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An Application of Video Recording Technology to Enhance the Key Leader Engagement Performance at SWCS

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Abstract

In this study, video recording technology was introduced into a classroom of military students to enhance Key Leader Engagement (KLE) performance. The main objective of this study wasto determine the effectiveness of using video recording technology in improving the students' level of performance in the Special Forces Warrant Officer Technical and Tactical Certificationat the U.S. Army Special Warfare Center and School. All students were required to participatein several practical exercises that were designed to give each student practice at participating in a KLE. For all students, each iteration of the KLE practical exercises was video recorded and scored. A quasi-experimental study using the video recording technology was used to collect data on each student's Key Leader Engagement performance. This research also incorporated a qualitative survey to determine the students' perspectives concerning the use and effectiveness of the video recording technology during KLE training. Data from the quasi-experiment was analyzed using a paired t-test. Results revealed that the use of the video recording technology made a positively significant difference from one performance of the KLE to the next, demonstrating that video recording technology employment in improving students' level of performance between iterations of KLEs was effective. The survey results show that majority of the participants think that the use of the SPOTLITE video recording technology during the After Action Review (AAR)/Counseling session helped them to becomeaware of their actions during each Key Leader Engagement (KLE), that the use of the SPOTLITE video recording technology during the After Action Review (AAR)/Counseling session helped them to improve their skills during a Key Leader Engagement (KLE), and that the SPOTLITE video recording technology was used correctly/effectively.

Keywords: video recording technology, key leader engagement, andragogy, constructivism

Introduction

Background of the Study

For many years, the United States Army John F. Kennedy Special Warfare Center and School (SWCS) has trained its students to conduct Key Leader Engagements. Over the years, this training has taken many forms, from lectures to discussions to practical exercises.

The importance of special operations soldiers being proficient at conducting a KLE has become more prevalent in recent years. Referencing Afghanistan, U.S. Army General David

Petraeus stated that one could not win an insurgency through violent efforts; thus, counterinsurgency success requires persuasion against the insurgency's support element to encourage them to convert from the enemy to the ally, extinguishing violent efforts in favor of peaceful and productive efforts. Key Leader Engagements with the insurgent leaders and their key support elements is a technique of persuasion that can prove to be an effective force multiplier if employed correctly and can become a positive step in the direction of reconciliation.

Preparing the situation for the enemy to become the ally requires refined skills in negotiation at all levels of the conflict (Hull, 2009). Ideally, before conducting a Key Leader Engagement, one must know the key leader's background and the influence that he or she wields in the community to assess if the key leader is the right person to help achieve a particular desired effect (Managula, Jr., 2018).

Conducting successful Key Leader Engagements requires a high degree of skill in active listening and the ability to establish and mold relationships, which often requires militarymembers to meet with people who are hostile to the United States. Employing soft skills like Key Leader Engagements as part of an overall military strategy can help to bring an enemy orpotential enemy into an area of common ground with the United States. However, Key LeaderEngagements are only as successful as the persons conducting them. Thus, to achieve the influence desired, soldiers must practice and perfect the art and science of conducting Key Leader Engagements. (Nash & Magistad, 2010).

In response to the increased importance of conducting KLEs, SWCS has allocated moretime and effort into developing that skill in its students. SWCS created more realistic scenarioswith more realistic role players, often incorporating a language other than English into the KLE, thus requiring an interpreter.

In the past, practical exercises involved the student conversing with a role player, followed by the student listening to the instructors' comments about the student's performance during the KLE. Recently, SWCS began using video recording technology intended to help the students improve their KLE skills by affording the student the opportunity to watch a replayof their KLE performance from a third-person perspective. In concept, video recording technology has the potential to be powerfully effective. Until now, no studies have been conducted to determine if the technology is proving to be an effective tool. This research study is the first of its kind for measuring the effectiveness of this technology at SWCS.

The findings from this research work provide solid data that will help SWCS better understand its impact on its students' learning.

Research Purpose

The U.S. Army has experienced some challenges concerning the Key Leader Engagements. One challenge is that teaching U.S. soldiers how to conduct Key Leader Engagements requires the soldiers to understand that, in large part, the United States is a low-context culture that often focuses on accomplishing a task as fast as possible (U.S. State

Department, 2021). As such, Americans often rely on verbal communication to be a key, whereby the information transmitted is clear and informative, and meetings tend to go fast.

Other cultures, such as Asian and Middle Eastern cultures, are often high-context. They prefer to build a relationship; thus, indirect communication is as crucial as direct communication (Bansal, 2021; Finnie, 2019). Meetings often focus on establishing and developing a relationship. Given this, American soldiers must understand their cultural tendencies as well as those of other cultures. Once a soldierunderstands the different cultures, then hasty responses and actions can be minimized.

Understanding the need to improve the Key Leader Engagement skills of the force, SWCS sought methods to enhance KLE training in the classroom. The idea surfaced that it would be good to video record the students while conducting their Key Leader Engagement practical exercises. This way, when the video recording is played back, the students can see themselves in action from a third-person perspective. The current thinking is that this technology allows the students to learn more about their performance than mere teacher comments, thus increasing the students' improvement rate between each KLE practical exercise.

Although the technology has already been implemented, its effectiveness has not yet been studied. This research is the first study concerning the effectiveness of video recordingtechnology to enhance the KLE performance at SWCS.

Research Questions

1. How effective is the use of video recording technology (SPOTLITE) in improving students'level of performance in the Special Forces Warrant Officer Technical and Tactical Certification(SFWOTTC) at the United States Army John F. Kennedy Special Warfare Center and School in terms of collectively:
    1. Identifying the key leader;
    2. Describing the key leader and his/her environment;
    3. Identifying the desired effects of the engagement;
    4. Preparing for the Key Leader Engagement;
    5. Executing Key Leader Engagement;
    6. Reporting the outcome of Key Leader Engagement in accordance with the unit’s standard operating procedure (SOP); and
    7. Reengaging the leader during Key Leader Engagements?

2. What are the students' perspectives concerning the use and effectiveness of the SPOTLITEvideo recording technology during Key Leader Engagements in the Special Forces Warrant Officer Technical and Tactical Certification (SFWOTTC) at the United States Army John F. Kennedy Special Warfare Center and School?

Research Hypotheses

Ho1: There is no significant difference in the students’ scores from KLE Iteration 1 to KLE Iteration 2 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader

Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ha1: There is significant difference in the students' scores from KLE Iteration 1 to KLE Iteration 2 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ho2: There is no significant difference in the students' scores from KLE Iteration 2 to KLE Iteration 3 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ha2: There is significant difference in the students' scores from KLE Iteration 2 to KLE Iteration 3 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ho3: There is no significant difference in the students' scores from KLE Iteration 3 to KLE Iteration 4 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ha3: There is significant difference in the students' scores from KLE Iteration 3 to KLE Iteration 4 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ho4: There is no significant difference in the students' scores from KLE Iteration 4 to KLE Iteration 5 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ha4: There is significant difference in the students' scores from KLE Iteration 4 to KLE Iteration 5 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader

Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ho5: There is no significant difference in the students' scores from KLE Iteration 5 to KLE Iteration 6 in terms of 1. Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Ha5: There is significant difference in the students' scores from KLE Iteration 5 to KLE Iteration 6 in terms of Identifying the key leader; 2. Describing the key leader and his/her environment; 3. Identifying the desired effects of the engagement; 4. Preparation for the Key Leader Engagement;74 5. Executing Key Leader Engagement; 6. Reporting the outcome of Key Leader Engagement following the unit's standard operating procedure (SOP); and 7. Re-engaging the leader during Key Leader Engagements?

Significance of the Study

The results of this research will help SWCS better understand the effects of the integration of video recording technology into Key Leader Engagement performance in the classroom have on student learning. With a better understanding, SWCS will further develop the video recording technology into other courses that incorporate Key Leader Engagement (KLE) practical exercises into the curriculum. Further, a better understanding of the effects of video recording technology will allow SWCS to incorporate it into other aspects of training beyond KLE, using it as a tool to further develop humans into more effective soldiers. A better understanding will also allow for creating policies that affect the employment of video recording technology as a training tool across the entire SWCS enterprise.

Literature Review

Military power is often considered to be only the quantity and quality of soldiers, tanks, warships, and warplanes, especially those hard power items being used against an adversary indefense of one's own country. However, military resources can be applied to soft power, which involves framing agendas, persuading other governments, and attracting support for a particulareffort (Nye, 2010).

While it takes more than the military might to advance a country's interests, the militarystill plays an important soft role in the process. When the mechanics of government are functioning smoothly, diplomacy, information, military, and economy (DIME) are all working with each other to advance the interests of a country (National Power, 2019). When even oneof these efforts fails to function effectively, it affects the whole.

U.S. military personnel are often tasked to provide, among a myriad of other things, training, including human rights and democratic values training, to counterparts while workingabroad. Performing tasks of this nature rely upon the U.S. soldier's ability to build and

maintainrelationships with other people to influence those people's behavior and shape the standards ofconduct for those host country militaries (Colonel Howe, 2018).

Influencing people's behavior requires the ability to communicate effectively. The ability of the soldier to effectively express his/her thoughts to the intended audience can have a profound impact on a mission's success. Soldiers are also frequently required to communicate with key leaders in a village setting or a government setting to express concerns and hear concerns so that the various entities involved can work toward a viable solution that advances all parties' interests. These conversations are referred to as Key Leader Engagements, and they are one of the many varying skills taught to America's Special Operations Forces.

The Importance of Key leader Engagements

Modern conflicts can be complex, involving governmental organizations, non-governmental organizations, the local populace, and many third-party actors. In order to extinguish the conflict, these various entities must work together.

For the United States military, establishing healthy working relationships with the localpopulace in an assigned area of responsibility and acquiring their support is vital to mission success. Key Leader Engagements are a significant tool that can be used to accomplish this (Lindoff, 2011).

It is important to understand who is a key leader. A key leader is a person who possesses power in a society. The powerful actors within a society are the ones who can leverage both their personality and the cultural aspects of the society. Societies have key leaders who act at various levels within the government who have legitimate power. Societies also have actors with other sorts of power, such as economic power, special skills, or power over the land that comprises the battlespace. For example, some leaders may be able to guarantee or deny security in a particular battlespace. Key leaders might be clergypersons, village elders, or successful business owners, but key leaders might also be the enemy or those who can and willdisrupt reconciliatory efforts.

Key Leader Engagements can be conducted with those who have varying degrees of power. These actors might be supportive, neutral, or opposed to reconciliatory efforts. They might simply be opposed to meddling by the United States in their communities and affairs. Inshort, key leaders can be allies or enemies. Regardless of official position, anyone who is seenas a leader by those in the community wields power to be influential over the population in thatcommunity and is, thus, a key leader within that community (Lindoff & Granåsen, 2011).

Key Leader Engagements can be an important factor in developing and nurturing relationships. According to U.S. Army Captains Jason Guffey and Thomas Westphal, writing for *Infantry Online*, strong relationships and soft power influence with local key leaders must exponentially increase as fewer soldiers and resources limit commanders' likelihood of accomplishing the Army's mission by using only coercion and force. Therefore, soldiers must

broaden their skills by developing and maintaining relationships with local key leaders across their battlespace, which can be accomplished through Key Leader Engagements.

Guffey and Westphal (2013) recommend that soldiers consider every mission to be aninformation operation in the sense that every time a patrol goes into the local population, eachsoldier on patrol must consider the effects that their behavior will have on influencing the population in that battlespace and how today's actions will affect future Key Leader Engagements. All Army soldiers must comprehend and continually apply this concept.

Given this, the task of learning to develop and maintain strong relationships and soft power influence with local key leaders must drastically increase. Soldiers must actively seek to further develop their skills at establishing and maintaining relationships with local key leaders across their battlespace, including enhancing Key Leader Engagement skills (Guffey &Westphal, 2020).

KLE Training

As part of a robust curriculum in the SFWOTTC, SWCS must ensure that its students are trained in the art and science of Key Leader Engagements. SWCS goes to great lengths to ensure that the KLE practical exercises are as realistic as possible for a training environment. Into the KLE practical exercises, SWCS has incorporated realistic role players, native speakers of languages other than English that require the use of an interpreter, and villages and offices that simulate locations outside of the USA where KLEs are likely to occur. Whilea KLE is occurring, SWCS role players will occasionally add distractions within earshot of the KLE – perhaps an attack by an adversary, an instance of spousal physical abuse occurringin the open street, or an Islam call to prayer – in order to add as much realism and stress to the hasty decision-making that the student must conduct concerning those distractions while also conducting the KLE. What is the student to do? Is the student to get involved in the spousal abuse situation or pretend that it is not happening? Does the student even address the commotion? When all of the locals involved in the KLE stop for prayer, what is the student to do, especially if the student is not Muslim? Is the student to sit there and watch, exit the room, participate in the call to prayer? There is no one right answer. Everything is situational. The right answer today might not be the right answer tomorrow, but the training exposes the student to a myriad of issues that can occur while conducting a KLE in various real-world environments.

SPOTLITE

The mere act of doing something repeatedly with some level of guidance between iterations can improve performance, but SWCS believes that there is a way to increase the performance level even more by using technology to help the student between iterations.

SPOTLITE is an app that can be used on an electronic tablet. The app allows an instructor to video record a student's Key Leader Engagement performance. While video recording,

the instructor can score the student's performance using the practical exercise grading rubric displayed on the tablet's viewing screen.

While the SPOTLITE video recording technology intervention is thought to help the teacher score the student's performance and show the students their successes and shortcomings, it remained unclear if the technology served to improve the student's skill at conducting a Key Leader Engagement.

This research answered the effects of using video recording technology on students' level of performance during Key Leader Engagement practical exercises in the SFWOTTC at SWCS. It did so by measuring the effectiveness of a specific hand-held video recording technology, called SPOTLITE, on student performance during attendance at SFWOTTC at SWCS at Fort Bragg, North Carolina, United States of America.

This study measured each student's scores on a particular series of Key Leader Engagement practical exercises during the SFWOTTC to determine the effectiveness of the SPOTLITE video recording technology as an intervention tool.

Teaching soldiers how to conduct Key Leader Engagements requires a standard for assessment, and the standard must be measurable. With the measurable standard for assessment in place, instructors teach to the standard. Then, soldiers are provided the opportunity to practice conducting Key Leader Engagements. After the soldier has practiced, it is time for the soldier to be assessed on his/her skills according to the measurable standard.

In order to ensure as objective an assessment as possible, the instructors of the SFWOTTC at SWCS use a grade sheet that lists the required steps to be performed during theKLEs. The grade sheet comprises prepared for the KLE, identified the desired effects of the KLE, performed introductions, demonstrated active listening, and looked at the host as opposedto the interpreter during the Key Leader Engagements. Table 1 depicts the SWCS SFWOTTCKLE grade sheet.

Table 1

KLE Grade Sheet

Grade Sheet Conduct A Key Leader Engagement (KLE)	GO (1 Point)	NO-GO (0 Points)
1. Identified the key leader.		
2. Described the key leader and his/her environment.		
3. Identified the desired effects of the engagement.		
4. Prepared for the Key Leader Engagement:		
a. Queried the interpreter about the indigenous populace.		
b. Prepared the interpreter for the engagement.		
c. Identified meeting roles by designating a recorder, a note taker, and a photographer.		
d. Conducted rehearsals.		
e. Conducted standard mission planning activities (troop leading procedures, security considerations, maneuver, logistics, communications, and contingencies).		
5. Executed Key Leader Engagement:		
a. Performed customary introductions with the key leader.		
b. Followed local etiquette.		
c. Used active listening skills.		
d. Looked at the host not the interpreter.		
e. Disseminated information operations and inform and influence activities themes.		
f. Achieved desired effects/goals identified in Step 3, "Identifies desired effects".		
g. Instilled local ownership in solutions.		
h. Restated agreements/discussion points.		
i. Attempted to schedule follow-up engagement.		
6. Reported the outcome of Key Leader Engagement in accordance with the unit's standing operating procedures:		
a. Conducted post-Key Leader Engagement debrief/after action review.		
b. Prepared post-Key Leader Engagement report identifying information objectives and emerging impacts on populace or friendly forces.		
c. Identified critical information obtained during Key Leader Engagement and any outstanding issues.		
7. Reengaged the key leader, if applicable:		
a. Reviewed previous Key Leader Engagement reports and agreements.		
b. Followed through on agreements to sustain relationships.		
Total Score		

Applying Andragogy to Teaching Special Forces Warrant Officers in the SFWOTTC

Special Forces warrant officer candidates attending the SFWOTTC are mid-career soldiers who come to the course with significant life and job experiences. Through a rigorous selection and assessment process followed by an extensive training qualification course then tested through a variety of real-world missions across the globe, including combat and military training exercises, these soldiers have proven themselves to be among the best-quality soldiers in the world. Thus, they come to the SFWOTTC as adult learners with a wealth of experience and an eagerness to learn more.

Given this fact about the student population of the SFWOTTC, Andragogical methods are applied to the education process. Those involved in the curriculum development and delivery of the instructional material of the SFWOTTC work to ensure that the needs of theseadult learners are met, which comprise understanding and applying the principles that the students have a desire to enhance their skills and knowledge; that students are afforded the opportunities to contribute to what, why, and how they enhance their skills

and knowledge; that the training and education have applicability to the student's situation; that the students' collective experiences are used as a learning resource; and that there is a cooperative climate of learning that minimizes anxiety and encourages freedom to experiment (Andragogy and Pedagogy, 2019).

Applying Constructivism to Teaching Special Forces Warrant Officers in the SFWOTTC

Constructivism is the concept that learning happens when the student constructs the instrument for learning while his or her specific interpretation of the knowledge is colored by previous experience and skills. Thus, knowledge is constructed as opposed to transmitted. As a result, students spawn new knowledge by coupling their previous experience with new activities and experiments.

Piaget's Theory of Constructivist learning affects the learning curriculum because teachers have to develop a lesson plan that enhances their students' logical and conceptual growth. Teachers must emphasize the important role that experiences and connections with the adjacent atmosphere play in student education (Piaget's Theory of Constructivism, 2016).

Constructivism is a theory that focuses on knowledge and learning. It requires a learner-centered classroom where knowledge and the formulation of knowledge are interactive,where varying perspectives are fostered, and where all questions by students are valued. Whenusing constructivism in the classroom, the significance of context and process of learning is interdependently accentuated. In addition, the significance of credible and reliable activity thathas personal relevance to the student is encouraged.

The foundation of constructivism is that students actively forge their knowledge by connecting new information to preexisting knowledge, which helps them understand the world better. Such an underlying foundation is invariably congruent with the type of environment that exists during the SFWOTTC at SWCS.

Other constructivist theorists whose work is relevant to this study include John Dewey, Albert Bandura, and Lev Vygotsky.

John Dewey focused on the concept that learners need to connect academic work to real-life experiences in order to facilitate higher levels of learning (Brau, 2020). The KLE practical exercises in the SWOTCC are linked to real-world scenarios.

Albert Bandura focuses on observational learning, focusing on learning from the behaviors of others (McCleod, 2016). By using the video recording technology during the SWOTTC KLE practical exercises, the students are afforded the ability to learn by observing others and themselves.

Lev Vygotsky's constructivism approach focuses on the value of students learning alongside their peers in order to assimilate knowledge, as opposed to rote memorization and repetitive lectures (Brau, 2020). The SWOTTC KLE practical exercises are conducting alongside their peers, thus allowing students to assimilate knowledge.

Integration of Constructivism and Technology

A complementary relationship exists between constructivism and technology. Both constructivism and technology have altered the teaching-learning process. It has been used in many classrooms to cultivate purposeful learning experiences. Much has been documented about the role of technology in enhancing the teaching-learning process in constructivist classrooms. Constructivism capitalizes on educational technologies for the most significant positive impact on learning outcomes.

Applying a constructivist approach in the classroom using technology facilitates more opportunities for students to learn. Constructivism offers important insights for educators whowant to use technology to increase student learning outcomes. The use of technology in constructivist classrooms empowers students to be more responsible for and more active in thelearning process, contributing to increased learning outcomes. Combining constructivism and technology provides compelling evidence of the advantages of educational innovation on student learning outcomes (Martin-Stanley & Martin-Stanley, 2007).

Technology can empower teachers to welcome various methods for student learning, record student progress, assist students who are having trouble keeping up, and challenge exceptional learners. Combining the explosion in instructional technology with the aim of constructivism creates a powerful combination. Through this combination, professionals dubbed techno-constructivists are using technology in constructivist ways.

Constructivism and technology are working hand-in-hand in the present day. One example is that hand-held devices can be used to record video to enable students to view the video on the device's screen, thus giving the students a better perspective of the video recording situation. In this way, students can then develop a better understanding of the situation congruent with the case with the Key Leader Engagement practical exercises in the SFWOTTC.The possibilities for constructivism and technology are endless (Constructivism and Technology, 2016).

Applying the Integration of Andragogy, Constructivism, and Technology to Teaching the Art and Science of Key Leader Engagements

Moon, Young, and Hyejung (2010) conducted a study titled "Nursing Students' Self-Evaluation Using a Video Recording of Foley Catheterization: Effects on Students' Competence, Communication Skills, and Learning Motivation" found that students who were allowed to evaluate his or her school work intensified self-awareness and encourages self-directed learning. For their study, students in an experimental group graded their Foley catheterization performance by reviewing the video recordings of their performance, whereas students in the control group received only written evaluation guidelines. The results showed that the students in the experimental group had better scores on competency, communication skills, and learning motivation than the control group at the posttest, which was conducted eight weeks long after the pretest. The findings confirmed that self-awareness of own performance acquired by reviewing a videotape appears to increase the clinical skills competency of nursingstudents.

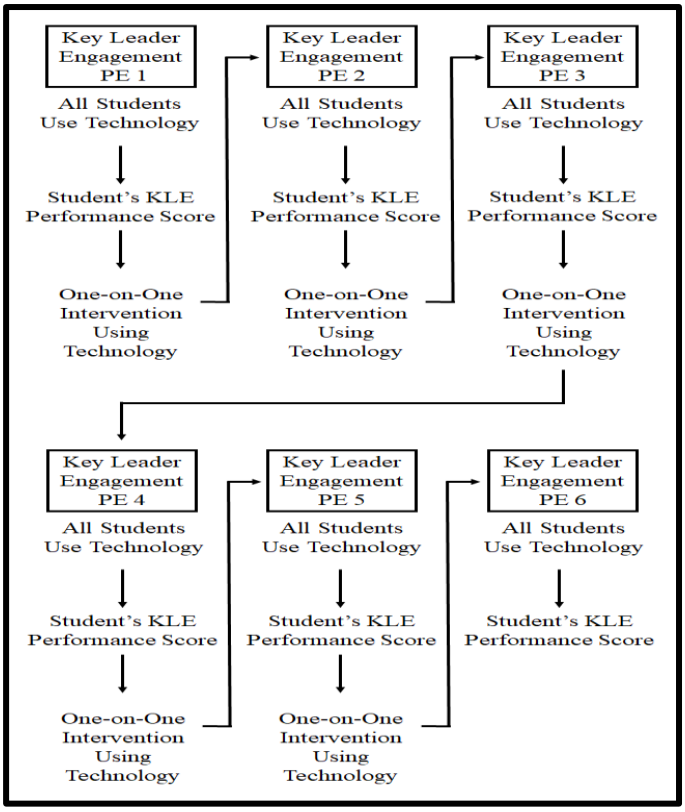
The educators at SWCS believed that the evidence from the research conducted by Moon, Young, and Hyejung (2010) is generalizable to their SFWOTTC students. Accordingly, SWCS introduced the SPOTLITE video recording technology into the Key Leader Engagement portion of the SFWOTTC.

In the SFWOTTC classroom, the instructors spend four hours teaching about Key Leader Engagements. The instructors discuss what a KLE is, explore the students' experienceswith KLEs, discuss why KLEs are important, the components of a KLE, how to prepare for a KLE, how KLEs vary among cultures, how to identify a key leader, how to describe a key leader and his/her environment, identifying the desired effects of the KLE, preparing for a KLE,executing a KLE, reporting the outcome of a KLE by the unit's standard operating procedure (SOP), and re-engaging the leader during the KLE.

After the classroom discussion of KLEs, the students practice conducting KLEs. After each student conducts a KLE, the instructor discusses the student's performance of the KLE by highlighting what the student was supposed to do, what the student did, what the student did right, and what the student did wrong, including what could be improved.

Conceptual Framework

The conceptual framework was developed by the author. In this conceptual framework, the KLE program comprises six iterations of Practical Exercises (PE). Each iteration has three stages: Stage I: All students use technology during the Practical Exercise (PE), Stage II: student's KLE performance score, and Stage III: One-on-one intervention using technology.



❖ Developed by the Author

During Stage I, the student conducts the Key Leader Engagement (KLE) during the Practical Exercise (PE).

During Stage II, the instructor scores the student's KLE performance.

During Stage III, the instructor discusses with the student the student's performance of the KLE during the PE. It is during Stage III that the student would often counter some of the instructor's comments about what the student did wrong, usually claiming that the student did meet the instructor's learning criteria. After implementing the video recording technology, issues like that no longer exist because the video recording clearly shows the student's actions and words during the KLE.

There is an assumption that using the video recording technology improves the students' levelof performance on subsequent KLEs.

This research sought to answer the question of the effects of using video recording technology on students' performance during Key Leader Engagement practical exercises in theSFWOTTC at SWCS.

Research Design

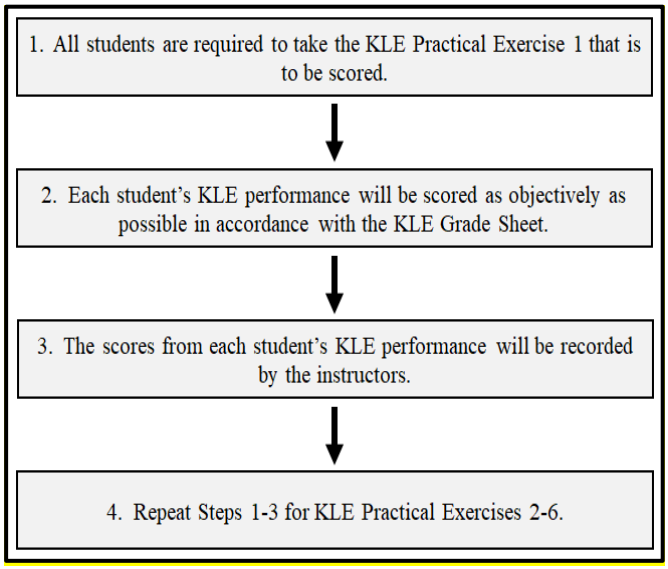
The author employed a mixed methodology for data collection. The author used the scores from the KLE performances for the quantitative method and qualitative surveys for the qualitative method. Specifically, this study employed a quantitative quasi-experimental research methodology to determine the effectiveness of SPOTLITE in enhancing the performance of the participants in terms of the seven aspects specified in Key Leader Engagement training.

Procedural Diagram

Figure 1 describes the data collection process.

Figure 1

Data Collection Process



Scope of Population and Sample

The target population is soldiers who have been selected to become Special Forces Warrant Officers. SWCS conducts two SFWOTTC classes per year. Twenty-three students undertaking the Special Forces Warrant Officer Technical and Tactical Certification (SFWOTTC) participated in this study. This study used census sampling since all 23 students attending the SFWOTTC Class 002-20 from 15 July 2020 until 13 November 2020 at SWCS at Fort Bragg, North Carolina, United States of America, participated in the study. It is believed that the results of this research are generalizable to larger populations. Total population sampling is used when the target group is small and set apart by unusual and well-defined characteristics (Glen, 2018).

Scope of Research Instrument

Quantitative Part

A quasi-experimental study using the SPOTLITE video recording technology was usedto collect data on each student's Key leader Engagement performance. SPOTLITE is an app that can be used on an electronic tablet. The app allows an instructor to video record a student'sKey Leader Engagement performance. While video recording, the instructor can score the student's performance using the practical exercise grading rubric displayed on the tablet's viewing screen.

Qualitative Part

This research also incorporated a qualitative survey that was used to determine the students' perspectives concerning the use and effectiveness of the SPOTLITE video recordingtechnology during Key Leader Engagement training in the Special Forces Warrant Officer Technical and Tactical Certification (SFWOTTC) at the United States Army John F. KennedySpecial Warfare Center and School. All 23 students completed the survey.

Scope of Data Analysis Process

All data were entered into the IBM SPSS computer software program, whereby a pairedt-test was conducted. All students were required to participate in several practical exercises that were designed to give each student practice at participating in a Key Leader Engagement (KLE). There were six KLE iterations to be completed for the whole course.

The first iteration scores of each student were compared to the second iteration scores, the second to the third until all the iterations were completed. Paired t-test was used to analyze any statistical significance between each iteration scores. For all students, each iteration of thepractical exercise was video recorded and scored. All students were provided a one-on-one session with the instructor to discuss the student's KLE performance and to review the video recording, allowing each student to see his performance from a third-person perspective. Thisprocess was repeated through six iterations of conducting a KLE.

The author collected the scores from each student's KLE performance, then conductedstatistical analysis to determine what, if any, effect resulted from using video recording technology on students' level of performance during Key Leader Engagements.

All students completed a survey. The data from the surveys were used to determine students' opinions of and thoughts about the SPOTLITE video recording technology.

Results

Participants' Demographic Data

All 23 participants in this study were U.S. Army soldiers attending the Special Forces Warrant Officer Technical and Tactical Certification (SFWOTTC) at the United States Army John F. Kennedy Special Warfare Center and School.

The participants range in age includes: two age 26-30 years; ten age 31-35 years; ten age 36-40 years; and one 41 years or older.

The military experience of the participants includes four with 7-10 years; eleven with 11-15 years; and eight with 16 or more years.

The Special Forces experience of the participants includes five with 4-6 years; nine with 7-10 years; and nine with 11-15 years.

The quantity of combat deployments of the participants includes five with 2, three with3, nine with 4, two with 5, and four with six or more.

The education level of the participants includes five with some college, ten with anassociate's degree; seven with a bachelor's degree; and one with a master's degree.

Results of Hypotheses Testing

Hypothesis 1

For hypothesis 1, the paired t-test was conducted to determine whether the scores from KLE Iteration 1 and KLE Iteration 2 were significantly different.

Table 2

Summary of T-Test for KLE Iteration 1 and KLE Iteration 2

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Difference in the students' scores from KLE Iteration 1 to KLE Iteration 2	3.364	1.255	.268	2.807	3.920	12.568	21	.001

Results of the paired sample t-test shows a significant difference in the scores of KLE Iteration1 and KLE Iteration 2: $t(21)=12.568$, $p=.001$, $p<.05$. Thus, the null hypothesis is rejected and conclude that the mean for KLE Iteration 1 and KLE Iteration 2 is significantly different.

Hypothesis 2

For hypothesis 2, the paired t-test was conducted to determine whether the scores from KLE Iteration 2 and KLE Iteration 3 are significantly different.

Table 3

Summary of T-Test for KLE Iteration 2 and KLE Iteration 3

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Difference in the students' scores from KLE Iteration 2 to KLE Iteration 3	-2.50000	3.32021	.70787	-3.97210	-1.02790	-3.532	21	.002

Results of the paired sample t-test shows a significant difference in the scores of KLE Iteration2 and KLE Iteration 3: t(21)=-3.532, p=.002, p<.05. Thus, the null hypothesis is rejected and conclude that the mean for KLE Iteration 2 and KLE Iteration 3 is significantly different.

Hypothesis 3

For hypothesis 3, the paired t-test was conducted to determine whether the scores from KLE Iteration 3 and KLE Iteration 4 are significantly different.

Table 4

Summary of T-Test for KLE Iteration 3 and KLE Iteration 4

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Difference in the students' scores from KLE Iteration 3 to KLE Iteration 4	-1.50000	2.36543	.50431	-2.54877	-.45123	-2.974	21	.007

Results of the paired t-test shows a significant difference in the scores of KLE 3 and KLE 4: t(21) = -2.974, p = .007, p < .05. Thus, the null hypothesis is rejected and conclude that the mean for KLE Iteration 3 and KLE Iteration 4 is significantly different.

Hypothesis 4

For hypothesis 4, the paired t-test was conducted to determine whether the scores from KLE Iteration 4 and KLE Iteration 5 are significantly different.

Table 5

Summary of T-Test for KLE Iteration 4 and KLE Iteration 5

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Difference in the students' scores from KLE Iteration 4 to KLE Iteration 5	-1.59091	1.22121	.26036	-2.13236	-1.04946	-6.110	21	.001

Results of the paired t-test shows a significant difference in the scores of KLE 4 and KLE 5: $t(21) = -6.110$, $p = .001$, $p < .05$. Thus, the null hypothesis is rejected and conclude that the mean for KLE Iteration 4 and KLE Iteration 5 is significantly different.

Hypothesis 5

For hypothesis 5, the paired t-test was conducted to determine whether the scores from KLE Iteration 5 and KLE Iteration 6 are significantly different.

Table 6

Summary of T-Test for KLE Iteration 5 and KLE Iteration 6

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Difference in the students' scores from KLE Iteration 5 to KLE Iteration 6	-.81818	.85280	.18182	-1.19629	-.44007	-4.500	21	.001

Results of the paired t-test shows a significant difference in the scores of KLE 5 and KLE 6: $t(21) = -4.500$, $p = .001$, $p < .05$. Thus, the null hypothesis is rejected and concludes that the mean for KLE Iteration 5 and KLE Iteration 6 is significantly different.

Qualitative Data

In addition, this research determined the students' perspectives concerning the use andeffectiveness of the SPOTLITE video recording technology.

All 23 participants were asked to share their opinions on the usage of the video recording technology, utilizing the following questions:

First, to what degree do you feel that the use of the SPOTLITE video recording technology during the After Action Review (AAR)/Counseling session helped you to become aware of your actions during each Key Leader Engagement (KLE)?

Of the 23 participants, six thought the video recording technology very much increasedtheir awareness, twelve thought that the video recording technology somewhat increased theirawareness, and five thought that the video recording technology neither decreased nor increased their awareness.

Second, to what degree do you feel that the use of the SPOTLITE video recording technology during the After Action Review (AAR)/Counseling session helped you to improveyour skills during a Key Leader Engagement (KLE)?

Four of the 23 participants thought that the video recording technology very much increased their skills, thirteen thought that the video recording technology somewhat increasedtheir skills, and six thought that the video recording technology neither decreased nor increasedtheir skills.

In the survey, the question was asked: Do you think the SPOTLITE video recording technology was used correctly/effectively? Of the 23 participants, nineteen responded with "yes," and four responded with "no.".

The common themes among those nineteen participants who responded with "yes" arethat the video recording technology helped them be more aware of their actions during KLEs;viewing their previous KLE helped them better prepare for the next KLE. The video recordingtechnology is a valuable training aid that is not used enough during training. The four participants who responded with "no" stated two reasons for their response. One, the placementof the camera was too obvious and caused distraction during the KLE. While using the cameraduring the KLE was good, the participants would also like to have seen the video recording technology used during other course portions.

Discussion

The quantitative part of this study lends credence to constructivism theory, which advocates learning situations whereby students are actively involved in the learning process. Constructivist teachers inspire students to frequently assess how they are being helped to gain comprehension by the activity, as is present during the student-instructor feedback sessions

duding this study. When a student consistently reflects on his/her experiences, the student finds that their ideas increase in complexity and power, and that they develop increasingly stronger skills and abilities to assimilate new information (Martin-Stanley & Martin-Stanley, 2007). In this study, the video recording technology helped to facilitate this process, allowing students to score quantitatively higher on each subsequent KLE performance.

The survey results of this study are also consistent with andragogy theory (Andragogy and Pedagogy, 2019), whereby as adults attempt to migrate into different employment positions, the adult's desire to learn becomes oriented toward those desired positions of employment. Adults want to advance in self-development, thus the motivation for adults to learn is typically internal. Adults who want to climb the ladder of job success need to acquire new skills in order to do so. This is consistent with the results of this study. The students in this study are adult learners who are motivated to learn because of the new position of employment that they desire to hold. In this study, the video recording technology significantly and quantifiably improved the students' KLE performance scores.

Together, the quantitative and qualitative data further solidify the constructivist learning theories posited by Piaget, Dewey, Bandura, and Vygotsky. Adult learners in the environment presented during this study can construct new knowledge that can be directly applied to real-world scenarios.

Conclusion and Recommendations

Key Findings

The research found that using video recording technology did significantly improve students' performance at conducting Key Leader Engagements from each iteration to the next. After reviewing their KLE performance via the video recording technology after each KLE iteration, the participants scored significantly better on each subsequent KLE performance.

Implications

The evaluation of video recording technology demonstrated how effective it could be in improving one's performance. Many opportunities can be found at the United States Army John F. Kennedy Special Warfare Center and School to use video recording technology to enhance student performance. Most importantly, perhaps, SWCS now knows that using video recording technology improves its students' performance level, which makes the soldier better-prepared to conduct real-life Key Leader Engagements across the globe in support of U.S. interests.

Video recording technology can be used in other courses where KLEs are taught and practiced by showing students how they are holding their weapon when firing on a target, clearing a building, conducting a parachute landing fall, and performing exercise routines, including push-ups, sit-ups, and running. The various ways in which video recording technology can be used to enhance student learning are countless.

Outside of SWCS and the military setting, the use of video recording technology can be used in a variety of performance-based training. Video recording technology can be used in a classroom to help students improve their skills at delivering speeches or presentations, helpstudents improve their dramatic acting skills, and help students improve their musical performance skills. Video recording technology can also be used in school sports to help student athletes to improve their basketball shooting skills, football kicking skills, team formation skills, baseball hitting skills, and many other sports-based skills.

In summation, anytime that a student is performing a skill, video recording technology can help the student improve the performance of that skill.

Suggestions for Future Research

First, it is recommended that future research includes other populations at SWCS that are also teaching KLE skills to students. Including SWCS students in other courses who are also practicing KLE skills improves the collective reliability of the studies.

Second, it is recommended that future research includes performance-based skills in other subjects at SWCS, like clearing a building, shooting a weapon, and parachuting procedures like actions in the air and parachute landing falls. Including other performance-based skills increases the reliability that the use of video recording technology is generalizable to other subjects.

Third, it is recommended that future research includes performance -based skills in classrooms outside of the military setting. Including participants in classrooms outside of a military setting increases the reliability that the use of video recording technology is generalizable to other academic settings.

Fourth, it is recommended that future research includes performance -based skills of student athletes. Including student athletes increases the reliability that the use of video recording technology is generalizable to areas outside of the classroom.

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