

THE IMPACT OF VIRTUAL REALITY TRAINING ON MENTAL HEALTH
CALLS FOR SERVICE

Article

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Introduction

A Valley Transportation Authority (VTA) bus is scheduled to arrive at its downtown destination at 1645 hours. Officers were dispatched on a welfare check of a possible mentally ill person (5150 W&I) causing a disturbance and acting violent on the bus. The subject was described as a 23-year-old male, who was very agitated, screaming, yelling and threatening passengers on the bus and not allowing them to leave. The male subject is seated in the rear of the bus screaming and yelling repeatedly, “Quit yelling at me!” “Don’t call the police!” and “I don’t need to go to the hospital!” There are approximately 10 additional passengers including two young children seated very close to this man in the rear portion of the bus. The bus driver is stuck in traffic and is fearful for the safety of his passengers.

While enroute to the scene, the officers conduct a records check on the preliminary information obtained from the bus driver. The bus driver, familiar with this passenger, noted the subject’s agitation. When the officers arrive on scene, they park around the corner, out of the field of view of the bus. They make their approach on foot, heading toward the front of the bus. The officers hear screaming, yelling and the sound of breaking glass. They see that the subject has broken out a rear window of the bus. There are still four passengers on the bus including the two young crying children. The subject appears to be arguing and talking to someone. The officers immediately and authoritatively direct that the subject stop yelling.

Did the officers use the best tactics while attempting to engage the subject on the bus? Most officers trained in crisis intervention strategies would not have used this confrontational method. This highly emotional scenario, regardless of whether the officers made a sound decision or not, will greatly impact future responses to similar calls for service. The main objective of this training exercise is to teach additional survival skills.

Fortunately, for these officers, this scenario occurred in the world of virtual reality (VR). VR is high-tech illusion that is a computer-generated three-dimensional environment. Once entered, VR becomes reality to the user. The greatest strength is being able to train on things you can't do otherwise, particularly in highly stressful situations (ScienceDaily, 1999). This training is a way for the human brain to help people to feel successful. In real life, police officers may not be given a second chance to learn from their mistakes and this training helps to prepare the officer for potential encounters on the street.

Through improved communication skills, including non-verbal and role-playing scenarios, the VR experience may help change an officer's attitude toward people who live with hallucinations and delusions. Hearing voices is one of the common symptoms of schizophrenia and the simulation is very authentic. When you hear voices, the voices jump around you; they are persistent, and it is impossible to ignore or filter them out (Feinstein Kean Healthcare, 2003). Learning the skills of empathy enable a better understanding of the courage of the many people with schizophrenia who are unable to recover a meaningful and fulfilling life.

Historical Perspective

Although VR is a relatively new technology to law enforcement, it has been in existence since 1965, when Ivan Sutherland expressed his ideas of designing virtual or imaginary worlds (Sutherland, I., 2004). Myron Krueger in the mid 1970s coined the term Artificial Reality as a way to view the world using a computer to create a full body experience through an immersion of the senses (Krueger, M., 2004). Jaron Lanier in the 1980s coined the term Virtual Reality that depicted the first implementations of multi-person virtual worlds using head-mounted displays as well as avatars, or simulated persons (Lanier, J., 2002). In 1984, William Gibson invented the world of Cyberspace (Cyberspace, 2002) or information-space, the electronic medium of computer networks, in which online communication takes place (Cyberspace, 1999).

Schizophrenia is a severe mental illness characterized by a dysfunction of the thinking process such as hallucinations and delusions, and withdrawal from the outside world (Schizophrenia, 2003). Virtually Better, innovator in the creation of VR environments for the treatment of anxiety disorders was founded in 1996 (Virtually Better, 1996). The VR environments were for fears such as: flying, heights, public speaking as well as post-traumatic stress disorder (PTSD). This new type of therapy combined cognitive and behavioral techniques including, VR exposure therapy, to treat disorders. In 2002, UK mental health experts began showing schizophrenic patients virtual reality hallucinations to help convince patients that their own hallucinations are not real.

Janssen Pharmaceutica developed a drug treatment for schizophrenia and also created a multimedia simulation that enables participants to see the world through the eyes and ears of a person suffering from schizophrenia (Silberner, J. 2002). This VR

experience takes about five minutes and combines three-dimensional computer animation, video images and sound effects to make real to the viewer what it is like to live with schizophrenia.

After the terrorist attack on the United States on September 11, 2001, the Department of Homeland Security (DHS) was created, and there was resurgence in training the nation's first responders. On March 30, 2004, the United States DHS awarded \$2.2 billion from the State Homeland Security Grant Program and \$725 million from the Urban Area Security Initiative to state and local governments to help first responders across the nation better protect their communities (Department of Homeland Security, 2004). Now is the time for law enforcement leaders to use the available funding from DHS grants to invest in virtual reality training. A VR hand-held unit cost approximately \$15,000 including the computer program (Farkasovsky, C. 2003).

VR technology is not new; however, in law enforcement, the technology has been primarily in driving simulators, firearms force options, CrimeView mapping, and through interactive skills training. Responsive virtual human technology (RVHT) is applied to interaction skills training such as interviewing, negotiating, presenting and eliciting information where improved interaction becomes critical. Some specific training applications for law enforcement officers would involve the use of responsive virtual humans to train personnel in dealing with subjects that present symptoms of serious mental illness.

JUST-TALK provides a computerized virtual person to interact with the student in a role-playing environment. The JUST-TALK project, funded by the National Institute of Justice Office of Science and Technology and developed by Research Triangle

International (RTI), involved integrating virtual reality training software within a 3-day class at the North Carolina Justice Academy. The course was structured to include classroom-based lecture, videos and discussion, live human role-playing, and virtual human role-playing (Frank, G., Guinn, C. and Hubal, R., 2002). This training tool is to be used in conjunction with instructor-led training to reduce training development and delivery costs and increase the student training effectiveness and consistency on critical interaction skills.

Literature review and futures forecasting shows the value of VR training technology and its ability to provide officers with the skills necessary to negotiate potential encounters that allow the officers to learn from their mistakes. The following are the primary benefits of VR training:

- VR training helps build self-confidence and teaches people how to make better decisions;
- Learning and understanding seems to have a greater impact when utilizing “hands on” techniques;
- Learning positive strategies for improved communication skills include non-verbal interactions with VR training that will help imprint thoughts and actions for response during a critical incident;
- VR totally immerses the senses and once the training begins, it becomes reality to the user;
- A VR death may occur, but at a push of a button the avatar is restored to life, and

- Law enforcement agencies are being tasked with being fiscally prudent, but at the same time officer safety conscious. VR training provides a cost effective method for increasing officer safety.

The following presents the challenges to the implementation of a VR training program:

- There may be resistance from the officers to receive training;
- There may be resistance from the Chief of Police due to lack of funding;
- There may be insufficient political support that does not create the urgency for those ultimately responsible for approving the programs, so program development may be futile;
- Money may not be available since the Department is facing significant budget cuts in the next fiscal year;
- There will be fewer officers available to respond to calls for service during training;
- The union may initially oppose the training program because it reduces and limits the number of available resources.

Development of Alternative Strategies

Five alternative strategies are suggested that could be employed to reach the goal of implementing a virtual reality training program to impact responses to mental health calls for service.

Alternative Strategy One – No Change

The first alternative is that an agency may choose to take no action to address the virtual reality training. Everything merely remains status quo. Committing to a course of action means there is a potential commitment to spending resources that may greatly

impact other areas of the department. Although this is a realistic alternative, it will not address the need for virtual reality training to impact responses to mental health calls for service. Management could decide that the existing Crisis Intervention Team (CIT) 40-hour academy training is sufficient training for the police department and that there are other agencies specifically trained and responsible for handling these services. In fact, if the agency follows this option, the number of employees to receive training is limited with only two academies held per year, with class size limited to 30. A large urban law enforcement agency has more resources than mental health staff and as first responders available 24/7 are tasked with initial contacts with mentally ill consumers in crisis. Without the VR training available to assist with providing better interactive and communications skills to law enforcement personnel, there will continue to be liability issues involving violent confrontations, injury to personnel, mentally ill consumers and innocent bystanders.

Alternative Strategy Two: Usage of Existing Training Equipment

Another alternative is to create a strategic plan using the existing Firearms Training System (FATS) marksmanship and judgmental training course designed to meet the training needs of today's law enforcement officers. Change the training program to incorporate the challenging responses to mental health calls for service. These specially designed courses will enhance the officer proficiency. The judgmental training portion of this program places the officer in a two-dimensional video real world atmosphere. These scenarios test the officer's ability to communicate with on-screen subjects, take control of a situation, and administer the appropriate level of force when the situation dictates it. Instructors have the ability to escalate or de-escalate a situation to test the officer's

reactions to different threat levels. These scenarios are also designed to enhance an officer's assertiveness skills, which will help to identify potentially threatening situations earlier, thus giving the officer an edge of preparedness (Firearms Training System Inc., FATS, 2004).

Alternative Strategy Three-Collaboration

The agency develops a collaborative multi-disciplinary approach to VR training by sharing resources. Each stakeholder sends a representative to a mental health steering committee tasked with identifying partners willing to design scenarios, role play, obtain VR technology and equipment. This steering committee establishes the necessary contacts to lay the foundation for developing the VR training. Each participant will have an equal obligation and opportunity to share in the financial commitments, benefits, and training.

Part of the collaborative includes colleges and universities, which allow credit for participation in an internship program. It is a grass roots collaborative that involves corporations, government agencies, non-profit organizations, schools, colleges and universities, military etcetera to allow for the least expense with the greatest gain in educating all members in the best ways to respond to mental health calls for service from a variety of perspectives. All agencies recognize the high financial cost of advanced technology. Plans should include the justification for such technology based on proven financial savings through training, reductions in violent confrontations, on-the-job injuries and preparation for encounters with mentally ill consumers.

Alternative Strategy Four- VR Training of Personnel

Providing a basic level of mental health training to sworn personnel with yearly updates better prepares officers to make good decisions using their best judgment. The primary purpose behind VR training is to increase sound decision making skills by encouraging officers to better understand and recognize symptoms of mental illness, and to safely handle crisis situations. The most cost-effective manner of preparing personnel to address these calls for service are by establishing a network of contacts and resources for referrals or services with other agencies. An interactive training application utilizing Responsive Virtual Human Technology and the Virtual Hidden Reality experience of schizophrenia will place the officers in an emotional experiential opportunity to view the world of mental illness. Cross training between real life role-playing and VR training will provide the best opportunities to interact without the potential life-threatening exposure.

Alternative Strategy Five – A combination of alternative strategies

An alternative to addressing a VR training program is one that encompasses the utilization of combined alternatives. The first step would be to create a membership in a collaborative multi-disciplinary approach, initially using the existing FATS training course to help develop the curriculum for training all personnel. This multi-disciplinary approach incorporates the participation of stakeholders to determine the minimum level of mental health training necessary for achieving the best interactive skills. The training facility with the existing FATS training course can be used to develop and implement the training. Continuous monitoring for effectiveness must occur with each individual agency assessing the value of the partnership, considerations for funding sources, joint oversight and a structure of accountability.

Of the five Alternative Strategies for implementing VR Training of Sworn Personnel, Alternative Strategy #4 is the recommended plan. Strategy #4 is to encourage officers to better understand and recognize symptoms of mental illness, and then to safely handle crisis situations. The goal of Alternative Strategy #4 is to provide a basic level of mental health training through VR technology to sworn personnel by influencing trends and events that will create positive future results. The following are specific recommendations for consideration by law enforcement leaders when developing a strategic plan for implementation of Alternative Strategy #4.

- Liaisons should be established with the mental health advocates and partnerships that are currently involved with research and development of prototype VR technology. These partnerships would include the military, colleges and universities, educators, mental health agencies, medical and pharmaceutical companies and VR companies.
- Prior to implementing the VR training technology, a public relations plan to promote the program must be developed.
- In the police academy, the VR training curriculum should be included in the Crisis Intervention Team (CIT) training.
- The available funding sources need to be identified, such as state or federal sources, i.e. Department of Homeland Security grants, or one-time city council capital budget allocations.
- Organizational policies and procedures related to VR technology needs to be developed.

- A database system needs to be established to track and document the number of calls for service involving mentally ill consumers.
- A monitoring plan will be established to provide user feedback to the police agency regarding the effectiveness of the VR training program.

The literature review and futures forecasting indicate there is support for the use of VR technology in training law enforcement. In 2003, according to the Crime Analysis Unit (CAU) of the San Jose Police Department there were 241 officers assaulted. During the same period, according to the California Department of Justice Law Enforcement Information Center Law Enforcement Officers Killed or Assaulted (LEOKA), there were 2,382 statewide.

With the use of VR technology, law enforcement may reduce the number of injuries and deaths to their personnel. The cost associated with this new technology can be offset with the assistance of grants or through salary savings. The city council may allocate specific funding to pay for the one time acquisition of VR equipment. Another option would be through a negotiation process with the vendor to include the equipment and filming of the training scenarios. The initial purchase of the equipment may appear too expensive, but when comparing the cost of the equipment and training with the cost attached to litigation and liability exposure, it is well worth the initial outlay.

The best way to overcome resistance by the officers, the POA and the Chief of Police is through a presentation that clearly outlines the specific benefits associated with VR technology. The best way to demonstrate this technology is to have three-person group interviewed and videotaped going through the same scenario. The group is composed of one person who has had no training with responses to mental health calls for

service; the second individual has had the basic 40-hour CIT training that includes classroom and role-playing; and the third person has had 20 hours of training that consisted of 10 hours of classroom and 10 hours of VR training. The third person who has had the VR training experience had safely and successfully demonstrated their interactive skills learned from the repetitive VR training immersive experience. This training experience depicts the benefits of VR training through immersive environments that enable repetition and officer safety, with virtually no threat to life.

Law enforcement leaders must continue to diligently work to increase officer safety through on-going training programs. Some training programs involve innovative, cutting edge technology, and collaboration such as VR technology. To increase officer effectiveness and provide for increased officer safety they must receive practical cutting edge VR training.

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