Nursing Students Perceptions of Using YouTube to Teach Psychomotor Skills: A Comparative Pilot Study

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Abstract
Introduction: Current techniques to teach psychomotor skills to nursing students involve the traditional modeled performance by an instructor followed by rote memorization and practice. This outdated model presents many issues including no reference to refer back to, lacks technology integration, and only meets a few learning styles. A developmental study utilizing the social media platform YouTube was examined to gain student's perspective on this as a teaching tool to assist in skill acquisition.
Objective: Do nursing students, who are enrolled in a Bachelor of Science Nursing (BSN) program and who are taught psychomotor nursing skills via demonstration on the social media platform YouTube, prefer this technology to traditional demonstration, and to evaluate their overall perceptions of YouTube?
Methods: Data collection was done utilizing a nursing cohort enrolled in a BSN program. Participants were split into two groups. The control group was taught intravenous (IV) skills in the traditional teacher demonstration followed by practice. Experimental group was given access to a YouTube video series consisting of the identified IV skills. After testing for competency was concluded, control group was given access to the videos. A questionnaire was developed and sent out for evaluation.
Results: Participants reported that their preferred learning style when learning new nursing skills was visual (41.7%) followed by a combination of visual, tactile, and auditory (41.7%). All respondents (100%) reported YouTube videos increased their learning. Respondents (100%) also noted that having access to the videos better prepared them. In experimental group, all participants (100%) watched the videos, and in the control group, only (16.7%) of students watched the videos after the skill had been learned.
Conclusion: Results demonstrated that students prefer YouTube videos when learning new skills. They reported feeling better prepared to learn. YouTube is a potential way to increase skill acquisition and integrate technology into the nursing curriculum.

Keywords
nursing education, nursing, YouTube, skills, social media, psychomotor skills

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Introduction

A critical aspect of nursing education is teaching and demonstration of basic nursing skills. These essential psychomotor skills must be taught effectively for these new nurses to be safe in providing patient care. Current teaching strategies in nursing education are not meeting the needs of students while they learn these skills. There is a lack of technology integration, and technology is what the current generation of nursing students thrive upon. The current generation of students that are enrolled in colleges are termed millennials and postmillennials. Millennials are part of the generation Y, born between mid-1980s and late 1990s (Chandler &

Munday, 2016; Miller & Mills, 2019) and postmillennials are members of Generation Z, born from the year 2000 to the current year (Heery & Noon, 2017; Miller & Mills, 2019). These two generations of students' approaches to learning are unique and diverse, as they utilize technology as a primary learning tool. These students may gain more knowledge by watching video materials and prefer

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interactivity with people and technology. This preference of technology and interaction makes the traditional one-way teaching less appealing (Nicolaou et al., 2019). The failure to adapt and modify teaching strategies to meet the needs and desires of these two generations of students is apparent when examining how the teaching of basic nursing psychomotor skills is currently being taught. In a traditional approach, students observe a model, usually the instructor completing the skill. This approach is followed by rote memorization and repeated attempts to replicate the skills by the nursing students. This presents several problems such as a lack of engagement of the student, and no reference against which to check performance. In addition, the described traditional teacher-centered pedagogy way of skill acquisition suits only a few learning styles, which can cause issues with disengagement. According to Benner et al. (2010), there is a gap of knowledge between nursing education and performing these skills in practice. There are questions about use of the traditional face-to-face lecture followed by demonstration as the ideal method for teaching fundamental nursing skills (Bloomfield et al., 2010). As student nurses learn psychomotor skills, they aim to move from novice to experts in competency which Benner (1984) notes requires a significant amount of time. Gallagher et al. (2012) reported nursing students do not have prolonged exposure to clinical environment sites to become experts. With limited clinical times in varying environments, retention of knowledge and the ability to perform psychomotor skills also becomes an issue. In short, is there potentially a better method for teaching these important basic skills? This research study evaluated the use of a YouTube video series on IV skills to evaluate student perceptions of this teaching tool.

Literature Review

YouTube in Education

The social media site YouTube has immersed itself within the culture of the American Millennial generation. User-generated content has become extremely popular as an alternative to watching live news, opinion-related television, or sports due to instant gratification and instant circulation within moments of an event or uploaded video (June et al., 2014). YouTube and other social media sites have encouraged social interaction and participation for viewers that allows for both active and passive use. Khan (2017) surveyed 1,143 YouTube users and found users seek new information by viewing videos as well as reading comments that correspond with each video. According to the website Alexa.com which computes worldwide traffic among websites, YouTube is the second most visited website in the world (Alexa, n.d.).

Current literature evaluates YouTube as an educational tool, and the videos are used as a supplement to teaching and not a replacement. Participants in classes where YouTube videos were used reported enjoyment, class was fun and interesting, and some students reported they learned better in this format (June et al., 2014; McGovern & Baruca, 2013). June et al. (2014) interviewed 50 undergraduate students after YouTube videos were used in a course. It was reported that the students had a positive view on the use of YouTube, believed it made the class more fun, and attracted their attention (June et al., 2014). One particular student interviewed stated: in June et al. (2014): "In my opinion, watching video is one of the best tools that can bring relevant materials to the class and make it more interesting. Moreover, as students like to learn something new without feeling that they are being taught in the same way as lecture might…" (Reflection Student D, p. 63). Others have reported when YouTube has been utilized in the classroom, it induces critical thinking and students prefer to view videos with one of their instructors demonstrating or teaching (June et al., 2014; McGovern & Baruca, 2013). Although most of the literature is positive about the use of YouTube in education, there are some negative aspects as well. Cartledge et al. (2013) conducted a systematic review of the literature looking at social media usage in medical education. It was found in several studies that social media can present a problem to deliver educational materials as it solely relies on the engagement of the learners (Cartledge et al., 2013).

Millennials and Postmillennials

The current generation of students enrolled in nursing school is part of a unique cohort of students. In California's Bachelor of Science Nursing (BSN) programs, only 4.2% of students are greater than 40 years old (California Board of Registered Nursing, 2019). Millennial and postmillennial students represent the majority of nursing students today. Students now interact more with social media, computer screens, and mobile devices than they do with people. There is an increase in the use of social media applications and consequently, the use of mobile devices is now considered the new normal on how students live and learn throughout their daily lives (Montiel et al., 2020).

Members of Generation Z often have a mobile device and carry it with them at all times. Uses of mobile devices include social media, email, and texting. The mobile phone has now become an educational tool. Students use their devices to review lectures, slides, articles, and videos (Montiel et al., 2020). McGovern and Baruca (2013) implemented this concept and noted students' learning experiences were increased when videos were included as part of the class. The learning experience may elevate if the nursing faculty appears in the learning video (McGovern & Baruca, 2013). Without technology integration in the classroom, students are at risk for disengagement.

Students who are disengaged in the classroom report a dissatisfaction with how they acquire knowledge. Hassel

and Lourey (2005) reported disengagement of current students. In their study, 67% of respondents reported spending less than 4 h per week studying for a three-credit course, which is far below course expectations. This disengagement among students can be attributed to a multitude of causes. One example includes an incompatibility between current generations of students and traditional teaching methods. The current generation of college students has grown up with technology at their fingertips and expects instant gratification or results. Urick (2017) research has shown younger generations are much more comfortable with trainings utilizing technology more so than their older student counterparts. Finding innovative technology integration is essential to improve engagement and academic success. Elphinstone and Tinker (2017) found engagement positively correlated to students' academic success. Beyond academic success for these engaged students, Fredricks et al. (2004) reported students who are engaged tend to attempt difficult academic endeavors more often.

Teaching Pedagogies and Learning Styles

Another pertinent issue of the traditional teacher-centered pedagogy of skill acquisition is it only meets the needs of a few learning styles. Learners comprehend material that best meets their learning styles whether being auditory, visual, or kinesthetic. Traditional teaching pedagogies only use one of these methods rather than addressing all learning styles utilizing multiple methods (El-Bakry & Saleh, 2013). If a student learns best by kinesthetic physical learning, they excel at this skill acquisition. Students who learn best by verbal instructions or repeated visual performances struggle becoming competent with this teaching style. Alharbi et al. (2017) reported the preferences of learning styles among nursing students at a University in Saudi Arabia indicated that 76.9% preferred visual learning, followed by audio learning at 50%. It is common for students to learn and study using several methods. Angeline and Ranadev (2018) reported that 63.5% of nursing students studied using two methods, termed bimodal. These students combined two learning methods such as audio and video, visual and reading, or writing with kinesthetic learning (Angeline & Ranadev, 2018). The current method of teaching skills combines modeled performance followed by kinesthetic attempts. Alharbi et al. (2017) report the visual learning style is the preferred learning method, and the traditional pedagogy is based nearly on kinesthetic learning, with a visual modeled performance only once. This is a glaring problem with the current skill acquisition method.

Psychomotor Skill Retention

Current teaching methods of psychomotor skills in nursing schools also lend itself to the problems of knowledge and performance retention issues. Despite adequate training on psychomotor skills such as basic life support (BLS), students are unable to master the knowledge and skill performance has been noted to deteriorate within only a few weeks of the training (Hernández-Padilla et al., 2015), or national accreditation and certification (Dick-Smith et al., 2021). Other studies have noted BLS skills deteriorated at the 6-month mark (Oermann et al., 2010). Literature is clear that BLS psychomotor skills are not retained over time (Einspruch et al., 2007; Hamilton, 2005; Riegel et al., 2006; Smith et al., 2008; Woollard et al., 2006).

To assist with skill retention and mastery, practice and consistent exposure is a key element. Oermann et al. (2010) reported that monthly practice of BLS skills for 6 min lead to better skill performance over their initial baseline testing. Wong et al. (2019) evaluated instructional videos to teach dental anesthetic skills. These videos were provided to students throughout their learning. Results showed that nearly 90% of students found the videos to be helpful for review of the skills, and greater than 90% agreed the videos helped them understand the clinical skills (Wong et al., 2008). Also, worth noting the videos with the most views, correlated to high academic marks on those skills in competency testing (Wong et al., 2008). Barisone et al. (2019) reported that students having access to skill videos throughout their nursing curriculum made students feel more confident in skill performances. Utilization of video exemplars of skills has also yielded positive success. Students reported that exemplar videos assisted with preparation, reduced stress, and gave a better understanding of expectations (Massey et al., 2017).

Objectives

Do nursing students, who are enrolled in a BSN program and who are taught psychomotor nursing skills via demonstration on the social media platform YouTube, prefer this technology to traditional demonstration, and to evaluate their overall perceptions of YouTube as a learning tool?

Methods

Design

Students enrolled in a BSN program were asked to voluntarily partake in this study. The skills that have been identified of interest to this study are currently taught in the second semester of the five-semester program. All institutional review board (IRB) policies and requirements were met. Within the nursing cohort there are 40 students. This cohort of 40 is subdivided into four clinical sections consisting of 10 students in each section. Of the four clinical sections, two of the sections acted as the control group, while the remaining two were the experimental group. It was randomly determined that the two sections that were in the

skills lab first would represent the experimental group, and the remaining two groups would represent the control group. Both groups attended a skills lab session in which their instructor demonstrated the three IV skills. All skills were demonstrated and tested on used a standardized competency checklist form, which was given to all participants at the beginning of the semester. Participants in the experimental group were given access to the YouTube video series on IV skills prior to learning them in the skills lab. The YouTube video series consisted of three videos that were made by the researcher using the instructional steps and competency forms the participants were given by their course instructors at the beginning of the term. This was also the form the instructors used to demonstrate the identified skills. Experimental group was instructed to watch the videos prior to attending their scheduled skills lab day in which the skills were to be taught. Control group was given access to the YouTube videos after IV skills had been taught.

Data Collection

The researcher sent an electronic online survey link to all participants after all participants had completed their skills lab day and passed their competency exam on IV skills. Both control and experimental groups received the electronic survey at the same time in the semester.

Research Questions

Do nursing students, who are enrolled in a BSN program and who are taught psychomotor nursing skills via demonstration on the social media platform YouTube, prefer this technology to traditional demonstration? Research also looks to evaluate their overall perceptions of YouTube as a learning tool in nursing education.

Sample

Forty students who were enrolled in a BSN program in which identified skills were taught, were asked to voluntarily partake in this study. Only 17 students chose to volunteer for the research study. Determination of control and experimental groups were randomly chosen based upon which day the clinical sections attended skills lab based on their predetermined class schedule and according to which clinical section they registered for. The participants who attended the first skills lab group were randomly placed into the experimental group, and participants who attended the second skills lab day were placed into the control group. The group of students who were placed into the experimental group was given access to the three YouTube videos prior to teacher demonstrations in class.

Inclusion and Exclusion Criteria

To be included in the study, a participant was to be enrolled in the BSN program and in their second semester of study at the chosen study site. All 40 students within the second semester nursing cohort were asked to participate in the study unless they met any of the exclusion criteria. Exclusion criteria included students who had previous experience inserting IV catheters, knowledge of IV pumps, or hanging IV bags. Previous work experiences or volunteering in such areas as EMT or paramedics were also exclusionary factors. If a person was not enrolled in the second semester within the nursing program and not currently enrolled in the acute practicum course in which the population sample was based, they were excluded.

Questionnaire

The questionnaire was developed by the researcher. Two content experts were consulted to identify the face and content validity of the questionnaire. The first component was designed to evaluate the participants' perceptions of YouTube as a learning tool in nursing education. This consisted of seven items. There were four additional items asked of the intervention group, and three items for the control group. The second component collected demographic information. Demographic information included age, ethnicity, marital status, and employment status, and consisted of five questions. The survey was administered online and sent directly to the participant's email address.

Statistical Analysis

Data analysis was conducted using the Statistical Package for the Social Science (SPSS) version 26 software. Descriptive statistics were used to evaluate the questionnaire filled out by the participants.

Results

Sample Characteristics

The experimental group consisted of eight participants and control group had nine participants. Twenty-three of the invited participants declined to take part in the study. Table 1 demonstrates the frequencies of individual answers to questions 1–7 according to either the control or experimental group in which the participants were placed in. One respondent was excluded from the questionnaire as it was not clear to which group, they belonged to. All participants were provided with the same questions for this section.

Table 1. Follow-up Questionnaire Frequency Statistics Analysis.

		Total groups		
		Frequency	Control frequency	Experimental frequency
When first introduced to a new nursing skill such as IV insertion, Foley Catheter insertion, IM injections. What is your preferred learning style?	Visual	41.7%	50.0%	33.3%
	Tactile	8.3%	16.7%	0.0%
	Audition	8.3%	0.0%	16.7%
	Combination of any above	41.7%	33.3%	50.0%
Do you have increased anxiety when learning a new skill for the first time?	No	41.7%	66.7%	16.7%
	Yes	58.3%	33.3%	83.3%
In your opinion are YouTube videos showing demonstration of nursing skills, a valuable learning tool?	No	0.0%	0.0%	0.0%
	Yes	100.0%	100.0%	100.0%
In preparation of learning new skills which do you prefer?	Watching YT video demonstration	91.7%	100.0%	83.3%
	reading about the skill in the textbook and looking at pictures	8.3%	0.0%	16.7%
How often do you use the social media platform YouTube for any reason?	Rarely or never	8.3%	16.7%	0.0%
	Once per week	25.0%	16.7%	33.3%
	Daily	66.7%	66.7%	66.7%
In the last month how often have you used the social media platform YouTube for learning?	Rarely or never	8.3%	16.7%	0.0%
	Once per week	33.3%	33.3%	33.3%
	Daily, 3–5 × per week	58.3%	50.0%	66.7%
Do you think having an instructor demonstrate YouTube video (auditory and visual) of a nursing skill prior to class would lower your anxiety when learning the skill in the skills lab for the first time?	No	0.0%	0.0%	0.0%
	Yes	100%	100%	100%

Table 2. Follow-up Questionnaire Frequency Statistics Analysis of Experimental Group-Specific Questions.

Questions		Frequency
Did having access to the YouTube video series on IV skill better prepare you for learning the skills?	No	0.0%
	Yes	100.0%
Did you watch the YouTube video series?	No	0.0%
	Yes	100.0%
How many times did you watch the videos?	Zero	0.0%
	Once	66.7%
	2-3	33.3%

Analysis of Questions 1–7

It can be observed the answers do not differ much depending on the group. Participants reported when learning a new nursing skill their preferred learning style was visual (41.7%) and a combination of multi-learning options such as visual, tactile, or audio (41.7%). When asked if they had increased anxiety when learning a new skill, the experimental group reported (83.3%) versus 33.3% for the control group. Overwhelmingly, all participants (100%) reported the use of YouTube videos to be a valuable learning tool. When asked a preference on utilizing YouTube videos versus reading about a skill in a book, 91.7% of students preferred YouTube (100% of the control vs. 83.3% of the experimental group). In the last month, both groups reported using YouTube for any reason 66.7% daily or 3–5 times per week, 25% reported once per week, and 8.3% reported rarely. It was interesting to note participants also reported in the last month that 58.3% used YouTube daily or 3–5 times per week for learning new material. Both groups reported having an instructor demonstrate a skill via YouTube would lower their anxiety prior to learning the skill (100%) of respondents.

Analysis of Experimental Group-Specific Questions

Table 2 records the frequency of answers to the questions specific to respondents from the experimental group. All (100%) of the respondents in the experimental group reported that having access to the YouTube video series better helped them prepare for learning the skills. All (100%) participants reported viewing the videos and (33.3%) of respondents watched the videos more than once, and 66.7% watch the videos only once.

Control Group-Specific Questions

Table 3 results analysis showed the response of the control group-specific questions. Most of the respondents (83.3%) did

not watch the videos after receiving access after already learning the skill. All participants in the control group (100%) reported they believed having access to the YouTube videos prior to learning the skill would have better prepared them.

Analysis of Demographics Questions

Table 4 results showed the greatest number of respondents identified as Caucasians (91.7%) and reported not being married (91.7%). Majority of age ranges fell between 21 and 23 (58.3%) and 18 and 20 (33.3%) representing postmillennial and millennial generations. Only 8.3% of the group fell outside of this postmillennial and millennial generation. They were in the control group.

Assessment of comfort level with technology was also examined. This varied among all groups but all responded with at least an average comfort level using technology. As a

Table 3. Follow-up Questionnaire Frequency Statistics Analysis of Control Group-Specific Questions.

Layer		N %
Did you watch the YouTube videos after given access?	No	83.3%
	Yes	16.7%
Do you think having access to the YouTube video series on IV skill would have better prepared you for learning the skills?	Yes	100.0%

total group, (50%) reported very good comfort level, (33.3%) good, and (16.7%) with average comfort level.

Discussion

This study results supported the use of YouTube videos as a supplemental learning tool when learning IV skills and demonstrated a strong preference for this learning modality among participants. Results revealed participants believed that having access to YouTube videos of skill demonstrations would better prepare them for learning psychomotor nursing skills.

All participants who received access to the YouTube video series prior to learning the skills in the lab watched the videos and reported it better prepared them to learn the IV skills. Providing exemplary YouTube video psychomotor skill instructions that resulted in 100% viewership and positive perceptions was consistent with the findings of Massey et al., (2017) in which showed videos assisted with preparation and reduced stress. Wong (2019) reported videos better helped them understand the skills. Only three nursing skills were chosen for this study, and further research is needed to see if students would continue to support the usage of YouTube videos for additional skills that might be seen as easier skills to perform.

Providing a learning modality such as YouTube videos that address multiple learning styles sets students up for greater success. This study confirmed work done by Angeline and Ranadev (2018) who reported (63%) of students learn using a bimodal style. It is also consistent with Alharbi et al. (2017), in which reported students prefer a visual learning style. This confirms the traditional one-way teaching style of an instructor's demonstration of

Table 4. Follow-up Questionnaire Frequency Statistics Analysis of Demographics Questions.

		Groups		
		Total frequency	Control frequency	Experimental frequency
Please specify your ethnicity	Caucasian	91.7%	83.3%	100.0%
	Asian	8.3%	16.7%	0.0%
Are you married?	No	91.7%	83.3%	100.0%
	Yes	8.3%	16.7%	0.0%
What is your current employment status?	Seeking opportunities	33.3%	33.3%	33.3%
	Employed part-time	58.3%	50.0%	66.7%
	Retired	8.3%	16.7%	0.0%
What is your current age?	18–20	33.3%	16.7%	50.0%
	21–23	58.3%	66.7%	50.0%
	42–44	8.3%	16.7%	0.0%
What is your comfort level with using technology for learning? For example, using zoom, internet, videos, computer usage, etc.	Poor	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%
	Average	16.7%	33.3%	0.0%
	Good	33.3%	33.3%	33.3%
	Very good	50.0%	33.3%	66.7%

psychomotor skills is not currently meeting the learning needs of all students. It is advisable for instructors to continue to find ways to incorporate multiple learning styles when teaching, including the use of YouTube videos to meet the needs of students. This was mentioned in previous research by Nicolaou et al. (2019) in which found current students prefer videos as an instructional material.

Prior to this research, there has been limited research on utilizing YouTube videos as a teaching tool in nursing education, specifically in relation to skill acquisition. Results demonstrated two-thirds of participants reported using YouTube daily, and (25%) report using it once per week. This correlates with the website Alexa.com which compares top worldwide traffic for websites placing YouTube as the second most visited site (Alexa, n.d.). Not only did the reported data support YouTube as a place where postmillennials and millennials go for engagement viewing in various forms, but it also demonstrated that nursing students utilized YouTube for learning. Over half of the respondents use YouTube daily or 3–5 times per week for learning. One-third of the students use it for learning at least once per week. This represents YouTube is an engaging tool that can be utilized in nursing education. Based on these findings, nursing students are seeking out learning materials on YouTube even if it is not produced by their instructors. It is unclear if these demonstrate accurate and current content. Skill videos may also provide demonstrations utilizing equipment students are unfamiliar with. This adds to the notion to continue to evaluate YouTube videos in nursing education.

The utilization of YouTube videos as a supplement can potentially address the issue of skill retention issues and performance concerns. Performance and retention issues can arise as early as few weeks following training (Einspruch et al., 2007; Hamilton, 2005; Hernández-Padilla et al., 2015; Riegel et al., 2006; Smith et al., 2008; Woollard et al., 2006). Barisone et al. (2019) noted that having videos provided to students throughout their curriculum allowed students to feel more confident in skill performances. Results of the current study yielded that only (16.7%) of the students who were given access to the videos after learning the skills watched the videos. This puts having access to the videos throughout the curriculum to assist in skill retention and assist in performance in question. Additional research needs to be conducted to determine if students would return and rewatch the videos and its possible effects this might have on skill retention and performance.

Strengths and Limitations

Participants

Participants in the sample groups were not evenly distributed among gender.

Participants self-reported female 13/17. This left the sample of males in the study at only 4/17.

Sample

The small sample size of this research presents the greatest limitation to the study findings. Although the experimental and control groups were split nearly equally, the total participants of 17 was relatively small diminishing the power of the study results. The sample was only conducted at one specific school of nursing and in a BSN program. Another, limitation of the study was this examined IV skills which are very specific nursing skills, it was not feasible to create a wide range of videos on numerous nursing skills.

Statistical Analysis

With a small sample size only descriptive statistical analysis was chosen. A larger follow-up study is recommended in an attempt to reproduce similar results. The statistical analysis of this study lacks any inferential statistics that might be needed to make a stronger case for conclusions based on the reported data alone. Without inferential statistics, the results are not as strong and are a limiting factor of this study.

Implications for Practice

This research showed nursing students responded positively to learning new skills with the addition of YouTube videos acting as an exemplary performance model. Providing exemplary YouTube videos as a supplement to enhance traditional demonstration of psychomotor skills can help address multiple learning styles and should be incorporated into nursing curriculums. It is recommended to further investigate the dynamic opportunities of YouTube videos and its implications on nursing education specifically when learning new skills. Further investigation is also needed to evaluate YouTube videos and the possible effects YouTube videos can have on skill retention and performance over time. As YouTube continues to grow in popularity, it is important to find ways to utilize this social media platform in nursing education to better meet the needs of the current generation of nursing students.

Conclusions

This study revealed support for the use of YouTube videos as a supplemental teaching tool when teaching psychomotor nursing skills. All participants reported that having access to exemplary videos prior to learning skills would better prepare them. Participants identified as bimodal learners as well as identifying as visual learners, in which YouTube videos can help address the learning needs of these current students.

This study also confirmed previous research on these this generation of nursing students demonstrating the preference for technology, and specifically video learning materials. Findings of this research have cemented the groundwork to

evaluate the social media platform of YouTube videos as a supplemental teaching tool to teach psychomotor nursing skills. With overall positive perceptions of YouTube videos and results demonstrating that a majority of participants use YouTube on a daily basis, provides a very intriguing opportunity to incorporate YouTube as learning tool into the curriculum. This research likely provides strong insight to utilize YouTube videos in the nursing curriculum, as well as the need to continue to find innovative ways to utilize technology with millennial and postmillennial students.

Declaration of Conflicting Interests

Funding

Ethical Approval

This study was approved and monitored by two separate institutional review boards (IRB). The research study was approved by the Regis College IRB board and by the University's IRB where the study was conducted. Participants in the study were not subjected to any physical harm, discomfort, emotional, or psychological stress because of the study.

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