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MOCK EXAMS

Video Modeling

Introduction

Video modeling is a form of modeling that is an effective intervention for teaching social skills (Buggey et al., 2011), play skills (Lee et al., 2017), daily life skills (Shipley-Benamou et al., 2002), academic skills (Schmidt & Bonds-Raacke, 2013), as well as language and communication skills (Qi et al., 2018) to both children and young adults diagnosed with autism spectrum disorder (ASD). Additionally, it has been used to reduce challenging behavior (Buggey, 2005). Individuals with ASD tend to have strengths that include the ability to process visual stimuli. Due to this strength, an emphasis has been placed on instructional strategies that include the use of visual cues. Modeling and demonstration of a desired behavior or skill complements the visual strengths of individuals diagnosed with ASD.

Video modeling is referred to as a behavioral technique that uses video clips rather than a live scenario for an individual to view, allowing their attention to be focused on the stimuli on screen. This technique uses recording of a targeted behavior or skill as a way to expand an individual's capability to memorize, generalize, and even imitate a targeted behavior. These videos can be created in an effort to be used to instructionally emphasize specific social cues and communicative behavior as well as different procedures used for task completion. It is an effective method used within applied behavior analysis (ABA) programs for teaching targeted behaviors to children diagnosed with ASD.

This method of teaching skills to others consists of teachers, parents, and even supervisors using video recordings of a demonstrated behavior as a way of teaching a new or desired behavior. There are several avenues where video models have been used, and these methods are supported by research. Video modeling is able to be used across a multitude of settings, populations, and behaviors. It is used as an approach in training where a service recipient views a recording of a particular skill or behavior that should be imitated. This technique is

able to be utilized as a stand-alone intervention or in conjunction with other components as an intervention package. Behavior analysts can benefit from knowledge in this technique as well as how to integrate this intervention to improve the performance of other service recipients and staff in human service settings.

The popularity of video modeling continues to rise particularly as instructors look for methods to meet the instructional characteristics of individuals diagnosed with ASD and for effective teaching tools within the work environment. It is appealing to those who view live models or live demonstrations to be time consuming. Additionally, it has been found that video modeling can result in quicker rates of acquisition and increases in generalization than when compared to the results of live modeling (Charlop-Christy et al., 2000). Video modeling can ultimately be more cost efficient and require less training time than live modeling.

In this course, participants will learn (1) to identify the various applications of video modeling available for staff training and service recipients, (2) to describe the benefits and limitations associated with video modeling, and (3) to delineate the process for creating video models to use as training materials for trainees and organizations.

Section 1: Overview of Video Modeling

A multitude of research has supported the use of video modeling with a vast array of populations, across a variety of settings, and for implementation with different targeted behaviors. As an example, video modeling has been effectively implemented with children both with and without disabilities (Godish, Miltenberger, & Sanchez, 2017), athletes (Quinn, Narozanick, Miltenberger, Greenberg, & Schenk, 2020), and various other professionals. Additionally,

thousands of individuals around the world learn different skills and how to complete tasks (i.e., applying makeup, preparing a desired meal, learning a different hairstyle) by watching videos and models within videos that are available through different social media outlets.

The theoretical roots of video modeling rest within the social learning theory work conducted by Bandura in 1969. This work focused on one's ability to learn through means of observing. In order for observational learning to be successful, there are four components that must be present: attention, retention, production, and motivation. When an individual is able to watch the consequences that occur with a targeted behavior as it is exhibited by someone else, this can serve to either reinforce or punish the individual that is viewing the demonstration. While some individuals may view demonstrations as a way of learning or gathering information from their environment, individuals with ASD often do not engage in incidental learning. Therefore, if an individual diagnosed with ASD is able to view another individual receiving praise for beginning a task immediately when asked, they may be more likely to start their work immediately as well, as long as praise acts as a reinforcer for them. The principles that are embedded within social learning theory often contribute to the effectiveness that is encompassed within video modeling (Aspy & Grossman, 2007).

The act of imitation is a type of social learning that is considered complex. It allows a learner to benefit from the modeling that is demonstrated by an individual that is skilled in completion of a targeted behavior or task. Imitation requires an individual to be able to discriminate who they are supposed to model as well as what they are supposed to model. It also requires that an individual have a frame of reference that guides them in the outcome of the model and the viewer. Often, visual supports can assist an individual with determining the location of the appropriate frame of reference.

Visual supports can be utilized as a helpful instructional strategy for individuals either with or without a disability. Live modeling and video modeling are both considered to be two different forms of visual supports (Charlop-Christy et al., 2000). They have been used to effectively teach targeted behaviors and to also demonstrate these targeted behaviors across a variety of settings.

Video modeling has been utilized as a tool to aid in the development of various skills for individuals diagnosed with ASD since the late 1990s. Although advancements have been made concerning the medium used to record and deliver the video model, the defining characteristics that pertain to video modeling are still relatively unchanged after all of these years.

Video modeling is known as a method of training that allows a learner to watch a video that demonstrates the behavior (i.e., modeling) that needs to be displayed (DiGennaro Reed, Blackman, Erath, Brand, & Novak, 2018). This particular approach to training can be used on its own or in combination with other instruction conducted through video or computer. Video-based instruction is known as a package used as an intervention that can include instructions, narration conducted through use of voice overs, pictures or diagrams, video modeling, and prompting (Park, Bouck, & Duenas, 2018). All of these components could be included together as a training that can be viewed as a video file at a later time. Computer-based instruction is known as an approach to training where the information is made available through a computer or website. Learners are then required to actively respond and participate with the content that is provided (Geiger, LeBlanc, Hubik, Jenkins, & Carr, 2018).

Video modeling has been shown to improve staff performance within the human service industry regardless of whether or not the method of training is delivered alone or as part of a package of treatment interventions (Marano, Vladescu, Reeve, Sidener, & Cox, 2020). Additionally, the use of video modeling can be

integrated during different steps involved in training and for use with a multitude of procedures as well as across a variety of settings.

Furthermore, video modeling has been noted to be a successful intervention for children diagnosed with ASD for several different reasons. When video modeling is utilized as an intervention tool, it is able to capitalize on the visual preferences that are demonstrated in individuals diagnosed with ASD. The screen that the video model is displayed on offers a restricted view, allowing the focus of an individual to be on particular stimuli while decreasing their potential to attend to irrelevant items within the environment. Items that contain screens are also highly motivating with reinforcement to attend being built right in. Lastly, individuals diagnosed with ASD tend to pay attention for longer periods of time when viewing an item on a screen when compared to a live presentation of the same information.

Training at Different Stages of Work Opportunities

It is important to note that training that includes the use of video modeling has been implemented with various skills, in different settings, across populations, and at different stages of work opportunities. Some of these work opportunities include preservice training, in-service training, and professional development opportunities. For example, video modeling can be integrated with voice over instruction during preservice training as a method for teaching new staff how to implement different teaching strategies with the service recipients they are working with. Through the training, the staff can be allowed to watch a video model that demonstrates role playing. The voice over instruction can be conducted with the video model and used to describe each of the steps that are being conducted during the training. Research has shown this type of training to

be effective and able to be generalized to other tasks (Catania, Almeida, Liu-Constant, & DiGennaro Reed, 2009).

Additionally, video modeling can be used during in-service training as a part of ongoing training for staff within an organization. Staff can initially receive training on an intervention or technique through either verbal or written instructions, modeling, role-play situations, or through volleying of questions and answers between a trainer. As part of ongoing training opportunities, staff can then watch a video model of how the intervention or technique is to be implemented. Staff could then be provided with the opportunity to implement the intervention or technique on others in an effort to improve accuracy. Research has shown that this method of training to also be effective and able to be generalized during novel situations (Collins, Higbee, Salzberg, & Carr, 2009).

Furthermore, video modeling can be utilized to advance employee skills through professional development skills training. For example, this training can be used to train staff on how to appropriately receive feedback. Research has used computer-based instruction that integrated video modeling with voice over instruction to effectively teach staff feedback reception skills (Walker & Sellers, 2021). Video modeling packages can be effective intervention options for teaching professional development skills that are more complex and advanced.

In addition, another staff training procedure that could be integrated into preservice, in-service, and advanced development of various skills is known as pyramidal training. This method of training utilizes an individual that is considered an expert to train a group of individuals on how to train additional members. Research has used video-based instruction that included the implementation of video modeling to teach staff members on how to use behavioral skills training (Erath, DiGennaro Reed, & Blackman, 2021). These staff members then were able to train additional employees within the organization on the material. Results of

this research indicated that video modeling could be used in conjunction with pyramidal training to teach staff how to train others as well as have the results of the study generalize to other training scenarios.

A Packaged Intervention or as a Training on Its Own

Video modeling is a treatment intervention that can either suffice on its own or be included as part of a packaged intervention. Typically, video modeling has been known to be a part of video-based instruction or computer-based instruction that consist of different components that are included. These different components that are included can be added at several points within the training: to the video model, prior to the behavior being exhibited, or after the performance of the behavior. One component that is frequently added to the video model is that of the voice over instruction. Most video models do include this component; however, guided notes are also frequently added as they assist the trainee with knowing the important pieces of the information to pay close attention to. Active responding questions (i.e., quiz) may also be made available to the trainee either during or after the video model training has been completed. Written instructions can also be included for the trainee to review either prior to the performance or after the video model has been completed. These written instructions include information regarding the behavior that they are expected to perform and can include a specific task analysis that aligns with the behavior, pictures, or written text. Job aids are also a useful tool that can be integrated into training that provide information about the targeted behavior that is being demonstrated within the video model. This tool can use a checklist that outlines the steps required to complete for the task or a flow chart that provides an overview of the task included in the video model. Once the video model has been completed, consequences can be provided to the trainee to further ensure that the video model is efficient at teaching the skill. Often, performance feedback is delivered to

a trainee that assists with increasing an individual's performance as well as sustaining their learned behavior. These additional components are designed to assist with increasing the efficacy of video modeling so that a trainee can learn a desired behavior or task. Without these additional components, video modeling on its own may not be sufficient.

There has been a multitude of research conducted that demonstrates that video modeling as an intervention on its own may not be effective or efficient for some individuals undergoing training. While there may be times when video modeling initially increases the performance of trainees, it has been noted that it may take some individuals multiple times of watching the video model before they are able to meet mastery criterion (Lipschultz et al., 2015). The results of this research revealed that video modeling alone may not be the most effective way to train individuals and that it is likely that additional components (i.e., performance feedback, role-play) will be needed to achieve the desired results. Therefore, when video modeling training is being created, it is important to consider the addition of other components as a method for strengthening the effects that are demonstrated through use of the video model.

Video Model Benefits

There are several benefits of video modeling that contribute to this training method being more desired than in vivo/live training at times. After a video model that demonstrates 100% treatment integrity has been recorded, the use of this video model will ensure that each trainee that watches the intervention will be provided the same demonstration each time. On the other hand, the use of in vivo training necessitates that the trainer demonstrates the skill perfectly and the same way each time that the training is provided to others. Performance of a skill or behavior that is conducted through live training could increase the chances that

the trainer makes a mistake while providing the demonstration. This error would cause the procedural integrity of the training to decrease.

The integration of video modeling provides the trainer the opportunity to prepare, record, and integrate multiple exemplars so that a variety of scenarios are able to be depicted that represent different experiences that one may encounter while on the job. If a trainer were to provide multiple exemplars while engaging in the use of in vivo modeling, this may not be possible to conduct or appear cumbersome. Video models are able to be recorded within the environment that one is employed in whereas an in vivo example may only be able to be provided within a different context and require that the trainer/trainee perform the experience.

A video model is able to be viewed by a trainee at different times of the day, with multiple opportunities, and be kept for later training opportunities if necessary. If it is necessary that additional training is needed, then a video model can be easily rewatched. On the other hand, an in vivo model would require the individual that is training to schedule an additional opportunity for a demonstration to take place. This may not be easy to facilitate as the trainer may have other responsibilities or obligations to uphold. Additionally, a recording of a video model may be able to be distributed to other individuals that are required to view the information despite where they live or work through the use of an organization's internal system. This could be completed through server access or even sent via email. In vivo training, on the other hand, would require the trainer to travel from one location to another, depending on where trainees resided that needed to have access to the training material. The trainee and trainer would need to be in the same location at that same time in order for the training to be able to take place.

Although there may be several benefits that are associated with the use of video modeling, organizations may still choose to use in vivo modeling for other

reasons. The upfront investment for creating video models of tasks may be too much of an investment of resources for an organization. In order to create a video model, a trainer will be required to delineate the critical components of a behavior or skills that are to be modeled. This can be completed through the use of a task analysis. Additionally, the setting in which the video model will be required will need to be determined. If the trainer decides that voice over is also needed as part of the video model, a narration script will need to be prepared prior to the recording being finalized. Individuals that will be a part of the video model, used as actors, will need to be recruited, vetted for their role, and trained regarding the part that they will reenact during the video model. Lastly, the video model of the behavior or task will need to be recorded and edited. While the upfront cost of completing a video model may be more than in vivo modeling, the long-term benefits of video modeling can easily justify this method as a training option.

As in vivo modeling requires that a trainer be present for each opportunity of training, this may further demonstrate why video modeling may be a more efficient training platform for an organization. It may be a more cost-effective approach than in-person training if the video model is able to be used multiple times for different training opportunities. However, if a video model will not be needed on a frequent basis, then it may not be beneficial to invest in this training model. Also, if the task or behavior selected for training is difficult to reenact or capture on a video, then an in vivo model may be better suited for these types of situations. For example, a video that captures on-the-job modeling of how to interact when an individual exhibits severe self-injurious behavior may be difficult to reenact as various dimensions of these behaviors will not be able to be recorded on video. There are critical components of these exhibited behaviors that could be recorded through use of a video model, though. Therefore, it is recommended that video modeling is able to be utilized for training opportunities

that are able to be frequently delivered to trainees, as this will allow for the initial cost of the training platform to not appear as substantial.

Section 1 Personal Reflection

Is there a skill or behavior that you feel would be best demonstrated through use of video modeling within your organization? What are some first steps that you could take to complete a video model of a desired skill or behavior?

Section 1 Key Words

Computer-based instruction - known as an approach to training where the information is made available through a computer or website

Job aids - a useful tool that can be integrated into training that provides information about the targeted behavior that is being demonstrated within the video model

Pyramidal training - this method of training utilizes an individual that is considered an expert to train a group of individuals on how to train additional members

Video-based instruction - known as a package used as an intervention that can include instructions, narration conducted through use of voice overs, pictures or diagrams, video modeling, and prompting

Video modeling - a method of training that allows a learner to watch a video that demonstrates the behavior (i.e., modeling) that needs to be displayed

Section 2: Video Modeling Variations

There are several variations of video modeling that should be considered when conducting training opportunities. The different variations of video modeling are often combined as a trainer is required to meet the various needs of a particular setting, group of trainees, or organization.

Choosing the Performer

Selecting the performer, otherwise known as the actor(s) in the video model, is a key first step when creating a video model. A video model often uses different confederates, individuals that simulate a role, to create training material. There are several advantages to using confederates. One advantage to using a confederate is that a script is able to be provided of the desired responses that the models are to exhibit. This is beneficial as it allows for a full range of stimulus conditions to be captured that could occur within an organization as well as the responses that may occur with each of these conditions.

For example, if a video model wanted to demonstrate the different types of responses that could occur within a discrete trial training session, then the trainer would need to ensure that they incorporate material that highlights how an individual should respond when a correct response is provided (i.e., praise), when an incorrect response is provided (i.e., error correction procedure), and when no response is provided at all (i.e., providing prompts as they align with the prompting hierarchy). By using a confederate, all of this information can be demonstrated and ensured that each type of response is noted. This may also be able to be used to promote generalization. When looking at using in vivo training, the use of a service recipient may introduce various errors during the demonstration which may disrupt the quality of the video as well as hinder the

individual from being able to demonstrate the targeted skill or behavior. One potential limitation that does exist when using confederates is that a simulation of an event or experience is being captured instead of a real-world example. This may not completely cover the experience or encounter what one would come in contact with which may hinder the trainee from developing skills that could generalize to the workplace setting.

The Perspective Used in Video Model

When determining the point of view or the perspective that will be selected for use in the video model, all attempts should be made to limit both irrelevant and distracting stimuli. Additionally, a more realistic view of the natural setting should be encompassed, and the saliency of discriminative stimuli should be increased (Mason, Davis, Boles, & Goodwyn, 2013). The saliency of discriminative stimuli can be increased by changing the angle of the camera so that antecedents that are signaling a trainee's behavior can be focused on. Point of view has options that are either in first person, third person, or a combination of both of these perspectives. The training material and experience allotted for the trainees can be further enhanced by considering the different perspectives to use within the video model.

If the first-person point of view perspective is selected for use, the trainer should film the video model from the performer's perspective so that the trainee is able to observe the perspective of the performer as they demonstrate the desired skill or behavior. There are limitations that are associated with this perspective, though. One limitation is that recording of the video model may take special consideration for the different camera angles that are needed so that specific aspects of the environment are able to be included in the frame. Another

limitation of this perspective is that it can only be used with a reduced number of targeted behaviors and skills.

The third person point of view, on the other hand, requires that the trainer records the video model from the viewer's perspective so that the trainee is able to observe the performer. A benefit of recording the video model from this point of view is the video would capture the performer's body and positioning as well as how they are integrated within their environment. This view demonstrates a limited bias toward any one given perspective. This means that the performer may be as salient as various other stimuli that are found within the environment instead of one only being able to see the stimuli as the performer is able to view it. There are limitations associated with this perspective, though. One limitation is that the trainee that is viewing the video model may only be able to view the skill or targeted behavior opposite of how it should be performed. There may also be an increased production effort that is needed so that the performer's body positioning is considered as it relates to distracting stimuli that may be found within the environment.

When reviewing research conducted on the point of view used in video models, it has been found that third person point of view is more common than first person point of view when teaching and demonstrating various skills to individuals with disabilities (Mason et al., 2013). Despite the point of view that is considered for a video model, a trainer should attempt to select a point of view that is best suited for guiding trainees on how to correctly implement or demonstrate the desired skill or targeted behavior.

Lastly, training materials can use a video model that encompasses both perspectives. The relevance of the training should be considered, and the point of view should also be evaluated as a method for increasing the saliency of discriminative stimuli that are relevant. For example, research has shown that an

example of training that has used both perspectives first began with a third person point of view of a video model with voiceover that was used to demonstrate each step of a preference assessment (Delli Bovi, Vladescu, DeBar, Carroll, & Sarokoff, 2017). Then, an additional portion of the training used first person point of view to demonstrate the trainer modeling the steps of completing a preference assessment. This intervention was able to show that staff could achieve mastery after limited training sessions with performance reaching 100% during probes.

Video Self-modeling

Video self-modeling integrates the recording of an individual themselves performing a desired behavior or task over and over again. This is different from basic video modeling as the main person involved in the video is the learner themselves. Then, these recordings are edited to create a final version of the desired behavior or task where the behavior or task is being demonstrated correctly. The individual will then only view the video of themselves completing the behavior or task correctly. Additionally, this will allow the learner to increase their confidence in their ability to complete the behavior or task. In order for video self-modeling to be successful, the learner will need to be able to recognize themselves in the video. If the learner is not able to identify themselves in the video, then the benefits of having the learner act as their own model for a task or behavior may be lost on them. Self-recognition occurs approximately around 18 to 24 months in neurotypical children. Therefore, it may be important to note that this skill may or may not emerge at a later time for children with a disability. One way to determine if a child is able to recognize themselves is to make a dot with a marker on the nose of the child. Then, the child should be asked to look in a mirror. If the child reaches for their own nose while looking in the mirror, then the child is able to recognize that the image in the mirror is of themselves. Another way to determine if the child is able to self-recognize is by having them look at

pictures of themselves to see if they are able to recognize and identify themselves.

This approach may be more time consuming and require various technical skills as editing of the recordings is required. However, this approach has been noted as being effective at teaching various skills. It has been used to improve language and social skills (Bellini & Akullian, 2007), improve on-task behavior (Coyle & Cole, 2004), and to teach an individual to follow classroom rules (Cihak, 2011).

Additionally, within the home environment, caregivers have been noted to teach a variety of skills including fine motor skills, self-help skills, and play skills. When using video modeling to teach children to learn fine motor skills, the screen size that the video model is viewed on may impact the acquisition of the skill (Mechling & Ayres, 2012). The acquisition of skills continued to increase; however, the use of a larger screen has been associated with more correct responses.

There are two different kinds of video self-modeling: Positive Self-Review and Feedforward. In a Positive Self-Review video, the main outcome is to increase the frequency of behavior or skill that is already present in the learner's repertoire. For example, if a learner already can demonstrate that they can raise their hand when seated at their desk to answer a question but is unable to demonstrate this skill consistently, then a video could be created of this learner successfully raising their hand while seated at their desk to answer a question that is asked of them. Often, these types of videos do not require much editing to be done to remove any verbal or physical prompts from the recorded attempts. Since the learner is already able to demonstrate the skill, typically no verbal or physical prompts are needed to elicit the behavior or skill. However, a recording of this type may be difficult to obtain if the targeted behavior or skill occurs at a low frequency. The other kind of video self-modeling is Feedforward. In this type of video, the learner will watch themselves performing a skill or targeted behavior that is a little

beyond their current capabilities. There are several situations where these types of videos are used. One scenario is when the learner is able to perform some but not all of the targeted steps required to perform the targeted skill or behavior. Another scenario where these videos are used is when the learner is able to demonstrate the skill at a low level of mastery. Lastly, these types of videos are helpful if the learner needs some level of support to complete any of the behaviors necessary to demonstrate the targeted skill. For example, if a learner is unable to demonstrate that they can raise their hand when seated at their desk to answer a question without assistance, a video could be created that shows the learner being able to independently raise their hand. In the video, the learner would be assisted by another person to raise their hand and then the prompt would be removed when the video is edited. Feedforward videos will often require more editing than Positive Self-Review videos because they will need to have the prompts removed from the footage.

Video self-modeling can be effective at increasing the frequency of a targeted behavior that does not occur often, shaping and refining any behaviors that are already present in a learner's repertoire, and teaching new behaviors or skills. By conducting these items, a learner's independence can be increased when performing a skill or targeted behavior. An additional benefit of recording the learner in a video is the movie star effect where individuals may increase their ability to perform an expected behavior because they are being filmed or because they know they are being recorded. This can often make for better footage to pull a final product from, require less time to edit any footage, and begin the implementation of an intervention.

There are several steps that should be included when creating a video self-model. There are some of these steps that are similar to the process outlined for creating a basic video model; however, some of the steps outlined are specific to the video self-modeling process.

- Step One: Determine the skill or targeted behavior that needs to be addressed

  When determining the skill or targeted behavior that will be included in a video self-model, it is important to keep in mind that the actor will be the learner. The learner should have some capacity to be able to demonstrate the targeted skill or behavior either with prompting or in an inconsistent manner.

- Step Two: Determine and gather the materials that are needed

  The process of creating a video self-model will go more smoothly and efficiently if the trainer is able to first determine and gather all of the materials that will be needed. You will need to ensure that you have the participation of your learner. If your learner requires prompting to complete the task, you may also need two additional individuals. One of these individuals will be used to prompt the learner while the other will be used to hold the camera. If the targeted behavior or skill does not require much movement to complete, the trainer may be able to use a tripod to hold the camera instead of needing the additional individual to assist. Also, depending on the skill level of the learner and their independence with completing the skill, the trainer may be able to record the targeted behavior or skill without needing an individual to assist with prompting. The trainer should also take the time to gather any visual supports that may be needed.

  In order to create the video self-model, the trainer will need a video recording device to capture the footage. Editing software will also be required if the trainer needs to edit any of the footage that is gathered. Most of the video recording devices come equipped with editing software; however, it is important to ensure this is able to be accessed on the device.

Additionally, the trainer should ensure that all of the items that the learner will use in the video are gathered prior to filming. These items that the learner will use will be dependent on the skill that the trainer is trying to teach. Lastly, ensure that playback equipment is available so the learner can view their video once it is completed.

- Step Three: Complete a task analysis of the targeted skill and collect baseline data

  Prior to creating the video self-model, a task analysis should be completed of the targeted skill and baseline data should be collected. A task analysis allows the trainer to identify all of the key behaviors that are to be demonstrated within the video model. Additionally, baseline data are important to collect so the trainer can determine exactly what the learner is capable of doing and the level of support that they will need to be successful.

- Step Four: Create a plan for the recording of the video

  It is important to thoroughly plan all aspects of the video prior to recording any footage. First, the trainer should determine the type of modeling video that will be created so that the type is able to best match the learner and the targeted skill or behavior. Then, an outline should be created that delineates all of the components to be included within the video model. Although a script will not be able to be created for the learner, it is best to have a discussion with any of the actors involved so they are able to know and understand the trainer's expectations and plan for the video.

- Step Five: Record the video

The type of video self-model that the trainer is creating will determine how the recording of the video will take place and the methods used for gathering the footage. However, it is important that the environment is set up so that it best elicits the targeted behavior. The learner can be recorded in a setting with a naturally occurring situation or in an environment that is artificial or with a prompted scenario.

- Step Six: Edit the captured video footage

  Within this step of the process, the trainer will create a video self-model video from the footage that was captured in step five. It may take some time to learn the editing software and this time will decrease as the trainer becomes more familiar with the process and the software that is being used to edit the footage. It is important to understand that the video may contain flaws and not be absolutely perfect. It is vital to know that the amount of time that is put into making the video flawless may not pay off in the end. Often, a less enhanced video can be just as effective as a professional video.

- Step Seven: Allow the learner to see the video

  There are several options that are available for video playback. A television, computer, portable DVD player, smartphone, and many other options can be used to play the video on for the learner. The learner should be allowed to watch the video from the beginning to the end without any interruptions. It is important to keep this viewing time free of social obligations and without others interjecting or making comments. If these things occur, then the viewing time for the learner is no longer an individual activity and can place demands on the learner to respond. This may contribute to some unwanted behaviors during this process.

- Step Eight: Guide skill development after the video has been viewed

A video self-model is not considered to be a stand-alone intervention, and skill facilitation should be continued after the video has been viewed by the learner. Although a learner may be able to respond immediately after viewing the video, it is important that the trainer continue to facilitate the learner's skills by integrating and implementing other teaching strategies as well.

- Step Nine: Track the learner's progress to assess if changes should be made

  The trainer will need to determine if progress has been made by the learner since the video self-model was implemented with the learner. Data should be collected on the learner's ability to demonstrate the targeted skill or behavior. The data collected during this step can then be compared to the baseline data collected earlier to determine if sufficient progress is being made or if a change should be made to the intervention.

- Step Ten: Problem solve if progress is slow or not sufficient

  There are several things that the trainer should consider if the learner is slow to make progress, making less progress than expected, or not making sufficient progress. Within this step, several questions can be asked to determine the next course of action:

  - Is the video being shown often enough for the learner?
  - Is there a different time of day that is more suitable for the video to be shown?
  - Does the environment contain too many distractions where the video is being viewed?
  - Does the video take too long to watch?

- Is a different type of video modeling better suited for this skill or the learner?
- Are there too many steps or are the expected behaviors too far out of reach for the learner to complete?

Keep in mind that only one change should be made at a time or it will be difficult to determine which change was able to make the biggest impact.

Exemplars Used in Video Modeling

As a video model is developed, consideration should be given to the number of exemplars that will be demonstrated within the training material. There are different variations provided among the research for the number of exemplars that are used within video models. This is a decision that will need to be made by the trainer with consideration for the material being covered and the audience for which the training is being created for.

In some integrations of video models, exemplars of each step of a task were included. On the other hand, some applications have included exemplars that denoted the entire procedure. Additionally, other approaches include the combinations of these applications where one or more exemplars may be included of each step of a task with the addition of one or more exemplars of the entire procedure.

By using multiple exemplars of a desired skill through use of either step-by-step method or full method, this encourages the generalization of such skills across settings, individuals, and instructional materials. Although it cannot be certain the number of exemplars that are needed for this to occur, it is recommended that at least one exemplar be incorporated into the training for each step within the task and at least one exemplar that covers the entire task (Deliperi et al., 2015).

Nonexamples

A nonexample is considered to be an irrelevant or incorrect behavior that a trainer will incorporate into a video model. These nonexamples act as a guide for trainees to demonstrate behaviors that should not be performed. By showing nonexamples, this may help a trainee to be able to determine different rules that they should apply about what they are not to do. Any explanation or rationale that is provided along with a nonexample should assist with the generation of rules that a trainee would develop to help them understand why they should not exhibit the modeled behavior. These rationales or explanations could also assist with helping a trainee avoid an undesirable or unsafe situation that they may encounter within their environment. In research conducted on the use of nonexamples, nonexamples are infrequently used in video models (Marano, Vladescu, Reeve, Sidener, & Cox, 2020); however, nonexamples should be considered as an additional component to assist trainees with learning the material.

Nonexamples may not be included in video models as they do take more time to create and record. There may also be a lack of agreement about commonly exhibited errors within a particular procedure. Additionally, a trainer may not know which behaviors should be prioritized to include as nonexamples or what the opinion may be of a trainee that may be inadvertently imitated when a nonexample is demonstrated.

If a trainer plans to include a nonexample within their video model, it is important to ensure that the nonexample is relevant for the on-the-job performance that is being depicted. A trainer should begin the process by determining the common mistakes that are made concerning the procedure or task that is being included within the video model. This can be completed by reviewing any literature available that discusses the steps that trainees complete incorrectly, talking with

people that typically complete the task about common errors that are made, or by conducting a descriptive or retrospective analysis. A retrospective analysis includes reanalyzing any data that already exists to determine any errors that are commonly made when a task is performed. A descriptive analysis requires that new data are collected to determine any common errors that are made by staff that have completed the task. By gathering data and collecting information from relevant stakeholders, this can provide the trainer with information as it relates to the specific setting, any barriers that may be present as they align with completing the task, a rationale or explanation for why the task should be demonstrated a specific way, and different methods for avoiding common mistakes that are made.

A video model that includes the use of nonexamples as a training tool can provide several advantages. Overall, the use of nonexamples can help the trainee develop a sense of rules so that they can not only avoid a dangerous situation but that they can also increase the probability that outcomes high in quality will be demonstrated. A trainee will be guided to avoid making procedural integrity errors which will improve training outcomes immensely.

Allotment of Video Viewings

A trainee may be allowed to watch a video model at least one if not more times. A trainee may require several viewings of a video model, especially if the task that is being taught is more complex to learn. By watching a video model more than one time, this may ultimately reduce the total time spent in training or assist with a higher level of performance than only watching the video model one time.

Additional viewings of a video model can be arranged in a variety of ways. A trainer could set up a video model so that the trainees are able to view the steps of a task initially. Then, in follow up, the trainees could watch an entire performance of a task through a different viewing of a video model. Another

method is to teach each trainee how to rewatch the video. Depending on the format that is used to display the video model, the trainee may need to be informed on how to start, pause, stop, rewind, or fast forward so that they can watch the video model at their own pace. If a trainee does not have control over their playback capabilities (i.e., training conducted in a group setting), then the trainee could have additional time made available to them so they could re-watch the training video.

An advantage of watching a video model more than one time is the trainees that view the video model are being repeatedly exposed to correct demonstrations of a task. This may help with increasing the maintenance and generalization of a skill. It also can allow a trainee to see any steps that they may have missed in their implementation of the task. A limitation, though, of watching a video model multiple times is that it can increase the duration of the overall training.

Text Included on Screen

A video model can include the use of text that is noted on screen. This is denoted by words being presented on the screen that the video model is presented on as a method of highlighting any relevant steps to be completed within a specific task, different actions that are demonstrated by the performer within the video model, or any additional stimuli that the trainee should be made aware of. This text that is available on screen may be considered helpful if a trainer is not able to be present when the video model is viewed or if additional materials such as guided notes are not provided to the trainee. The main reason for utilizing text on the screen is for relevant discriminative stimuli to be highlighted and for covert behavior to be described as a way of guiding the trainer's attention.

There are several ways that on screen text can be presented. A trainer can use one or two words at the top of the screen that the video model is presented on as a

way of identifying relevant stimuli present within the environment or the behavior of the model as they are demonstrating it. Another example of a use for on screen text is through instructions that include a brief description of the behavior that is being demonstrated. These instructions could be placed at the top of the screen or on a slide that is embedded within the video model. These instructions could also be used to provide an overview of the steps that are completed within the task being demonstrated.

Although on screen text is an additional component that can be used to enhance video model demonstrations, few studies have shown video models as including this feature. Within the research found, only 11% of the studies included the use of on screen text within their video model (Marano, Vladescu, Reeve, Sidener, & Cox, 2020). Justification was not noted for the small percentage of use of this component; however, it is important to note that the use of on screen text can be integrated in several ways which provide flexibility for training. Discriminative stimuli can be highlighted to direct the trainee toward relevant information within the video model. Both covert and overt behavior (i.e., not shown, shown) can be described through a description of the behavior included on the screen. A clear limitation of this component, though, is that a specific level of reading comprehension will be required by the trainees. Additionally, the use of on screen text may hinder one's view of images on a screen. These issues can be reduced by having a trainer provide pictures or diagrams to help with understanding of the material that is presented, allowing opportunities where feedback is provided and questions can be answered, and utilizing voice over instruction within the video model.

Voice Over Instruction

Voice over instruction can be used in similar ways as on screen text in that this component can be used to increase the saliency of specific stimuli within the video model and describe both covert and overt behaviors. A trainer is able to utilize voice over within a video model by recording a narrative that can be used to describe a behavior or task or even provide a set of instructions for completing a task. This recording can then be overlayed onto the video. More than half of the studies evaluated regarding video models found that voice over was integrated within the video model (Marano, Vladescu, Reeve, Sidener, & Cox, 2020). Some trainers may find that voice over is more useful when compared to on screen text. Since on screen text requires some level of reading comprehension, voice over can be used to mitigate these concerns. Additionally, with on screen text, the text itself may obstruct the view of an image that a trainee is attempting to view. With voice over instruction, this concern can also be mitigated yet still provide the same information to a trainee that they would receive with on screen text.

A limitation of voice over instruction is that it may require the use of additional resources to ensure success of the component. For example, a microphone may be needed to record the narrative, a software program may be needed in order to edit the material into the video model, and speakers may be necessary so that the trainees are able to hear the voice over instruction. These limitations, though, can be mitigated through the use of smartphones, headphones, or free voice and screen recording software that is available.

Supplemental Training Components

There are several supplemental training components that can be considered for integration either into video models or without video models as a way of

enhancing the material being presented. These considerations include the use of instructional materials and active responding activities.

Instructional Materials

Aside from the integration of on screen text within a video model, a trainer may decide to use other forms of instruction to enhance training materials. Some of these instructional materials include enhanced written instructions, user guides, slides from a presentation, and employee manuals. While instructional materials may enhance the performance of a trainee, it is important for a trainer to understand that not all instructional materials will have the same effects on trainees. Instructional materials are not advised to be used alone and instead should be used in conjunction with other training components. Video modeling and active responding can be used alongside instructional materials to enhance the training that one receives.

Active Responding Activities

An active responding activity requires a trainee to engage in an overt behavior that provides a demonstration of the task or skill that they have been taught. Several examples of active responding activities include quizzes, ratings, role-play, and guided notes. As a trainee completes the active responding activities, a trainer can view their results and determine the areas of a task or skill that are able to be demonstrated well and the other components of the behavior that may need further guidance or training. Research has shown that approximately 58.6% of trainings have used some kind of active responding activity to enhance training (Marano, Vladescu, Reeve, Sidener, & Cox, 2020).

A benefit of utilizing active responding activities is that a trainer is able to work with a trainee and address an area that needs further instruction prior to the

trainee implementing the skill or task on their own. However, a trainer should be aware that not all active responding activities test a trainee's ability to correctly implement a task or behavior and instead test the knowledge that one may have in a specific area. Therefore, it is advised that a trainer should incorporate some role-play tasks where feedback is able to be provided to the trainee based on demonstration of the skill or task.

Section 2 Personal Reflection

Which video model variation would you prefer to take part in when learning a new skill or behavior? How would you like to see additional components integrated so that the training material you are learning can be enhanced?

Section 2 Key Words

Active responding activity - requires a trainee to engage in an overt behavior that provides a demonstration of the task or skill that they have been taught

Confederates - individuals that simulate a role

Descriptive analysis - requires that new data are collected to determine any common errors that are made by staff that have completed the task

Nonexample - an irrelevant or incorrect behavior that a trainer will incorporate into a video model to act as a guide for trainees to demonstrate behaviors that should not be performed

On screen text - words being presented on the screen that the video model is presented on as a method of highlighting any relevant steps to be completed within a specific task, different actions that are demonstrated by the performer

within the video model, or any additional stimuli that the trainee should be made aware of

Retrospective analysis - includes reanalyzing any data that already exists to determine any errors that are commonly made when a task is performed

Section 3: Step by Step Guide for Creating a Video Model

There are several steps that should be considered when creating a video model. Within each of these steps, there are several processes that should be completed and considerations that should be reviewed as a way of developing training materials that meet the needs of the trainees and organization. By following these steps outlined, this guide will assist with the creation of a video model designed to meet the needs of the trainees within an organization.

Ensure the Necessary Time and Resources Needed

Within this first step, it is important for the trainer or developer of the video model to plan the content that will be included within the video. This content can include the setting in which the video model will be recorded, the performers that will be needed to demonstrate the skill or behavior, the behavior that will be demonstrated, and the number of examples and nonexamples of the skill or behavior that will be included within the video model. As this step is completed, it is important for the trainer to consider several things. The trainer should consider (DiGennaro Reed et al., 2023):

- Who will be recorded within the video and if there are any privacy concerns?

- What setting will the model be recorded?
- What is taking place during the recording?
- Does a task analysis exist of the behavior that is going to be demonstrated?
- How many exemplars will be included within the video model?
- In what contexts should the exemplars be displayed in?
- Will nonexamples be included within the video model and how many will be included?
- How will a common error be determined?

Additionally, the performers and other actors that are needed to demonstrate the training material will need to be identified. Volunteers will need to be solicited that can serve as a model or participate as an actor within the video model. Any consent forms that are needed should be obtained within this step. Furthermore, materials that will be used within the recording of the video model should be gathered. These materials can include a video camera, any video-editing software that will be used, microphone, speakers or any other material that will be required. Throughout these tasks, the trainer should also consider some additional items (DiGennaro Reed et al., 2023):

- Who will model the targeted skill or behavior?
- Who will interact with the model during the recording?
- Will interactions among actors be simulated?
- Have commitments from volunteers been obtained?
- Has written consent for video recording been obtained?

- Is there any equipment that will need to be purchased?
- How will the equipment be stored so that it is safe?

Record the Video Model

The next step of creating a video model involves recording the video footage that will be needed for completion of the training material. In order to record the video footage that is needed, it is best to use behavioral skills training to help train the performers that will be involved with the video model. Throughout this training, the trainer should consider some additional items (DiGennaro Reed et al., 2023):

- Should first or third person point of view be used?
- Which video modifications are necessary for capturing the best video if using first person point of view?
- Where will the camera be positioned to capture the targeted skill or behavior with minimal distractions in view?

Next, the trainer should make sure that the video footage that was captured completely demonstrates each step within the targeted skill or behavior individually as well as together in a synthesized format. Several exemplars of the targeted skill should be recorded during this step as well as any nonexamples that need to be included in the training material. Additionally, the trainer should consider these additional components (DiGennaro Reed et al., 2023):

- Should each step be recorded separately or spliced from a recording of the entire task?
- How many examples of the targeted skill or behavior should be recorded?

- Will examples of the targeted skill or behavior occur with individual components of the task or in the synthesized format?
- How many nonexamples are needed?
- What nonexamples should be included within the training material?

Determine On Screen Text

An additional step that is required when completing a video model is determining the text that will be used on screen within the video model. A trainer should determine whether or not on screen text will be used or if other training components are able to be used to meet the same function. The trainer should consider these additional components (DiGennaro Reed et al., 2023):

- Is on screen text necessary within the video model?
- Do other training components meet the same function as on screen text?
- Is the reading level of the on screen text at or below the level that is expected of the trainees that will be reviewing the material?

Additionally, once these questions are able to be answered, the trainer should write the on screen text that will be included with the video model. As they do this, the trainer should consider these factors (DiGennaro Reed et al., 2023):

- Is the on screen text available on a separate slide or placed atop of the video model?
- Is the on screen text clear and concise?
- Does the text that is included follow the same order as other training materials provided?

- Are important overt and covert behaviors described?
- Does the text on the screen match any narration that is provided?

Then, the trainer should work to compose and embed the text that has been composed within the training material by using editing software. As the trainer works to do this, they should consider these points (DiGennaro Reed et al., 2023):

- Are the trainees able to clearly see the on screen text?
- Is the video able to pause while lengthy on screen text is presented so the trainee is able to read it?
- Is the font that is used for the on screen text either light or dark enough to read even as the image changes or moves within the video model?
- Is the on screen text large enough to be viewed?
- Does the on screen text allow a trainee to be able to view any important aspects of the video model?

Record Narration or Voice Over Instruction

Within this step of creating a video model, it is necessary to determine the necessity of narration. A trainer should determine if narration is required for the training material provided or if other material that has been provided for the trainees will meet the same needs. Also, they should take these items into consideration (DiGennaro Reed et al., 2023):

- Is narration required or are there other training components that can meet the same needs?

- Does the video model platform have the capacity to have audio capabilities?

If the trainer is able to determine that narration is necessary for integration within the video model, then the narration script should be written. While writing the narration script, the trainer should take these points into consideration (DiGennaro Reed et al., 2023):

- Is the written narration script clear and concise?
- Does the written narration script follow the same order as other training material that are provided for the trainees?
- Does the written narration script include descriptions of both overt and covert behaviors?
- Does the written narration script match the on screen text if it is used?

Lastly, the trainer should determine how to record and embed the written narration script within the video model. Several components should be considered as this step is completed (DiGennaro Reed et al., 2023):

- Is a microphone available to use while recording the written narration script?
- Does the microphone include a pop filter?
- Is there silence (i.e., absence of white noise) available in the background?
- Is the speed of the written narration script able to be matched with the speed of the video model?
- Are there any other sounds within the video model that need to be adjusted (i.e., someone talking)?

- Is the narration sound able to be balanced (i.e., is the narration at a point where it is loud enough)

Put Together the Video Model

As the trainer continues to progress through the series of steps required to complete a video model, it is important that once they complete the aforementioned steps, they then work toward assembling the video model. Within this step, the trainer should identify any software that is needed to edit and put together the video model. Additionally, there are other factors that the trainer should also consider (DiGennaro Reed et al., 2023):

- Will the video model require a significant amount of editing?
- If the video model requires significant editing, will editing software be used?
- If the video model does not require significant editing, will the trainer consider using PowerPoint or Keynote?

Next, the trainer will need to add the captured video footage, any on screen text that was created, and the narration that was determined to be needed to software that is being used to assemble the video model. While this is being completed, there are several factors that the trainer should consider (DiGennaro Reed et al., 2023):

- Will the size of the video model and the on screen text both be able to be seen on the device that the video is being viewed on?
- Is the narration that is included with the video model able to be heard while using headphones?

- Is the narration that is included with the video model able to be heard while not using headphones?

Lastly, the completed video that includes all components should be exported as a video model. This will allow the trainer to distribute the video to trainees and organizations that wish to view the material. Within this step, the trainer should also consider several factors (DiGennaro Reed et al., 2023):

- Once the video is created, will it need to be played across several different devices?
- If the video needs to be viewed across different devices, will the trainer be able to export the video as an MP4 file type?

Distribute the Video Model

As the creation of the video model comes to a close, the final step within this process is to distribute the video model to the trainees and organizations that have requested the training material. The trainer will need to determine where the final version of the video will be stored. Within this step, the trainer should consider several factors (DiGennaro Reed et al., 2023):

- Will the video be stored on the server within a specific organization?
- Will the video be stored in a location other than the company server?
- Will the video be stored on an individual device?
- Will the video be stored online?

Next, the trainer should decide to share the video model with the trainees that are required to view the material. This will allow the trainees to access the video

model as training on the covered material is needed. The trainer will need to consider some additional points when doing this (DiGennaro Reed et al., 2023):

- Will the trainees that are required to view the video model need training on how to access the video model?
- Will the trainees that are required to view the video model need training on how to view the video model?

Lastly, the trainer will need to arrange for the trainees to view the video model. The trainees will need to be able to demonstrate the modeled skill correctly after watching the video model. The trainer will need to ensure that the trainees are able to complete this skill accurately. Within this last step, the trainer will need to consider some additional factors (DiGennaro Reed et al., 2023):

- Have the trainees been able to have access to and view the video model prior to implementing the task or skill that is being modeled?
- What ways can the trainer ensure that the trainees are able to perform the modeled skill or task correctly?

Section 3 Personal Reflection

Among the steps mentioned for creating a video model, which step do you feel will require the most resources and/or be the most difficult to complete? Are there additional factors to consider when creating a video model that were not mentioned within this training?

Section 3 Key Words

Behavioral skills training - a method that is used to instruct staff, parents/ caregivers, and anyone working with others through a combination of both performance and competency with a particular skill

Covert behaviors - actions that are not overtly observed but hold significant value influencing overt behavior and bringing change to the environment

Exemplar - an example that is used when training or teaching others

Overt behaviors - actions which are visible and can be seen directly such as physical movements

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