relations sociales et des considérations éthiques impliquées dans l’utilisation de la rétroaction enregistrée sur vidéo comme outil pédagogique. Nous suggérons d'envisager plus avant l'utilisation de rétroactions enregistrées sur vidéo à travers la lentille des avantages sociotechniques.

Resumen: Jóvenes estudiantes de educación superior experimentan cada vez un mayor número de problemas relacionados con sus salud mental, especialmente aquellos matriculados en carreras clínicas como la de enfermería. Estudiantes de enfermería requieren demostrar su destreza para completar de manera exitosa sus programas de estudio. Estudios recientes muestran que cuando los estudiantes y profesores usan videos de voz e imagen para
grabar sus propias habilidades o cuando crean juntos videos de sus aptitudes, esto conlleva a muchos resultados positivos, especialmente en lo que concierne a su salud mental. Sin embargo, estos videos no son tomados en consideración por parte los profesores. En este artículo nosotros exploramos el concepto de “retroalimentación y comentarios sobre videos de habilidades”, y las implicaciones pedagógicas y éticas para los profesionales de la salud, dentro del contexto de ambientes de aprendizaje flexibles. Aplicamos el método de análisis de concepto usado por Walker y Avant (2011). Identificamos los atributos cuantitativos y características del concepto de “retroalimentación y comentarios sobre videos de habilidades”, y presentamos casos para ilustrar el concepto en detalle y guiar el diseño y aplicación de una herramienta en línea sobre retroalimentación de video. La retroalimentación es una dimensión importante a considerar en el proceso de enseñanza-aprendizaje de los videos sobre habilidades. Si bien la retroalimentación que los profesores proveen a los estudiantes sobre su desempeño y habilidades clínicas es fundamental en enfermería, otras formas de evaluación son también importantes. El método de análisis de concepto subraya elementos cuantitativos de retroalimentación pero deja lagunas en nuestro entendimiento sobre las relaciones sociales y consideraciones éticas relevantes en el uso de retroalimentación sobre video como una herramienta pedagógica. Sugerimos considerar el uso de retroalimentación de video grabada a través del marco de sus propiedades socio-técnicas.

**Introduction and background**

Youth report an increase in performance anxiety when learning skills in health professional programs (e.g., nursing; physiotherapy; occupational therapy) (McNett, 2012). Skills refer to practice-based skills when body performance is required as well as communication skills. The increased number of health professional students, hospital restructuring, and patient privacy concerns have contributed to the limited placements in hospitals (Mastel-Smith, Post & Lake, 2015). This challenge then requires more flexible teaching of practice-based skills beyond the classroom and lab walls (Katz, 2013). Video and audio technology for practice-based skills (e.g., memory aid, note-taking tools; remediation) has increased (McCutchon, O’Halloran, & Lohan, 2018). Generally, youth are comfortable using the video recording features on their smartphones, yet feedback on clinical video skills and its implications are not well understood (Burgess & Mellis, 2015; Fidalgo & Thormann, 2017). When a student records themselves or is recorded by others for an evaluation, they can use the video to observe and reflect on how they relate to self, others, and the environment. Research on skill learning shows that feedback is not always given to students or sometimes feedback is too complex for student to make use of (Anderson, 2012). Our aim is to explore what we know about video feedback on youth’ practice-based video skills.

**Methods**

Walker and Avant’s (2011) 8-step concept analysis methodology explore the question what we know about the concept “feedback on video skills”. Concept analysis methodology can shed light on the ethical, practical, and educational attributes of a concept and develop model, borderline, and contrary cases to guide the development of an educational video skill resources. See Figure 1 for visual representations of concept analysis steps. Steps 1 and 2 focused on deciding on a concept and Justifying the Purpose. With increased availability and usage of video technology-based exploring the processes used for giving and receiving feedback when videos are used is important. Step 3 identify the use of the concepts. We used dictionaries and literature in the field of health and allied health (e.g., nursing, psychology, medicine, physiotherapy; occupational health) and information technology (See Table 1 for databases and keywords). A final yield of 21 articles were extracted. In nursing the term feedback and debriefing can be used interchangeably (Voyer & Hatala, 2015). Video recording feedback can be used to debrief a self-recorded skill performance (e.g., administration of injections (Hulsman & Vloodt, 2015) or to seek peers to provide feedback (Nesbitt et al. 2015). Thus, who provides the feedback, when, where and how it is provided are important factors to consider when providing feedback on video skills.
Step 4 identify the key attributes of the concept. We found the literature review frequently yielded concepts about feedback on video skills that included diversity of feedback terms such as time, form and place of feedback.

These made students feel more satisfied and performed better, and faculty reported decreased workload. Additionally, students were better able to self-reflect and express feelings and challenges beyond the technical aspect of the skill. Thus, the diversity of feedback facilitated relationships between student’s faculty and environment of learning. In the following section, we present the findings from our literature review.

Table 1. Databases and Keywords

| Databases                                 | Search Terms              | Results |
|-------------------------------------------|---------------------------|---------|
| CINAHL, Nursing and Allied Health Source  | skill feedback; “video feedback”, “clinical debriefing”; “skill video recording”; “smartphone video”, “nursing”, “practical skill feedback”, “formative skill assessment”; “health and allied health students”, and “education” | 21      |
| Medline (PubMed); ScienceDirect; NCBI and Scholars Portal Journals. | articles                  |         |

Findings

A. Relating: students’ skills and faculty feedback timing

Faculty feedback on students’ skills is an iterative process (Veloski et al., 2006). Yet timing of feedback was discussed 60% more frequently. Kneebone et al. (2002) conducted a qualitative study with medical students (2nd and 3rd year; n = 51) who recorded their urinary catheterization and wound closure skills. The students reviewed their skills videos and then received faculty feedback within five minutes. Students found this immediate feedback valuable. Similarly, Sainsbury et al. (2016) compared the skills of 3rd year medical students (n = 68) who received (a) immediate; (b) delayed feedback and (c) immediate and recorded feedback when performing laryngoscopy and tracheal intubation skills. The immediate and recorded faculty feedback led to significantly (p = .05) higher success rates (56%) compared to the other two groups (Sainsbury et al., 2016).

Alternatively, Noordman, van der Weijden and van Dulmen (2014) studied nurses (n = 20), who were video recorded while conducting patient care on two separate occasions (1-2 months apart). Half of the nurses received video feedback on their communication, competence, and motivational interviewing skills after the first patient encounter. Nurses in the control group (n = 10) only received video feedback at the last patient encounter. Noordman et al.(2014) found that delayed faculty feedback allowed nurses to reflect, and thus improve their performance compared to the group that only received feedback at the first patient encounter.
Labrusse et al., (2016) recorded first-year midwifery students’ (n = 51) clinical and communication skills and found a significant difference (p = .034) between the students who received immediate compared to delayed faculty feedback. The delayed group feedback (DGFB) occurred during a 2.5-hour session detailing the strengths, weaknesses, and competencies noted; while the immediate individual feedback (IIFB) occurred over 15 minutes and highlighted only three main competencies. Although the time difference between immediate and delayed feedback was not specified, they reported a significant difference in students’ satisfaction, where students in the IIFB group were more satisfied with the way that faculty gave feedback (p < .001) and the length of time in dedicated to students during the feedback session (p = .0003) in comparison to DGFB. Additionally, students felt the IIFB was more constructive than the DGFB (p < .001). Thus, immediate faculty feedback was perceived by students as more valuable, however, delayed feedback was as valuable if no other feedback was provided (Labrusse et al., 2016).

B. Relating: students’ skills and forms of faculty feedback

Diverse forms of feedback were also commonly (66%) discussed. With an increase in class size, diverse learners, and limited resources, faculty recording feedback (delayed; asynchronized) on students’ video or face-to-face skills have rendered positive relational outcomes. Naik et al. (2018) compared the effects of personalized narrated (voiceover) expert video feedback with no feedback on medical surgery trainees’ suturing skills (n = 56). The feedback group video recorded subcuticular wound closure skills three times at three-week intervals and submitted it via the online system for evaluation by an experienced staff surgeon. The surgeon provided personalized feedback using voiceover superimposed on the trainee’s video. The video with feedback was returned for review prior to an assessment activity – suturing simulation. In contrast, the control group did not video record their suturing skills and did not receive any feedback prior to the suturing simulation (Naik et al., 2018). A higher completion rate in all 4 skills in the surgeon-annotated personalized feedback group than the no-feedback group (82% vs 30%, p < .0001) was reported. Additionally, the feedback group completed the skills five times faster (p < .0001) and their suture quality was higher than the no-feedback group (p < .0001). Furthermore, the video feedback group improved significantly in checklist scores (mean difference = 2.0 of 11 points) and time to complete subcuticular skills (109 seconds) when compared to their first submitted video (Naik et al., 2018).

Several authors highlighted student satisfaction as a key outcome of video or audio recorded personalized feedback. Ice, Curtis, Phillips and Wells (2007) reported that students’ satisfaction with audio-recorded feedback was extremely high compared to students receiving written feedback only. The students felt the instructor cared more and were three times more likely to apply feedback when it was audio-recorded. Similarly, Myung et al. (2010) studied 3rd year medical students across three years (n = 499: with n1 = 169, n2 = 182, and n3 = 148 students in 2006, 2007, 2008 respectively) who video-recorded their history-taking and physical examination skills. Myung et al. (2010) reported that when student–simulated person (SP) encounters were recorded on DVD and students could review their performances with faculty (length of 30-60 minutes), approximately 10 minutes after student skill performance; the students rated the learning experience as satisfactory (87% of students across the three years).

In addition, students value faculty video feedback on written assignments in online courses (Harrison, Molyneux, Blackwell, & Wass, 2015; Ice et al., 2007; Moore & Filling, 2012; Ruesseler et al., 2017; Wood et al., 2011). In an online graduate course, Wood et al. (2011) surveyed nursing students (n = 50) (30 accelerated Bachelor of Nursing, and 20 Master of Science in Nursing) to study the impact of audio feedback on students’ writing skills compared to written feedback received in other courses. Most students (70%) understood the instructor’s feedback more clearly with audio feedback. Students considered audio feedback more personal than written comments (80%), felt more involved (67%), motivated in the course (60%), and felt they retained the content better (50%) (Wood et al., 2011).
Finally, students improved in performance skills after video feedback. Ruesseler et al. (2017) compared two groups of 4th year medical students (n = 125) on their history-taking skills of a surgical patient (group 1: oral feedback and group 2: faculty video-assisted feedback) before completing two objective structured clinical examinations (OSCEs). A significant difference in the performance of the skills (p < .001) by group 2 (video-assisted feedback) compared to group 1 (Ruesseler et al., 2017). Similarly, Truskowski and VanderMolen (2017) compared occupational therapy students (n = 57) performing range of motion and manual muscle testing skills receiving traditional (face-to-face/didactic) feedback with students receiving video-annotated delayed feedback. The video-annotated delayed feedback group showed significant difference in students’ skill performance when compared to the traditional feedback group. Students improved their positioning of patients (t = 2.314, df = 36, p < .026), use of proper body mechanics (t = 2.284, df = 36, p < .028), proper hand placement (t = 2.660, df = 36, p < .012), and completing transfers safely (t = 3.522, df = 28.565, p < .001). However, no significant difference was found between the groups for providing clear direction to the patient (t = 0.862, df = 36, p < 0.394) or for proper equipment setup (t = 0.181, df = 36, p < 0.858) (Truskowski & Vander Molen, 2017). When Harrison et al. (2015) surveyed 3rd year medical students (n = 92) who received audio feedback on their clinical skills in an OSCE. The students felt that the audio feedback was useful (90%), promoted better understanding of their strengths (83%), and areas of weakness (84%), changed the way they performed a skill (68%) and would guide future assessments (72%) (Harrison et al., 2015).

C. Relating to self and others in time and place

Some authors compared students receiving synchronous text-based faculty feedback and video communication feedback. They reported that the latter highlighted social presence and fostered better relationships with students, even in large classes (Henderson & Phillips, 2015; Moore & Filling, 2012; Seckman, 2018). In Seckman’s (2018) quasi-experimental study of nursing students (n = 100; 37 undergraduates; 63 graduates), higher mean scores overall for teaching, social, and cognitive presence in online communities were seen in the synchronized interactive video feedback group compared to the text-based group. Seckman (2018) also reported a significant difference in the community of inquiry questionnaire (measuring students’ social and cognitive presence) where students in the synchronized interactive video feedback group performed better (r = 0.788, p < .01). Similarly, in an online dental hygiene course, Molnar and Kearney (2017) also measured social and cognitive presence in (n = 15) undergraduate dental hygiene students. They were divided into two groups that alternated between asynchronous and synchronous video discussions. The synchronous discussions yielded more messages (260) in comparison with the asynchronous discussions (117). Molnar and Kearney (2017) concluded that the synchronous discussions achieved a higher level of cognitive presence (p = .005) and fostered better relationships between and among students and faculty when compared to the asynchronous discussions.

While recorded and/or synchronized faculty feedback supported students in feeling connected, incorporating peer feedback had the same effect and further decreased faculty feedback workload (Henderson & Phillips, 2015; Vaughn et al., 2016). Vaughn et al. (2016) compared surgical intern students’ (n = 12) peer feedback with faculty (n = 12) feedback in an experimental study. Students used video cameras or smartphones to record themselves performing knot-tying and suturing skills at home. The participants’ skills were assessed at 3 periods: at baseline, during and at the end of the curriculum which was delivered over a 12-week period. Both peers and faculty received de-identified videos which were then rated using a global score of 0 to 10 and a standardized checklist. There was no significant (p = .057) difference between peer and faculty rating yet both demonstrated increase performance over the course of the semester. Vaughn et al. (2016) suggested that the practice of reviewing and analyzing another’s performance can improve one’s own performance and relationships between peers.

Feedback and reflection are interconnected and important aspects of experiential learning. When nursing and medical students (n = 30) could self-reflect on their cardiopulmonary resuscitation skills using online video and written feedback there was a significant difference in performance (F = 4.644, p < .001) and students were more
aware of the different roles of the team (Bowden et al. 2012). In their self-reflection, students often focused more on the negative aspects of their video skills performance compared with peer feedback (Hulsman & Vloodt, 2015). Hulsman and Vloodt, (2015) and Kneebone et al. (2002) highlighted that self-reflection facilitated an awareness of one’s feelings. Nesbitt et al. (2015) conducted a randomized control trial with medical students (n = 32) who recorded their suturing skills. Students were randomized to three feedback groups: group 1 received traditional and general feedback using a 20-minute PowerPoint presentation; group 2 received a 20-minute unsupervised video-enhanced feedback (students reviewed their video performance together with an expert teaching video) and group 3 received 20-minutes of individualized video feedback (students reviewed their video performance with an expert tutor). Nesbitt et al. (2015) concluded that although all three feedback groups improved students’ overall procedural score (comprised of both a task-specific checklist and a global rating score), the improvement in the overall procedural score of students in group 3 (p = .001) was significant after a didactic lecture.

Most of the studies reviewed did not discuss what constituted student reflections. When students reviewed videos of their skill performance what emotions or thoughts were evoked? Feedback on students’ video skills should include an opportunity for them to express the relational and emotional aspects they experienced while performing the skills. The literature review did not indicate an ideal feedback method, yet using various forms of feedback for students on their video skills resulted in increased student satisfaction and improved performance (Harrison et al., 2015; Ice et al., 2007; Labrusse et al., 2016; Myung et al., 2010; Ruesseler et al., 2017; Truskowski & VanderMolen, 2017).

Most of the video skills recording studies were quantitative design and were done in a simulation lab using a camera (See Table 2). Students who recorded skills at home used their smartphone cameras (Vaughn et al., 2016), while some used recording technology from the school (Hulsman & Vloodt, 2015; Naik et al., 2018; Vaughn et al., 2016). When tasking youth with video assignments, it is essential that instructors consider access to and level of comfort using technology and providing clear and focused instructions (Pitts, 2015). Few studies explored the legal and ethical implications regarding who will watch the videos, and what will be done with them after they were reviewed. Hulsman and Vloodt (2015) discussed that only the students and invited peers or supervisors were able to access video record as the videos were uploaded to a password protected video server. Ruesseler et al. (2017) stated that video-recordings were deleted immediately after review. Anxiety experienced by students related to recording skills was highlighted by White and Le Cornu, (2017), and in the face of receiving negative feedback by Henderson and Phillips, (2015). Bowden et al. (2012) and Kneebone (2012) mentioned that some students felt embarrassed to be recorded but did not elaborate how this was addressed. Vaughn et al. (2016) reported that recording at home was perceived as stress-free by students. Therefore, recording video skills and/or receiving feedback create an element of anxiety and additional supports may be required to reduce the occurrence of such experiences.

Table 2. Description of Studies

| Majority (52%) | Most (40%) recorded |
|----------------|---------------------|
| quantitative design | video skill in a |
| simulation lab |

Forbes et al., 2016; Molnar & Kearney, 2017; Naik et al., 2018; Nesbitt et al., 2015; Noordman et al., 2014; Ruesseler et al., 2017; Sainsbury et al., 2016; Seckman, 2018; Truskowski & VanderMolen, 2017; Vaughn et al., 2016).

Bowden et al., 2012; Forbes et al., 2016; Hulsman & Vloodt, 2015; Kneebone et al., 2002; Myung et al., 2010; Nesbitt et al., 2015; Noordman et al., 2014; Ruesseler et al., 2017; Truskowski & VanderMolen, 2017).

Scenarios development

Walker and vant (2011) suggest to create cases that incorporate these attributes. In Steps 4 and 5 and 6 of their analysis they suggest to construct the model, borderline, and contrary Cases. A model case includes defining attributes of feedback on video skills. Julie is a senior nursing clinical instructor assigned to teach a
group of 50 second-year nursing students. During week five of the semester, after covering catheterization skills, Julie asked students to record male/female catheterization skills using their smartphones. This skill is technical (video recording skills; catheterization skills) but Julie also recognizes the important of addressing students feeling performing the skill (touching a patient’s genitals). The School of Nursing implemented an online resource toolbox to support students and faculty on how to use diverse video technology on practical skills. First, Julie anonymously surveyed and found that the majority of her students own a smartphone and are comfortable recording skills. Julie reviewed with students a decision-making tree on when permission is required to record others in their video skill frame. With her students, Julie reviewed videos storage principles and how to delete the videos. To motivate students, Julie allotted 10% of the total course grade to this assignment (relatively low stake marking given the novelty of the assignment); self-reflection and peer feedback each constituted 5%. Students completed their videos skills in the nursing simulation lab using the mannequins and equipment available. Each student watched their own video and that of a peer, then provided written comments on their performance of the skill and annotated their video with any feelings they experienced while performing the skill. At the end of the assignment Julie selected two videos to discuss with the class. The discussion focused not only on the technical skill of catheterization, but also on students’ reflections when performing skills.

A contrary case is an example, which does not illustrate the concept clearly and does not contain any of the defining attributes. Lorish is a nursing clinical instructor. One of Lorish’s students has failed the medication calculation skill twice. In lieu of a test, Lorish asked the student to record himself performing the skill and to email him the skills video for marking.

In step 7, Walker and Avant (2011) proposed that antecedents are the events that precede the occurrence of the concept. Three antecedents of feedback on video skills were identified: 1) a student and faculty must be present (virtually or face-to-face), 2) a clear communication of expectations of clinical skills must be included, and 3) understanding of participants’ digital characteristics (e.g., comfort and access to video recording technology) and availability of ongoing technical support. When students are asked to create skill videos a reward (feedback, mark) for motivation should be included. Finally, feedback on video skills will foster better relationships between and among students and faculty; improve skill competence; increase satisfaction in the learning experience; support safe and ethical practitioners and improve interest in using videos for learning and receiving feedback.

The last stages of the concept analysis method (Step 8) include establishing an empirical referent. Empirical referents measure the presence or absence of the defining attributes (e.g., diversity of feedback) (Walker & Avant, 2019). We propose that to provide diverse feedback on video skills students must be provided with timely technical and ethical support across places.

Given the subjective nature of some aspects of feedback on skills videos and constraints on time and place of courses, not all attributes of diverse feedback can be quantitatively measured. Exploring participants’ experiences of receiving diverse feedback on skills videos through interview probes leads to a better understanding of the relational aspects of the feedback from others, and the complexity of privacy and comfort while viewing and scrutinizing self-performing a skill in space and time. Quantitative measures can be used to study things like the number of errors in a skill performance checklist or participants’ demographic persona information (gender; age; ethnicity; geographical location). More qualitative data may be used to include changes students experienced in their skill performance, stress level
performing skills; satisfaction levels; and changes in ability to identify ethical concerns across time and place.

**Conclusion**

Concept analysis was used to explore what we know about feedback on skills videos. While the use of videos to support learning can offer a cost-effective and innovative alternative to conventional methods (Taslibeyaz, Aydemir & Karaman, 2017) the diversity of feedback is a key. Students and faculty need ongoing technical and ethical support. The model case scenario illustrates the value of such support. The results of this analysis are currently being used to inform the development of an online resource tool to guide faculty in creating meaningful video assignments for students and delivering effective and valuable feedback to enhance inclusion in nursing practice education. Research dedicated to the exploration of video feedback, is almost entirely quantitative in nature. While quantitative methods are useful they leave gaps in our understanding of the social relations, emotional and ethical considerations involved in using video-recorded feedback as a pedagogical tool. We suggest to consider the use of video-recorded feedback through the lens of socio-technical affordances. Originally coined by James Gibson (1977), affordances refer to the relationship between people and/or and the environment around them. The general premise is that the environment holds certain physical properties that suggest an assortment of actions for people who perceive them as such. General questions raised by this conceptual framework would be: What actions do students/teachers perceive are available to them when they receive/give video feedback? What actions do they take? The answers to these questions will address the gaps in our knowledge about using video-recorded feedback as a pedagogical tool and support student’s mental health during high stake clinical exams.

**Acknowledgements:** Funding for this research was provided by York University- Academic Innovation Fund: Category 1 – Academic Innovation Project (2018).

**References**

Anderson, P. (2012). Giving feedback on clinical skills: Are we starving our young? *Journal of Graduate Medical Education, 4*(3), 154–158.

Bowden, T., Rowlands, A., Buckwell, M., & Abbot, S. (2012). Web-based video and feedback in the teaching of cardiopulmonary resuscitation. *Nurse Education Today, 32*(4), 443–447.

Burgess, A., & Mellis, C. (2015). Feedback and assessments for clinical placements: achieving the right balance. *Advances in Medical Education and Practice, 6*, 373–381.

College of Nurses of Ontario. (2014, January). Entry-to-Practice Competencies for Registered Nurses.

Fidalgo, P., & Thorunn, J. (2017). Reaching students in online courses using alternative formats. *International Review of Research in Open & Distributed Learning, 18*(2), 139-161.

Forbes, H., Bucknall, T. K., & Hutchinson, A. M. (2016). Piloting the feasibility of head-mounted video technology to augment student feedback during simulated clinical decision making: An observational design pilot study. *Nurse Education Today, 39*, 116–121.

Harrison, C. J., Molyneux, A. J., Blackwell, S., & Wass, V. J. (2015). How we give personalised audio feedback after summative OSCEs. *Medical Teacher, 37*(4), 323–326.

Henderson, M., & Philips, M. (2015). Video-based feedback on student assessment: scarily personal. *Australasian Journal of Educational Technology, 31*(1), 51–66.

Hulsman, R. L., & Vloodt, J. V. (2015). Self-evaluation and peer-feedback of medical students’ communication skills using a web-based video annotation system. *Patient Education and Counseling, 98*(3), 356–363.
Ice, P., Curtis, R., Phillips, P., & Wells, J. (2007). Using asynchronous audio feedback to enhance teaching presence and students’ sense of community. *Journal of Asynchronous Learning Networks, 11*(2), 3–25.

Katz, J. (2013). The three block model of universal design for learning (UDL): Engaging students in inclusive education. *Canadian Journal of Education, 36*(1), 153–194.

Kneebone, R., Kidd, J., Nestel, D., Asvall, S., Paraskeva, P., & Darzi, A. (2002). An innovative model for teaching and learning clinical procedures. *Medical Education, 36*(7), 628–634.

Labrusse, C., Ammann-Fiechter, S., Eugenie, K., & Layat Burn, C. (2016). Impact of immediate vs delayed feedback in a midwifery teaching activity with a simulated patient. *British Journal of Midwifery, 24*(12), 847–854.

Mastel-Smith, B., Post, J., & Lake, P. (2015). Online teaching: “are you there, and do you care?” *Journal of Nursing Education, 54*(3), 145–151.

McCutcheon, K., O’Halloran, P., & Lohan, M. (2018). Online learning versus blended learning of clinical supervisee skills with pre-registration nursing students: A randomised control trial. *International Journal of Nursing Studies, 82*, 30–39.

McNatt, S. (2012). Teaching nursing psychomotor skills in a fundamentals laboratory: a literature review. *Nursing Education Perspective, 33*(5), 328–333.

Molnar, A. L., & Kearney, R. C. (2017). A Comparison of Cognitive Presence in Asynchronous and Synchronous Discussions in an Online Dental Hygiene Course. *Journal of Dental Hygiene, 91*(3), 14–21.

Moore, N. S., & Filling, M. L. (2012). iFeedback: Using video technology for improving student writing. *Journal of College Literacy & Learning, 38*, 3–14.

Myung, S. J., Kang, S. H., Kim, Y. S., Lee, E. B., Shin, J. S., Shin, H. Y., & Park, W. B. (2010). The use of standardized patients to teach medical students clinical skills in ambulatory care settings. *Medical teacher, 32*(11), e467–e470.

Naik, N. D., Abbott, E. F., Gas, B. L., Murphy, B. L., Farley, D. R., & Cook, D. A. (2018). Personalized video feedback improves suturing skills of incoming general surgery trainees. *Surgery, 163*(4), 921–926.

Nesbitt, C., Philips, A., Searle, R., & Stansby, G. (2015). Randomized trial to assess the effect of supervised and unsupervised video feedback on teaching practical skills. *Journal of Surgical Education, 72*(4), 697–703.

Noordman, J., van der Weijden, T., & van Dulmen, S. (2014). Effects of video-feedback on the communication, clinical competence and motivational interviewing skills of practice nurses: a pre-test posttest control group study. *Journal of Advanced Nursing, 70*(10), 2272-83. doi: 10.1111/jan.12376.

Pitts, K. (2015). New Epistemologies in a digital age: Ways of knowing beyond text-based literacy in young adult learners within an Ontario college context (Dissertation). York University, Toronto, Ontario.

Ruesseler, M., Sterz, J., Bender, B., Hoefer, S., & Walcher, F. (2017). The effect of video-assisted oral feedback versus oral feedback on surgical communicative competences in undergraduate training. *European Journal of Trauma and Emergency Surgery, 43*(4), 461–466.

Sainsbury, J. E., Telgarsky, B., Parotto, M., Niazi, A., Wong, D. T., & Cooper, R. M. (2017). The effect of verbal and video feedback on learning direct laryngoscopy among novice laryngoscopists: a randomized pilot study. *Canadian Journal of Anaesthesia, 64*(3), 252–259.

Seckman, C. (2018). Impact of Interactive Video Communication Versus Text-Based Feedback on Teaching, Social, and Cognitive Presence in Online Learning Communities. *Nurse Educator, 43*(1), 18–22.

Taslibeyaz, E., Aydemir, M., & Karaman, S. (2017). An analysis of research trends in articles on video usage in medical education. *Education and Information Technologies, 22*(3), 873–881.

Truskowski, S., & VanderMolen, J. (2017). Outcomes and perceptions of annotated video feedback psychomotor skill laboratories. *Journal of Computer Assisted Learning,33*(2),97–195.

Vaughn, C., Kim, E., O’Sullivan, P., Huang, E., Lin, M. Y., Wyles, S., ... Chern, H. (2016). Peer video review and feedback improve performance in basic surgical skills. *American Journal of Surgery, 211*(2), 355–369.
Veloski, J., Boex, J., Grasberger, M. J., Evans, A., & Wolfson, D. B. (2006). Systematic review of the literature on assessment, feedback and physicians’ clinical performance: BEME Guide No. 7. *Medical Teacher, 28*(2), 117–128.

Voyer, S., & Hatala, R. (2015). Debriefing and feedback: Two sides of the same coin. *Stimulation in Healthcare: Journal of the Society for Simulation in Healthcare, 10*(2), 67–68.

Walker, L. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing.* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

White, D. S., & Le Cornu, A. (2017). Using ‘visitors and residents’ to visualize digital practice. *First Monday, 22*(8).

Wood, K. A., Moskovitz, C., & Valiga, T. M. (2011). Audio feedback for students writing in online nursing courses: Exploring student and instructor reactions. *The Journal of Nursing Education, 50*(9), 540–543.

**Corresponding author:** Iris Epstein, Assistant Professor, School of Nursing, Faculty of Health, York University. 
ji Epstein@yorku.ca