The Effect of Instructor-Produced Videos as Supplemental Material for Training Visual Screening Procedures in Occupational Therapy Education

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Abstract

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Keywords

Instructional methods, educational technology, Constructivist Learning Theory

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ABSTRACT

The aim of this study was to explore student perceptions of instructor-produced videos to enhance knowledge, self-efficacy, and clinical skill with administering visual screening procedures. The video library, hosted by Vimeo™, consisted of 26 videos, with an average video duration less than 90 seconds. The videos were made available to occupational therapy students as supplemental material. Three focus groups consisting of 23 participants captured students' perceived value of instructor-produced videos to enrich their learning. Three categories emerged from the data analysis including clinical application, learning preferences, and elements of video production. Students commented on how the videos positively influenced their ability to perform visual screening procedures, confidence with screening procedure administration and reasoning skills when evaluating client performance during visual screens. Students expressed how the videos appealed to their learning style (visual/kinesthetic). Also, they reported how the videos allowed them control over the pace of information delivery, the frequency of content delivery, and the environment in which they viewed the content. Students discussed elements of video production that enhanced their learning including actor characteristics and video use pragmatics.

INTRODUCTION
Occupational therapy faculty members are challenged to meet students' learning needs as a result of technology's role in expanding access to information. University teaching is dominated by dated pedagogical models with traditional lecture as the main content delivery method (Clifton & Mann, 2011). Today's students are no longer the people the traditional educational system was designed to teach. The educational system has not progressed at the same rate as technological expansion, compromising its ability to meet students' learning needs. Additionally, students are provided only limited opportunities to practice and refine their clinical skills during academic training, and as a result, they are often not job ready (Williams, Brown, Scholes, French, & Archer, 2010). While there are numerous teaching methods available to occupational therapy educators such as case-based learning, service learning, and video-based learning, educational science in occupational therapy remains in an early stage of development (Hooper, King, Wood, Bilics, & Gupta, 2013). In a study surveying 520 faculty members across the United States, the authors concluded there is limited research examining student achievement of practice competencies in occupational therapy education (Gupta & Bilics, 2014). Occupational therapy education must identify which evidence-based approaches best facilitate students' development of self-efficacy and acquisition of clinical skills (Henderson, Coppard, & Qi, 2017). Instructor-produced video is one teaching method that shows potential for enhancing occupational therapy student skill development. Video resources have the potential to enhance student learning by providing a mechanism to support content delivery which allows instructors the time to incorporate active learning strategies into the classroom (Clifton & Mann, 2011; Wiggen & McDonnell, 2017).

LITERATURE REVIEW

Use of Video to Enhance Student Learning
Technological growth has impacted students' ease of access to educational multimedia. Several video platforms such as YouTube®, Vimeo™, and iTunes U™ have not only allowed users to access video from multiple devices but also have offered user-friendly applications to allow for simple navigation. Video platforms have afforded students the ability to search, select, and view videos of their choice. Use of online video has allowed students to have complete control over where they view the content, when they view the content and the rate at which the content is delivered (McAlister, 2014; Rayyan, Elagra, Alfataftah, & Alammar, 2017). Students' perceived benefits of using online video include increased autonomy, heightened sense of responsibility for learning, increased flexibility, and increased freedom in planning learning schedules, which allowed students to work at their own pace and in a location of their choice (Kelly, Lyng, McGrath, & Cannon, 2009). Students appreciated having access to watch videos repeatedly (Giles, Annan, Gober, & Greene, 2018; Kelly et al., 2009; McAlister, 2014). Other research demonstrated how episodically-rich examples helped students develop semantic representations to facilitate internalization of knowledge rather than simply memory recall (Herbert & Burt, 2004).

Use of Video for Specific Skill Development

Beyond fostering student acquisition of knowledge, video resources helped students develop effective communication skills, problem-solving skills, professional etiquette, psychomotor skills and collaboration with others in an interdisciplinary team environment (Williams et al., 2010). Students' insight into their performance was more accurate after using video-based resources suggesting educators are improving students' calibration of their own knowledge (Wiggen & McDonnell, 2017).

Evidence supports using video to teach occupational therapy students manual skills training. McAlister (2014) conducted a study in which 43 first-year master's level occupational therapy students utilized instructor-produced YouTube® videos demonstrating manual skills training as supplemental learning material during a six-week kinesiology course. He indicated 2,573 YouTube® views occurred over the six-week period, averaging 60 total views per student and an average of six viewings per video demonstration. Surveys completed at the conclusion of the course showed students perceived that the videos enhanced the overall quality of the course, enhanced their learning and increased their confidence during lab practice exams. Students specifically noted the benefit of learning the correct manual skills technique through mimicking or shadowing the video demonstrations. In the Giles et al. (2018) study, students also reported how visual demonstration of motor skills through use of video made goniometrics easier to learn and practice in comparison to pictures and text alone. Preliminary data on video usage and student perceived benefits of using video to train manual skills suggested the use of videos could enhance other areas of skill development for occupational therapy students.

Theoretical Approach

This study was based on the Constructivist Learning Theory (Loyens, Rikers, & Schmidt, 2009) which emphasizes that learners are active in constructing their own knowledge and are responsible for assigning meaning during the learning process. Constructivism theory suggests that when students learn, their prior knowledge is compared to new information in order to develop a revised understanding of a concept. Students are also responsible for self-regulating, self-reflecting, and self-directing their learning. The theory also supports how student learning is enhanced when students are given control over their learning environment. Students are motivated by authentic learning tasks as they can identify its relevance to their future profession.

Occupational therapy educators are the gatekeepers to the profession and are responsible for investigating the effectiveness of different teaching methodologies. Limited evidence exists in relation to understanding the educational benefits of video specific to occupational therapy education. Studies that investigate the benefits of instructor-produced video to enhance occupational therapy students' learning are essential to establish best practice in occupational therapy education. Insight about students' perception toward using instructor-produced video for self-directed learning will inform occupational therapy educators about the potential of video as a valuable teaching tool. The purpose of this study was to explore students' perceived value of instructor-produced video to enhance knowledge, increase self-efficacy and improve

clinical skill in administering visual screening procedures. The research study addressed the overarching question: What is the value of instructor-produced video to students? This study also explored answers to specific sub-questions related to the effectiveness of instructor-produced videos to enhance student learning: (a) To what extent do students perceive the value of instructor-produced video to enhance their knowledge? (b) To what extent do the students perceive the value of instructor-produced video to enhance their self-efficacy? (c) To what extent do the students perceive the value of instructor-produced video to enhance their clinical skill with visual screening procedures? (d) How do occupational therapy students describe their perception of the benefits, drawbacks and uses of instructor-produced video as supplemental material for training visual screening procedures?

METHODS

Design
This qualitative study used focus group methodology (Krueger & Casey, 2015) to explore student perceptions of instructor-produced video to enhance knowledge, self-efficacy, and clinical skill with administering visual screening procedures. Focus groups work well when seeking a range of opinions, perceptions, thoughts or feelings that people have about an idea. Focus groups explore factors that influence opinions, behavior, and motivation (Krueger & Casey, 2015). A single-category design focus group addresses a homogenous sample; in this case, students who viewed instructor-produced videos, in three or four separate groups to reach theoretical saturation – the point where no new insights are gained about a topic. Ethical approval for this study was obtained from Western Michigan University's (WMU) and Texas Woman's University's Institutional Review Boards.

Participants
This study was conducted at two WMU campus locations in the beginning of Fall 2018 semester: the College of Health and Human Services in Kalamazoo, Michigan and WMU-Grand Rapids in Grand Rapids, Michigan. Two occupational therapy faculty members recruited a convenience sample of student participants at each location. All participants were master's level occupational therapy students enrolled in a required Vision, Visual Perception and Cognition course. Participants enrolled at the College of Health and Human Services were recruited by the principal investigator who did not serve as the course instructor. Participants enrolled at WMU-Grand Rapids were recruited by the third author who did not serve as the course instructor. As part of the course, the students reviewed instructor-produced videos as supplemental materials to train in visual screening procedures. The first author is the instructor featured in all of the videos. See Table 1 for list of visual screening tools demonstrated in the video library.

Table 1

Visual Screens in Video Library

Accommodation	Near visual acuity
Confrontation Testing	Ocular alignment
Contrast sensitivity	Oculomotor range of motion
Convergence and divergence	Pupillary response
Developmental Eye Movement Test	Smooth pursuits
Extinction	Visual midline shift
Eye dominance	Visual vertigo
Fixation	The King Devick Test
Glare sensitivity	The Star Cancellation Test
Horizontal, vertical and diagonal saccades	Worth Four Dot Test

Students who indicated an interest in study participation after hearing the recruitment script provided written informed consent to the faculty member responsible for recruitment. After acquiring a list of students who consented to focus group participation, the faculty member sent individual emails to each participant detailing the plan for the focus group. The email restated the purpose of the study, expectations of the participant and logistical details. All students were informed that focus group participation was confidential, voluntary, and would not influence the student's grade in the course.

Procedures
The focus groups were conducted by the first author and third author shortly after the conclusion of the vision module in October, 2018. The focus groups occurred in-person, on the campus at which each cohort is enrolled in coursework. Each focus group consisted of a maximum of eight students, the groups were scheduled for up to 60 minutes each, and the groups were audio-recorded. The focus group facilitator conducted each session by introducing the group, setting the ground rules, asking the focus group questions and concluding the session by thanking the participants for their time. The focus group facilitators ensured group participants had equal opportunity to contribute to the dialogue. A light meal was provided at the end of each focus group session. Table 2 lists the questions used to facilitate the discussion during the focus group.

Table 2

Focus Group Questions

Experience and perception
    Please introduce yourself and tell us about your previous experience with people who have visual impairments.
    Share with the group your first impressions of the instructor-produced videos.
    Share with the group what was particularly helpful about the instructor-produced videos.
    Share your perspective on what was not helpful or how the videos could be improved.
Skills and confidence
    How have these videos helped you *develop your clinical skills* in administration of visual screening procedures?
    How have these videos helped you *gain confidence* in your skills?
    From what you've learned how might the skills apply to clinical experiences?
Pedagogy and access
    How do instructor-produced videos compare with other teaching tools you've encountered throughout this course?
    If you encountered any barriers to accessing the videos how did you address the problem?
    How might instructor-produced videos be used with other topics?

Data Collection
Focus group data were collected via audio-recording device and transcribed after all focus group sessions were complete. A coding process was utilized to de-identify participant information and protect their confidentiality. All informed consent forms, transcripts and audio recordings were stored electronically using an encrypted (password protected) Ironkey USB drive to allow for security and portability.

Data Analysis
Descriptive statistics were analyzed with MicroSoft Excel to describe participant demographics (see Table 3). Focus group data were examined using a transcript-based analysis. Transcript-based analysis is performed from listening to an audio recording of each focus group and developing a transcript of the entire focus group conversation (Krueger & Casey, 2015). The transcripts were de-identified and the audio-recordings were permanently deleted following transcription by the first author. Nvivo 12 Pro, a computer software program, was used to streamline qualitative thematic analysis. A systematic coding process was used to anonymously arrange data into categories, prioritize the categories and then generate an executive summary (Krueger & Casey, 2015).

Table 3

Student Participant Demographic Information

Characteristic	n
Gender	
Male	2
Female	21
Age	
20-24	16
25-29	5
34+	2
Cohort	
Grand Rapids	16
Kalamazoo	7

A constant comparative analytic framework was implemented with first and second authors reviewing the transcripts to identify patterns and discover relationships among data (Krueger & Casey, 2015). Trustworthiness of data analysis was established by member checking with a focus group facilitator (third author) to ensure the data was credible, dependable, and confirmable (Letts et al., 2007). Triangulation occurred in data analysis as well as through expert review of data analysis (fourth author). Results of data were reviewed with a video technology expert to ensure accuracy and category refinement occurred. Transferability was addressed through collection of demographic information of participants and description of setting. Dependability was addressed through clear explanation of data collection process, analysis procedure and interpretation of results. Confirmability was achieved through having the third author collect data, and having the research committee oversee data analysis to reduce bias in the research (Letts et al., 2007).

RESULTS
Twenty-three graduate students pursuing a Master of Science in Occupational Therapy from two separate campuses at WMU participated in the study. The first cohort of participants consisted of seven students. The second cohort of participants consisted of 16 students. At the time the study was conducted, all students were in their fifth semester of coursework, nearing the end of their academic program. Students were age 20 and older and participants were both male and female. Specific participant demographic information is displayed in Table 3.

Three categories emerged from the focus group data about the effect of instructor-produced videos on student learning: Clinical application, learning preferences, and video production. Clinical application refers to the implementation of procedural actions and utilization of critical thinking skills to perform a visual screen. Learning preferences refers to factors or attributes of learning from the videos that helped promote acquisition of knowledge. Video production refers to the elements of video content that promoted student learning.

Clinical Application
Students commented on how the videos influenced their clinical skill development and their ability to apply the skills acquired from the videos to other contexts. In this study, clinical application is defined as developing clear communication when providing instruction, demonstrating appropriate nonverbal language, utilizing tools accurately, developing keen observation skills, and recording of screening results. Students' comments related to the category of clinical application were divided into interconnected subcategories of performance and clinical reasoning.

Performance. Students spoke of their improved accuracy with administration procedures after viewing the videos. Students expressed feeling comfortable with verbally and physically correcting the position of the individual on whom they were performing the screen when verbal instruction was not comprehended accurately. Students acknowledged reassurance about meeting instructor expectations and a sense of security about student performance due to the instructor demonstrating the administration procedures. Confidence in their performance when administering the screen was expressed by one student, "I feel like I won't be afraid if I have to do a screen in level II [fieldwork]. I know how to do it now." Another student stated:

> Before all of these [instructor-produced videos], I might have steered away from testing so many visual abilities. I know we learned a couple good ones like tracking, convergence, divergence and fields… I didn't realize how many there were and how many different ways there were to do it. I think I may have just done a couple and called it a day. Now I'm confident to be able to do more than that.

Clinical reasoning. Students commented on how the videos helped them to anticipate patient needs beyond what occurred in the video demonstrations. They specifically shared how they improvised or adapted their administration procedures in response to an unexpected occurrence when conducting the visual screen on a peer. The value of visual screening in explaining underlying patient behaviors as well as how screening contributes to evaluating the patient holistically was identified.

> It helps us to construct a better picture of the whole person… so far, we're decent with range of motion and those sorts of things, but vision is a very important aspect of looking at a person and considering their behaviors.

Two students, who worked in a partnership during their Level I fieldwork experience at a faculty-facilitated clinic, reported immediately applying what they had learned from the videos by conducting a visual screen on a patient under the supervision of the fieldwork educator:

> It was great that I could use the videos to help do the assessments on my patient in clinic who had visual impairment and it was just easy. After I reviewed them, I felt pretty confident when administering it.

> [We] did a whole screen on one of our patients we're working with in clinic and we found a severe visual cut which gave us a lot of insight as to the problems he would have with his world, like finding his cane, for example. He's right side affected and so he holds his cane on his left side, but he has a left visual cut, so sometimes his cane will be there, but he can't see that, so he needs to compensate.

Another student reported applying what they learned from the videos by screening a child for which they served as a caregiver, "The girl that I work with, I actually did the screens. She's nonverbal and cognitively disabled so I really had to adapt, but I was still able to." The student's comment suggests that following acquisition of the procedural skill of administering visual screens, this student feels confident enough to identify potential dysfunction in an individual and transfer their newly acquired administration skill to an individual with multi-faceted deficits.

Learning Preferences
Numerous students commented on how videos met their learning preferences. Learning preferences included aspects of video that facilitated an atmosphere conducive to student learning. Learning preference subcategories consist of learning style and user control.

Learning style. Students who self-identified as visual and kinesthetic learners during the focus group also cited how watching video appealed to their preferred learning style as it provided "mixed modes of learning." Also, videos appealed to self-identified visual learners as well as kinesthetic learners due to user control options. "I think with technology becoming more and more part of our society, we're all more visual learners. I think it's more beneficial for this generation of people to watch something than read something." They described watching a video then practicing the screen immediately afterward to reinforce what was observed, "I really *looked* at the videos and then I *performed* them, so it was really great for transferring the skills over." Additionally, students expressed the difficulty they have formerly encountered when attempting to translate written word into their own voice coupled with physical performance, "It's hard when you're *reading* these things and trying to put in the dialogue in your head that's communicable to the consumer or the people you're testing." One student strongly expressed how visual demonstration ensures accuracy about administration technique:

> I think a big one for me is just confidence 'cause not seeing how it's done professionally or correctly, it's like "I think I'm doing this right"…you can read it in a book all day, but seeing it actually done I'm like "Ok, now that is what I was supposed to do".

The quote reflects how instructor-produced video can model skills which has the potential to reinforce a student's confidence and provide them with reassurance in skill application.

User control. Many students commented on the benefit of having control over the pace of the information delivery. The ability to control video pace by pausing and rewinding was valued by several students. They acknowledged the importance of having the capability to review the content multiple times. Students expressed appreciation for the flexibility of brief, individual videos per visual screen, so they could more easily revisit the videos with screens that were perceived as harder to grasp and skip over screens which they felt comfortable administering. Another noted benefit was the freedom to reference the video outside of class for additional review, "We've had classes where we'll watch a demonstration video [in class]… not being able to pause it when you're confused about something and go back… it kind of just falls by the wayside." Students explained various other ways in which they value exercising control over content delivery and how having control facilitated learning. They described the benefits of note-taking while watching the videos, the ease of taking a break then revisiting content upon return and even the ability to adjust the volume to meet their needs.

> People learn at different paces. Instead of having a time limit at lab where you have ten minutes on this section then you've got to switch… whereas at home you have unlimited time looking at one-minute long video.

Students noted how the environment in which they viewed the videos was conducive to facilitating their learning in comparison to the classroom setting. Exercising control over the elimination of distractions and reduction of noise in order to be able to adequately focus attention on the videos was crucial to enhancing learning for certain students.

Video Production
Students perceived certain aspects of video production elements as enhancing their learning experience. The category video production is defined by the filming environment, language use, and video display characteristics. Specific video production subcategories consist of the videography style, scripting, and access.

Videography style. Students voiced appreciation for *professional*, *clean*, and *organized* videos. They valued *high-quality* videos which provided adequate illumination of people and objects featured in the video. Other high-quality characteristics of video include consistent audio quality and intentional shifting of camera angles between instructor and patient throughout the assessment administration procedure. "It would switch between [instructor] and the client and you could see what the eyes were supposed to be doing or what they were doing." Students noted the importance of set design, including how the solid black background and neutral color of clothing worn by the patient actor contributed to reducing their distractibility.

> The black background was very, very helpful. Just because when I see a video, like the range of motion – the functional assessment videos, it can be very distracting like "Oh, what's going on back there". The setting was one of the best things about the whole videos.

Students noted the predictability of the format for each video as helpful. The following descriptors were used to explain the positive qualities of set design that enhanced their learning: *personable, relatable, simple, straightforward, concise, to the point*, *quick*, and *natural*.

Several students verbalized appreciation for the short duration of each video. There was a consensus among students that chunking content into shorter length videos was preferred over longer videos. Unanimously, they expressed how their attention is impacted by the duration of video: "The shorter, the better." One reason for preference toward short videos put forth by a student is because it eliminates the need to search through the content to find specifically the information they are seeking. Students expressed decreased value of a video which exceeded their preferred duration (10 minutes) or one which showed a clinical scenario but did not require them to interact with the content. They admitted to disengaging or passively observing if the active learning component was missing or they were not held accountable for learning the material.

Scripting. Students commented on the effectiveness of how language was used in the videos and its impact on learning. They appreciated how technical language was used in the introduction to describe the tools and again at the end when describing interpretation of the screen. They also described how they valued that the interactions with the patient were loosely scripted and demonstrated conversational language.

> Sometimes you know how it plays out in your head, but you can't say it in the way that… all you have to do is "stare at this and move as quickly as you can". I wouldn't have said that if she hadn't had those videos.

Even the errors or unexpected occurrences and how the instructor responded to the situation in the video were viewed by the students as beneficial to their learning. They appreciated how allowing imperfect takes made the interaction feel more natural and real-life. Students reported using a teach-back method in which they wrote down or practiced articulating the way in which they'd instruct a patient out loud using their own language:

> The hardest part for me was like, just like "What would I say it to the patient?" like I know what I'm looking for, but how do I say it to the patient? So, she was really short and clear... I actually wrote down what she was saying to everyone just so I could look back….

Another student explained how realistic interactions promoted engagement and helped them to prioritize aspects of visual screening:

> Too scripted is just unnatural. You would never see that actual patient, you know? And the loosely scripted you're like "I want to make sure I hit these points" and then once you actually get it, you can go to the real-life "this is how I'd actually do it".

Characteristics specific to the instructor or student actor that enhanced learning were articulated by several students such as the importance of gauging the distance from patient, position of self in relation to patient and position of tools used in the video. Students appreciated having an actor who was a former student featured in the videos as well as the familiarity of a faculty member.

Ease of access. Students expressed how ease of accessing the videos positively influenced their use of videos for learning. They appreciated how Vimeo™ displays a screen-captured image to accompany the video title. The way the videos were organized in a catalog format allowed for simplified navigation. "I like that they are broken up into specific areas of the screens. If you knew one really well, you didn't have to re-watch it through a long video. You could click on the ones that you needed." They also appreciated access to the video library at all times. Students were explicitly asked about the inconvenience of password-protection video albums, but unanimously agreed the auto-save password feature on their browser sparred them any difficulty in accessing the videos.

When discussing how instructor-produced videos may be used to teach other curricular content, students reflected on their recent coursework to offer suggestions. Several students reported seeking out video representation of administration procedures of other standardized assessments (i.e. range of motion testing, manual muscle testing) using YouTube® or Google to help support their learning. However, while the students were motivated to seek out video to demonstrate assessment procedures, they voiced frustration with locating accurate video content. Students expressed uncertainty about whether the videos found through search engines were demonstrating procedures correctly and they questioned the credibility of the presenter. While they admitted a disinterest in searching YouTube® for videos, they often will still resort to these search strategies even at the risk of being exposed to misinformation. Such a statement suggests that for some students, the method they use to learn a concept may override the credibility of the source from which they receive the content.

Additional findings. Students offered several examples of how video could be used for other purposes beyond visual screening procedures. They recommended creating visual screening videos that featured individuals with abnormal responses. Instructor-produced videos could be used to effectively demonstrate transfers, range of motion assessment, manual muscle testing, fall management, pediatric screening procedures, neurology concepts, wheelchair management, theory, and research concepts.

Coupling of instructor-produced videos outside of class with other active learning techniques such as demonstration and labs during class was highly recommended. They admitted while proficiencies induced stress, the educational benefit to their learning is immense. While preparing for proficiencies and fieldwork, students were comforted by the ongoing access to review the videos beyond the current course, "In our Level II's, if we need to do a visual screen, we have the ability to look back on it to refresh our memory, then we have more confidence going into performing those…"

Access to video resources during Level II fieldwork experiences and beyond allows students the opportunity to revisit content they received earlier in their coursework and gives students another tool to enhance their success.

DISCUSSION

This study used focus groups to explore student perceptions of instructor-produced video to enhance knowledge, self-efficacy, and clinical skill with administering visual screening procedures. The findings support occupational therapy educator use of instructor-produced video as supplementary material to train students in conducting visual screens. Findings also support Constructivist Learning Theory which posits how learning is enhanced when students are active in knowledge construction (i.e. performance and reasoning) and when students are given control over their learning environment (ease of access and user control) (Loyens, Rikers, & Schmidt, 2009). Results of this study reflect how video positively impacts students' perceived ability to perform the procedures and clinically reason beyond what is shown in the video.
The literature supports using video to promote performance skill and clinical reasoning development in students. In nursing literature, Forbes et al. (2016) reported how several studies testing various clinical skills appraised the effectiveness of video instruction as being superior compared to traditional methods in ensuring student performance outcomes, confidence, and satisfaction. Clinical reasoning is a complex cognitive process that integrates professional and acquired knowledge to deliver occupational therapy services to clients with complex concerns in various contexts (Mattingly, 1991). Videos can be customized to build students' foundational knowledge and train occupational therapy assessment and treatment procedures which directly contributes to student development of clinical reasoning. Murphy and Stav (2018) suggested that video cases prepared students for clinical reasoning by offering a richer and more authentic experience than text-based cases. Scenario-based videos display realistic clinical situations which help students identify the relevance of what they are learning to their future profession (Weeks & Horan, 2013).

Findings from this study support how students value the way video allows them to exert control over content delivery and accommodates how students prefer to learn. There appeared to be a strong preference toward visual and kinesthetic learning styles as several students self-identified as such. These findings are in agreement with existing literature which asserts that video appeals to students' learning preferences and allows them access to videos as frequently as they desire in their preferred environment (Rayyan et al., 2017). Students appreciate 24-hour access to videos to enrich their learning (McAllister, 2014).

In this study, video production elements such as minimizing background distractions, conciseness of communication, and shorter duration of video were identified as important factors impacting student engagement and perception of credibility. Likewise, the literature supports how videos capture a student's attention through display of interactive visuals, information-rich and high-quality content (Pan et al., 2012). The findings from this study are in agreement with results of Buzzetto-More (2014) which indicated that students collectively expressed a strong preference toward videos shorter

in duration. In addition to video length, the presentation style, video quality, and special features should be carefully selected in order to maximize the student response (Giles et al., 2018).

Student feedback from this study suggests that instructor-produced video can be a beneficial teaching methodology used in other areas of study, across a curriculum. Instructor-produced videos can be designed to address basic concepts (assessment procedures) to more complex concepts (analyzing a client case) in order to help students construct their own knowledge as they progress through a curriculum. Using instructor-produced videos as a teaching methodology utilizes the Constructivist Learning Theory by empowering students to take responsibility for their own knowledge construction while providing authentic tasks, allowing control over their learning environment and letting them determine the value of the knowledge throughout the learning process.

Study Limitations and Future Research
Participants in this study were part of a small, convenience sample. While a better understanding of student perceptions of the effectiveness of instructor-produced video to impact student knowledge, self-efficacy and clinical skill was gained, the findings are limited to the students who participated in the study and are not generalizable to students from other universities. Students also self-identified preferred modes of learning style and may have been motivated to participate in the study since videos appeal to their learning style preference. Future research should explore the connection between learning style and modes of delivery. A longitudinal study investigating how students apply procedural skill and clinical reasoning gained from instructor-produced videos to fieldwork experience and career would explore the carryover and long-term retention of clinical application.

IMPLICATIONS FOR OCCUPATIONAL THERAPY EDUCATORS
Instructor-produced videos are a valuable teaching method for providing students with the visually appealing representation of concepts and user control over their learning. Several concepts throughout a curriculum can be taught effectively using instructor-produced videos. Students who identify themselves as visual learners may seek out alternative video resources that could potentially provide misinformation about the concept being taught. To maximize the effectiveness of utilizing videos for student learning, it is strongly recommended occupational therapy educators use:
- Short videos with a duration of less than five minutes to maximize student attention and engagement with the material.
- A reliable video platform (such as Vimeo) that offers simplified user navigation, 24-hour access and compatibility with multiple electronic devices.
- Videos displaying balanced lighting, minimal background distractions (black background, neutral clothing color), and high-quality audio.
- Videos featuring natural and authentic therapist-client interactions.
- Videos demonstrating professional yet conversational language realistic for use in the clinic setting.
- Videos modeling articulate and concise speech appropriate for target population.

- Videos including options such as transcription or closed captioning.
- Creative coupling of videos with other teaching methods. For example, using competency exams in conjunction with reflective video analysis, video case studies with think-pair-share discussions, or flipped classroom video lectures with lab activities.

CONCLUSION

This research study explored student perceptions of instructor-produced videos to enhance knowledge, self-efficacy, and clinical skill with administering visual screening procedures. The results support occupational therapy educators' use of brief, realistic and high-quality instructor-produced videos to train students in assessment administration and have the potential to train students in both the development of soft skills and technical skills. Student comments provided valuable insight into video characteristics that both promoted and distracted from their learning. Student feedback suggested how educators can use instructor-produced video to scaffold skill building as students progress throughout a curriculum. Unlike other teaching methods, video allows for repeated review of content as needed by each student to achieve competence in a specific skill. Additionally, videos afford students the benefit of unlimited, ongoing access extending beyond classroom use – when students need it most. Continued investigation of the effectiveness of instructor-produced videos to influence student success in proficiencies and fieldwork experience will further validate their use as an effective teaching tool.

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