Chippewa Valley Technical College SimCity:

A Needs Assessment

by

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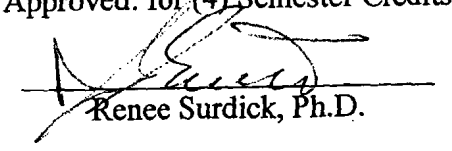

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ABSTRACT

Simulation training programs have a long history as effective methods of teaching a specific procedure or method. SimCities, or mock cities created of actual buildings and city features, are one way to provide an environment in which practice and learning can take place, without experiencing the negative outcomes of mistakes. The current research project conducted for Chippewa Valley Technical College (CVTC), examines the needs of the regional community regarding usage of a simulation city (SimCity) to be built on CVTC's campus. 572 surveys were sent to local organizations in a range of fields, to determine their needs and potential uses of the SimCity. Of the surveys returned, twenty-six usable surveys were analyzed for common themes using a content analysis method. Results of the survey demonstrated Police, Fire, and Sheriff's Departments are the most significant immediate need for the SimCity. It is the recommendation of the researcher to initially focus on this particular stakeholder

group, because they it showed the most interest and need, while working toward meeting the needs of other groups or organizations. Additional research should further define the needs of other organizational groups, to meet their needs in the future.

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Chapter I: Introduction

Simulation training is a method of providing "real world" experiences to students within an environment which is "safe" to make, and learn from, mistakes. Simulation training practice it is intended to increase the safety of the community in emergency and disaster situations as well as in everyday situations which pose safety an array of threats. Therefore, Chippewa Valley Technical College (CVTC) is in the beginning planning stages of creating a simulation city (SimCity) to provide the opportunity for students and community members alike to learn through simulated training experiences. The SimCity is created with actual buildings and city features to provide a "real world" environment, in hopes of replicating actual situations as closely as possible. The buildings will be built with flexibility allowing for a great degree of scenarios to meet the needs of multiple users.

Statement of the Problem

To start this immense project, it is necessary to identify the training needs of the local community, to effectively meet these needs in the creation of CVTC's SimCity. Seeing as the SimCity project is so vast, with unlimited possibilities as far as features and buildings within it, it is necessary to target in on what the initial needs of the community are, to create a foundation from which to start building. Once the foundation is created, and the SimCity is in use, it can easily be expanded as new needs develop within the community.

Purpose of the Study

The purpose of the current study is to determine the initial training needs of the region's public and private sectors as they relate to the usage of Chippewa Valley Technical College's SimCity.

Assumptions of the Study

Assumptions of the current study are one: that the SimCity will be built in the future, and two, that there is a regional need for such a facility. Finally, it is the assumption of this study that a regional need for the facility will lead to usage of the SimCity by those organizations which express such a need.

Limitations of the Study

The current study was limited by the small sample size as defined by the number of surveys returned by organizations. The research was also limited by the collection of solely qualitative data, which can be limiting in its ability to be generalized, as such be translated into usable conclusions. Another major limitation of the current research is the hypothetical terms in which the survey and cover letter were written, requiring each organization to use their imagination and creativity to determine how the needs of their organization may be met by the SimCity.

Methodology

A paper survey (Appendix B) was created and mailed to 572 organizations within the Eau Claire, Wisconsin regional area. The survey was enclosed with a cover letter (Appendix A) written by Judi Anibas, Campus Director of the Emergency Services Center for CVTC and head of the SimCity project. Qualitative data was collected regarding potential SimCity training needs, usages, and necessary features. The survey also addressed organizational money allocated to training needs and how often the organization expected to use the SimCity. The data collected was analyzed for themes using a content analysis method, and recommendations were made based on the most common responses obtained from the survey.

Chapter II: Literature Review: Simulation Based Training

Introduction

Research suggests expertise in any given field is typically acquired though at least 10 years of practice and study, often in the form of repetition (Ericsson, Krampe, & Tesch-Romer, 1993). To be effective, it is critical that this learning focus on achieving a specific goal. However, without an internal drive by the learner to learn and improve, practice or repetition can be useless and often no improvement is achieved (Kneebone, Scott, Darzi, & Horrocks, 2004).

Acquiring Expertise

Research has defined three general stages of acquiring expertise in a specific procedure or practice. The first stage, the cognitive stage, involves the initial learning of the procedure. The second stage, the associative stage, is focused on learning and performing the steps involved in the process. Finally, the third stage, the autonomous stage, focuses on automation and eliminating conscious awareness from the process of completing the task (Kopta, 1971; DesCoteaux & Leclere, 1995).

"Scaffolding" a theory common in pedagogy, involves providing students with a basic framework of ideas regarding the field of study. This method offers an opportunity for the student to fill in the gaps and build the actual "structure" him or herself, through experiences. In this method, the instructor acts more as a mentor or facilitator to which the student turns for guidance (Tharp & Gallimore, 1991).

Acquiring Expertise through Simulation Training

Research suggests our unconscious thinking is no different from our conscious thinking in regards to our ability to develop our rapid decision making processes, in that

training and practice has a huge effect on both (Gladwell, 2005). Simulation training programs are one way to provide an environment in which practice and learning of tasks and procedures can take place. Simulations may not necessarily predict behavior, as typically the actual situation is not identical to the simulation situation; but having been in a similar situation before provides a more solid preparation to make a decision in a stressful situation (Aldrich, 2006). The more times a person repeats any action, with motivation for improvement, the more automated the action will become (Gladwell, 2005). Simulation training is shown to be an effective and safe way to carry out this repetition.

It is often the case in emergency or stressful situations, that panic or extreme stimulation set in, but this does not have to be the norm. Repeated practice and training within a simulation setting can reduce stimulation and provide the individual with a greater opportunity to extract meaningful information from a stressful or dangerous situation this better assists in more effective reaction. In essence repeated practice provides an individual control over their rapid cognition, a period in which many mistakes occur within situations of heightened stimulation, (Gladwell, 2005).

In many ways, simulation can provide the student with a deeper understanding of the procedure or topic of study. Often times a topic may seem simple and linear when taught in a classroom, but can become more nonlinear, in "real world" or simulation situations. For these reasons, a deeper understanding of the topic may not be obtainable except through a simulation or "real world" experience. In other words, for a student to become an expert in his or her field prior to gaining "real world" experience, simulation

is an essential tool for them to understand the full complexity of the topic of study (Aldrich, 2006).

Simulations can also be critical to developing communication and teamwork skills through direct application of basic course skills. This allows participants to demonstrate and practice a full spectrum of skills as well as benefit from authentic teamwork experiences (Gadeken, 2004). Communication is often a major problem within workplaces but it can be improved through training simulations and a structured debriefing session following the simulation (Musselwhite, 2006). The more students practice communication during critical times, the more likely effective communication will take place during "real life" critical situations. This is especially true if communication strengths and weaknesses during the simulation are evaluated for each individual during the refection session.

Simulations in no way eliminate learning through instructor lecture. Rather the simulation is an essential supplement to the "scaffolding" that takes place within the classroom, helping achieve student learning at a deeper level (Aldrich, 2006). Simulations allow for more complex decision-making and problem solving than in the classroom as situations can arise simultaneously and interactively rather than sequentially. This requires quick and simultaneous decision-making in the present moment (Chapman & Sorge, 1999).

Key Components of Successful Simulations

As with any movement toward expertise, developing simulations requires the development of specific objectives and expectations for the students who are taking part in the simulation. These objectives and expectations should be developed under the

guidance of the faculty member, they should be focused and challenging, yet attainable (Aldrich, 2006).

To create the ideal simulation learning experience, the instructor must convey a sense of enthusiasm and conviction for the value of the simulation. Grading strategies employed should also have an effect; therefore it should be clear to those participating that a significant portion of their grade is related to the simulation. Typically, a higher percentage will lead to increased involvement. Reflection, either oral or written, should also be a part of this percentage (Chapman & Sorge, 1999).

Simulations can often be frustrating for both faculty and students, particularly when success does not come easily. Initial simulations often have difficulties; this is due to unclear objectives, disorganization, or lack of knowledge and experience by the student. However, such experiences can be an excellent source of learning for the student. Only experience and repetition can lead to the student's feeling that their actions and behaviors are natural in the particular situation (Aldrich, 2006).

Although simulations can be beneficial to create quicker, smoother responses, over reliance on simulations can also be dangerous; such overuse can lead to overconfidence and a greater potential for errors. Simulations typically operate in isolation from the "real world" context and students may falsely assume that simulations can reproduce all aspects of procedural training (Kneebone, Scott, et al., 2004). In "real world" situations, there are typically many random variables that can not be expected or replicated within a simulation. Therefore, it is fictitious as well as dangerous to believe that simulations are a perfect replica of their actual counterparts. To reduce this threat, it is essential for the instructor to provide students with an understanding of the

consequences of the actions they make during the simulation, and how those actions could affect "real world" situations and outcomes (Aldrich, 2006).

Not surprisingly, a crucial part of practice and learning is feedback and reflection on the part of the participants. Reflection following a simulation training experience can also be critical to improving and maintaining the learning that occurs during training. To create an effective reflection session, it is important for the faculty member to guide the students through the session, asking each participant for individual input. It is a good plan for the instructor to have a set of predetermined questions to facilitate a thorough discussion (Aldrich, 2006).

Besides oral discussion, written reflections can be very effective and such written work does have its advantages. Written reflections provide the student and the instructor a permanent artifact on which they can focus more practice and instruction, as well as access how well the learning objectives were accomplished. This can provide the instructor a better understanding on where they should focus their time, as well as how they can improve the simulation training to more effectively meet the needs of those and future students (Aldrich, 2006).

Likewise, written reflection provides a record of student learning throughout the years, and can be beneficial, if not essential, in evaluating a training program. Written reflections afford those evaluating the program with a specific understanding of the improvements made to the simulation-training program; as such they act as an excellent archival data source. This data can also be beneficial to the student in providing them with a record of the skills they have obtained throughout their educational career. It also

demonstrates where their strengths and weaknesses are and what they might want to address in the future (Aldrich, 2006).

A significant result of simulation learning is its ability to affect behavior change and not just cognitive change. This moment of clarity often occurs during the debriefing period and is the critical moment of learning; it often translates into a real change in future behavior (Musselwhite, 2006). In the Traditional Learning Model, the teacher teaches in the classroom and the student is expected to apply this knowledge on the job. As a result, the student is alone in the transition from the classroom to the workplace. However, in the Experiential Learning Model, the student applies their knowledge obtained in the classroom in the simulation. There is a demarcation line, but there is no complete separation like the previous model. Through the debriefing, the student learns from the instructor and sees more clearly areas for improvement as well as areas in which they excelled. This integration creates an easier transition for the student into the workplace, as well as provides students with a safe environment to practice their knowledge while examining and analyzing their achievements (Gadeken, 2004).

Simulations are also beneficial because they take into account a variety of learning styles. It is certainly the case that students obtain the information in multiple ways, through reading, hearing, or touching, and can therefore learn in the way that best suits them personally (Musselwhite, 2006).

Interdisciplinary Teaching within Simulation Training

The increased usage of simulations has led to an increase in interdisciplinary teaching teams. These instructor team approaches, not surprisingly, can lead to more complex and in depth discussions, taking into account different aspects and perspectives.

Additionally, interdisciplinary simulations provide students with an array of areas of expertise as well as a sense of how different fields or concepts fit together (Musselwhite, 2006).

Interdisciplinary teams also provide a more accurate sense of how conflicts, negotiations and problem solving takes place within the "real world." This is significant because it provides a better understanding of possible opportunities for collaboration among disciplines, leading to better cooperation within significant organizations within a city proper. This often occurs between police officers and fire fighters. Although in a specific situation, their duties and objectives may be quite different, collaboration can be effective in improving the outcome of the situation as well as the ease of obtaining a successful outcome. Instructors are provided the opportunity to act as role models for the students, regarding how meetings, discussions, or decision-making may occur between disciplines with often different objectives and priorities (Musselwhite, 2006).

Simulation Based Medical Education Program

One critical difference between "real world" experiences and simulation based experiences is the acceptance of preventable or unnecessary mistakes. In "real world" situations, mistakes may be costly or damaging, or even endangering a life or lives. Simulation experiences provide a safe environment where mistakes are viewed learning moments which create a positive way to learn and improve.

Simulation Based Medical Education (SBME) focuses on the importance of making and learning from mistakes. The SBME theory views making mistakes as a powerful educational experience and an opportunity for continuous improvement. SBME is based on the assumption that error management in a simulated environment will reduce

errors in "real life" situations. Another goal of SBME is to provide students with the tools needed to cope effectively with mistakes that cannot be prevented. Within this educational model, it is the teacher's role to determine the goals, set the standards, and judge the learner's performance (Ziv, Ben-David &Ziv, 2005).

To achieve success, a learner must have a strong desire to achieve the goals set by the teacher, and accomplish them through practice and learning from mistakes. The philosophical perspective behind this model values effort, practice, and the experience of mistakes by instilling humbleness in the student during their learning process.

Simulations are an excellent tool to provide a safe environment for mistakes to be made without affecting human lives while still observing the impact of the decision on the situation. Ideally, it is the expectation that feedback during the debriefing session will reduce the repetition of the mistake (Ziv, Ben-David &Ziv, 2005).

Error management involves many skills such as individual awareness of potentials for mistakes, recognition of when to ask for help, and strategies for recovering from mistakes thereby minimizing the effects of such mistakes. Following the simulation, debriefing and reflection typically involves personal reflection, peer and instructor observations, feedback from simulation participants (i.e. patients), review of videotape of session, and group discussion (Ziv, Ben-David &Ziv, 2005).

The ultimate goal of SBME is to enhance the participants understanding of the nature and causes of mistakes, and as such to devise ways to lessen the consequences of those mistakes. For a student to learn from his or her mistakes, it is necessary for the instructor to develop a sense of trust and encourage reflective thinking among the cohort of students. This creates a sense of security and as a result a feeling of confidence that

they will not be personally criticized for their mistakes; instead, the student is encouraged and stretched to reflect on personal improvement. It is also critical for instructors to establish a sense of value in the simulation experiences and that the student feels a sense of professional growth, an establishment of ethos of credibility. The instructor should act as a facilitator encourage an atmosphere of teamwork where new strategies or areas of improvement, peer-to-peer constructive criticism and positive reinforcement become commonplace (Ziv, Ben-David &Ziv, 2005).

Simulation Training Effectiveness

Research regarding the effectiveness of simulation learning remains mixed. A meta-analysis by Randel, Morris, Wetzel & Whitehill (1992) compared the instructional effectiveness of simulations to that of traditional methods of teaching. Findings noted that 56% of studies found no difference between simulations and traditional teaching methods. 32% found simulations led to an increase in student performance. 5% favored traditional methods over simulations. Although a majority of the studies found no difference between traditional and simulation teaching methods, research has found simulation teaching encourages many positive changes within the learning environment such as increased student engagement (Musselwhite, 2006), cognitive integration of knowledge, (Randel, Morris, Wetzel, & Whitehill, 1992), and interest in course topics (Chapman & Sorge, 1999).

Research shows real life simulations enhance the learning experience for adult learners, by helping them become more engaged in the curriculum (Musselwhite, 2006). Simulations require that students pay attention and become active in the learning process versus merely sitting in a classroom. Taking part in a simulation also increases the

likelihood of a student's desire to pay attention. This is not surprising as most students do not want to fail at a task in front of their peers. Actively taking part in the learning process typically leads to a higher degree of involvement in the course and an overall enriched learning experience.

Research has shown that the knowledge obtained through simulations is more likely to be integrated into the student's cognitive structure due to the high level of participation (Randel, Morris, Wetzel, & Whitehill, 1992). According to Wolfe (1985), an instructor guiding students through the simulation can have a large impact on the degree of student involvement because it requires the instructor to be more involved in a mentoring role. This involves the instructor's personality, their skill and their personal motivation. This is a major factor, since the simulation's effectiveness is directly related to the degree of participant involvement.

Chapman & Sorge, (1999) looked at the relationship between the degree of involvement in the simulation, and the learning outcomes achieved. They also compared simulation learning to two other more traditional instructional methods: topic papers and textbooks. Results showed, in general, that students felt simulations made the course more interesting and helped them to apply what they learned during lecture. The students also strongly suggested the use of simulations in future classes. This recommendation had a significantly higher occurrence than did the choice for only the textbook or written papers. Results also showed the more students were involved in the simulation, the more they felt it influenced their understanding of the course topics and made the course more interesting. Those students who were more involved in the simulation also proved to have

significantly higher scores on measures of the general learning objectives, (Chapman & Sorge, 1999).

Conclusion

In today's job market, employers are looking for employees with "real world" experience in addition to a degree. For students seeking their first job, this can be a large hurdle to overcome. Not only do students need to know the concepts and theories of their field, but they must also be able to practically apply these concepts and theories in "real world" situations to problem solve and make effective decisions, (Chapman & Sorge, 1999). Hands-on simulations are one effective method to achieve this "real world" experience within their coursework.

Current Programs

Currently, expansive and comprehensive simulation city projects are few and far between. Two facilities have risen above and beyond in this field, and have provided comprehensive training facilities that meet the needs of many different disciplines in their surrounding communities. The first of these programs is in Tarrant County, Texas, built on 27-acres of Tarrant County Technical College's campus (Blacker, 2002). The second, located 50 miles south of Atlanta, Georgia, is built on 620-acres and includes 6 major training complexes (Georgia Public Safety Training Center).

Tarrant County College Training Grounds

In response to the need for more expansive safety training for firefighters in the state of Texas, Tarrant County Community College began the development of a 27-acre, $18 million state-of-the-art training facility. It is estimated this investment will be recouped within ten years of operation. The center was marketed to state fire and police

squads as well as any department across the nation responsible for public safety (Blacker, 2002). The facility, certified by the Texas Commission on Fire Protection, provides firefighter certifications and an Associate of Applied Science degree in fire investigation and fire protection technology (Patterson, 2003).

Construction of the complex began in August 2001 and was put on a 12 month fast track construction schedule. The funds were raised through "an approach that used revenues from a property tax on the construction, renovation, and maintenance of property rather than general obligation bonds to generate the needed cash" (Blacker, p.63).

The expansive center includes a six-story building to simulate high-rise city buildings; a single-story complex modeling a three-store strip mall; a two-story building resembling a hotel or apartment complex; and a row of houses along a street complete with fences, alleys, and landscaping. The complex also includes a man-made water channel used to simulate swiftly flowing water; a large concrete pad for simulating fuel spills; and a system of trenches to practice trench rescues or broken gas lines. Also found on the complex are two partially enclosed classrooms, a fire station, administration building, and classroom building. Inside of the administration building, located in a central spot within the complex, is a computer lab, which controls many of the simulations, including the fire intensity and reaction to fire extinguishers. The complex is purposely built on uneven terrain to preserve the reality of the situations, (Blacker, 2002).

A majority of the buildings within the facility were designed with a high degree of flexibility allowing the buildings to simulate numerous situations. Moveable walls and features were put into place to ease in their transformations. The high rise buildings were

created to encompass a different situation or environment on each floor. These features include environments such as lobby, warehouse space, catwalk, stairs, elevator, office space, maze room, storage room, roof deck, sprinkler system, balcony (Blacker, 2002).

During construction of the project, civil engineers contracted for the project focused on ensuring that the water, fire, and structural systems worked effectively. The training center also consists of two ponds through which water is pumped for the fire exercise and act as a collection point for runoff from the training sessions. This water is then recycled through the two ponds. To fill these ponds initially, water was pumped from a nearby lake. The larger lake, which is used to simulate swift moving water, was build with a series of obstacles along the bottom to create choppy white-water flow (Blacker, 2002).

The facility was constructed with two hydrant systems, one connected to the city to protect the facility in case of a real emergency or fire. The other system is specifically for training, and water is pumped from the smaller pond through a filtration system and then into the fire trucks (Blacker, 2002).

Since training sessions are constantly taking place, many objects within the "burn" section of the facility must "burn" many times. These objects, ranging from pallets to sofas to desks, are built to resist warping from repeated exposure to temperatures of up to 1,100 degrees Fahrenheit as well as the cold water that is used to put out the fire. Since fires are also simulated within buildings, the buildings must also be built up to the same specification; in addition, they must contain drainage and ventilation systems to handle the smoke and water (Blacker, 2002).

Because of the environmental concerns common at most training centers of this kind, propane and natural gas are used to ignite the training fires. These fuels are preferable due to their environmentally inert characteristic, or their clean burning. Propane is used to ignite the exterior or outdoor fires while natural gas is used on the interior. A computer program by Symtron Systems, Inc. controls these simulations from the third-floor glass-encased administration building overlooking the complex. Using this program, instructors can view floor plans of the buildings and control the fire characteristics. Sensors in the buildings feed information back to the computer such as fire temperature and the presence of gases or extinguishing agents. The program also includes a safety feature which extinguishes the fires automatically and clears the smoke at the first sign of any unsafe condition or emergency (Blacker, 2002). The instructors within the administration building can control not only the fire characteristics, but they have control over much of the complex, including fire hydrants, streetlights, building power, and pump flow. With such a complex range of controls, they are also able to assess student response and achievement through computerized reports, including response time, success/failure rate, and the overall effectiveness of the training. Other students can also view the training sessions from a windowed classroom and lounge overlooking the complex (Patterson, 2003).

Georgia Public Safety Training Center

Located 50 miles south of Atlanta, the Georgia Public Safety Training Center is located on 620 acres and contains multiple complexes including: a driver training complex, an academic complex, a natural resources complex, a corrections complex, a firefighter's complex, and a firearms complex. The primary goal of the center is to meet

the needs of state and local public safety and judicial personnel and to promote interdisciplinary training and cooperation (Georgia Public Safety Training Center).

Nine resident agencies are housed within the center, and are responsible for coordinating the training of these various disciplines or organizations. These agencies are grouped into five disciplines: law enforcement training, corrections training, firefighter training, emergency medical services training, and judicial training (Georgia Public Safety Training Center).

Law enforcement training agencies include, the Georgia Police Academy, the Georgia State Patrol Training Unit, the Georgia Bureau of Investigator Training Unit, the Georgia Department of Natural Resources Law Enforcement Training Unit, the Department of Human Resources' Division of Youth Services, and the Georgia Public Safety Training Center's Instructional Services Division (Georgia Public Safety Training Center).

Corrections training agencies include the Georgia Correctional Training Academy, the Georgia Board of Pardons and Paroles Training Unit, and the Georgia Correctional Training Academy (Georgia Public Safety Training Center).

Firefighter training agencies include the Georgia Fire Academy and the Georgia Firefighter Standards and Training Council. Emergency Medical Services Training agencies include the Georgia Fire Academy and the Georgia Department of Human Resources' Emergency Medical Services Training Unit (Georgia Public Safety Training Center).

Judicial Training agencies include the Prosecuting Attorneys' Council, the Institute of Continuing Judicial Education, and the United States Attorney General's Office (Georgia Public Safety Training Center).

Other partners include the Georgia Sheriffs' Association, the Georgia Association of Chiefs of Police, Georgia Peace Officer Standards and Training Council, Georgia Prison Wardens' Association, and the Georgia Fire Marshal's Office (Georgia Public Safety Training Center). To coordinate such a diverse number of clientele takes significant organization skills, but the interdisciplinary nature of the facility is particularly important in today's world where homeland security is a growing concern.

Firefighter Complex

The Firefighter Complex within the training center includes two fire stations; a seven-bay station is used in training as well as to protect the center as a whole; a two-bay station is used to simulate a rural environment. The complex also includes a seven-story training tower, as well as a three-story burn building. The seven-story building allows for rappelling, and rescue scenarios. The three-story building is used primarily for burn situations. Other features include two burn pools available to be flooded with jet fuel or gasoline, an LP gas training area, an explosion pit, and water mains and hydrants of various sizes. The complex's primary source of water is a 22-acre reserve, and can be controlled for water pressure and pumping method (Georgia Public Safety Training Center).

Corrections Complex

A medium security correctional facility makes up the Corrections Complex, and accommodates around 400 inmates. This facility allows for training in correctional skills.

One section of the facility allows for simulation drills and mocks environments which are typical in county jails, lock-ups, and other state correctional institutions. The major resource in this complex is the inmates themselves, as they provide labor in many center operations such as printing, food service, grounds maintenance, house keeping, and audiovisual maintenance (Georgia Public Safety Training Center).

Academic Complex

The Academic Complex consists of classrooms, dormitories, auditorium, administrative offices, conference center, food services, technical services, physical fitness, library, and forensic laboratories equipped for intoximeter, sample analysis, photographic and darkroom training. The classroom and conference facilities accommodate various instruction and learning methods. The dormitory facilities houses up to 500 students and provide a comfortable space for visiting trainees. Physical fitness facilities are also available for personal training or group sessions. These facilities include a gymnasium, weight room, softball field, quarter mile track, pool for usage in underwater rescue training, and racquetball courts, which are also used for training in defense tactics and field search and arrest methods. The food service facility provides cafeteria and short-order food service to instructors, students, employees, and visitors. Meals are also catered within the conference center, which accommodates between 1,100 and 1,500. Technical services within the academic complex include audio-visual, television, slide and graphic production; as well as a complete film production studio to create training support materials. This facility is also fully staffed to assist with developing technical materials. Printing services are available within the complex to

provide hand-outs and other support materials to students. Finally, a fully staffed library is available on the complex (Georgia Public Safety Training Center).

Driver Training Complex

Designed to provide training to public safety personnel, the Driver Training Complex includes a skid course, tactical course, and emergency response course. The skid course trains drivers to recover from skidding, and is designed to allow for skidding at low speeds. The tactical course simulates the urban environment, and includes features such as traffic lights, signs, street surfaces, railroad crossings, and intersection designs. An instructor from a control tower controls many of these features. This course also includes an area to practice basic skills such as acceleration, deceleration, backing up, turning, parking and braking maneuvers. Finally, the emergency response course is designed to simulate a rural or open environment (Georgia Public Safety Training Center).

Firearms Complex

The firearms complex includes five ranges and a skills building. A multi-purpose range provides training for handguns, rifles, shotguns, and light automatic weapons. It includes twenty-eight firing points and two lateral moving targets. A twenty-five yard range allows for double-action firing and has 52 firing points. It employs turning targets as well as silhouette targets. Also included in the complex are a shotgun range, with a range of up to 75 yards and 44 firing points, a rifle range with 12 firing points at ground level, and one from a 28 foot tower, and a crime scene range, with three buildings, and friend or foe situation possibilities. A control tower controls the enemy targets and ambient lights during night firing. Housed within the skills building are two classrooms,

an office space, an armory, and four areas for judgmental shooting (Georgia Public Safety Training Center).

Natural Resources Area

Included in the Natural Resources Area is a 22-acre reservoir for training in rescues, underwater recovery, or boating incidents. It also contains a 35-acre undisturbed woodlands area for hunter safety training as well as an outdoor training facility for other disciplines. The reservoir also includes an underwater obstacle course. The area also includes a boat launching ramp, two docks and an outdoor classroom (Georgia Public Safety Training Center).

Conclusion

In conclusion, simulation training can be an effective method for increasing student learning methods, student engagement in learning, learning from mistakes, and integrating knowledge into cognitive structures. Two existing simulation cities provide shining examples of the potential of a simulation city, Tarrant County College Training Grounds and Georgia Public Safety Training Center. Both of these programs provide their regional areas effective and comprehensive training grounds for increasing community safety and knowledge.

Chapter III: Methodology

Simulation training can be an effective method of providing "real world" experiences to students within an environment that is "safe" to learn from mistakes. To provide the region with this resource, Chippewa Valley Technical College is in the process of developing a plan to build a simulation city, with the vision of creating the opportunity for students and community members alike to train within an array of training features. To start this immense project, a needs assessment was conducted to determine initial community needs regarding the SimCity features and complexes. A needs assessment was conducted through the development of a survey (Appendix B) mailed to regional organizations which may potentially use the SimCity. A major limitation of the current research is the hypothetical terms in which the survey and cover letter were written, requiring the organization to use their imagination and creativity to determine how the needs of their organization could be met by the SimCity.

Subject Selection and Description

The sample for the current research included 572 organizations located within the Eau Claire, Wisconsin regional area. These organizations were compiled from Chippewa Valley Technical College instructors and staff, which had had previous contact with the organizations. Several organizations were also targeted through collecting their information from the Yellow Pages in the Eau Claire phone book. The organizations in the sample were from many different fields, ranging from food distribution, construction, health care facilities, or human services. All public safety organizations were also contacted.

Instrumentation

The survey (Appendix B) created for the current research, was sent out on Monday, April 16, 2007 to 572 regional organizations. This survey included twelve questions; the first three questions involved contact information for the organization. The following nine questions regarded the organizations' potential uses of the SimCity, possible training programs, features required for those programs, amount of usage expected, as well as the amount of money typically allocated to organizational training needs. The survey collected qualitative data, with all but one question, which was a multiple choice question, and was created by the researcher specifically for the current research project. Also included with the survey was a short cover letter, (Appendix A) written by Judi Anibas, Campus Director of the Emergency Services Center for CVTC, and head of the SimCity project. This letter explained the purpose of the project, and the SimCity, and provided contact information for Judi Anibus, if the organization sought more information. The letter also requested the surveys be returned in the included self-addressed return envelop, to Chippewa Valley Technical College by Friday, April 27th.

Data Collection Procedures

The twelve question survey was sent through the U.S. mail service to 572 organizations on Monday, April 16th 2007 from Chippewa Valley Technical College. A return date of Friday, April 27th was requested. 38 surveys were returned; 6 of them blank or with a note regarding lack of project relevance to the organization, 7 of them were returned due to a wrong shipping address, and 26 of them were completed by the organization.

Data Analysis

A content analysis was completed on the data retrieved from the survey. The content analysis found several themes for each question, and broke the responses down in to categories, creating quantitative data for each category.

Limitations

A major limitation of the current research is the hypothetical terms in which the survey and cover letter were written, requiring the organization to use their imagination and creativity to determine how the needs of their organization could be met by the SimCity. Also, because only qualitative data was collected, the data analysis was limited in its possibilities and ability to be generalized. Consequently, the data could simply be analyzed for themes and suggestions made, based solely on the number of comments in each category. Finally, the limited sample size, due to the number of surveys returned, limited the conclusions and generalizations the researcher could make.

Chapter IV: Results

The purpose of the current research is to determine the needs of organizations within the Chippewa Valley Technical College region, regarding the usage of a SimCity for training purposes. A survey was developed and mailed to 572 local organizations to determine their needs and potential usage of CVTC's SimCity. The survey included eleven open-ended response questions, and one multiple choice question, all of which were analyzed using a content analysis.

Item Analysis

The first three questions on the survey regarded the organization name, phone, fax, and address for the creation of a contact list for future SimCity projects. The subsequent questions were analyzed for common themes, into categories. Each category has a title, as well as a number which represents the number of responses that fell within that theme. Several of the questions also have an "Other" category, which represents responses that did not relate to any other response, and was therefore categorized within the miscellaneous category. Although the responses in the "Other" category did not relate to any other responses, they are still a significant part of the data, and should be taken into consideration along with the other categories.

Question 1: Organization Name

The organizations were themed into four categories (Table 1), based on the organization name specified in question 1. Nineteen of the organizations were classified as either "Police, Fire, or Sheriff's Departments," while two were categorized as "Health Care Facilities," two as "businesses," and two as "Energy Cooperatives." One survey was returned from a school district.

Table 1: Question 1

Question 1: Organization Name	
Police, Fire, Sheriff's Departments	19
Health Care Facilities	2
Businesses	2
Energy Cooperative	2
School Districts	1

Question 4: What do you see as potential uses of the SimCity by your organization?

Responses to question four varied significantly (Table 2), with the most common category being "emergency/disaster training" at thirteen responses. Seven responses also fell into a miscellaneous category labeled "Other." For question four, the "Other" category included uses such as, new officer training, TRT scenarios, patient decontamination procedures, ICS and NIMS training, and crowd control training.

Table 2: Question 4 Categories

Question 4: What do you see as potential uses of the SimCity by your organization?	
Emergency/Disaster Training	13
Active Shooter Scenarios	8
Bomb Threats/ Searches and Rescues	7
Tactical Training	7
Crisis/hostage Negotiation	5
Evacuation Training/ Fire Prep Training	3
Crime Scene Reenactment	2
Robbery Situations	2
Multi-disciplinary Training	2
Other	7
Blank, N/A	4

Question 5: How would your organization use the SimCity in regards to scenario training?

Responses to question five were the most varied of all of the questions with eighteen categories (Table 3). "Emergency/ Disaster Training" was once again the most common response with twelve responses fitting into the category. This question also resulted with the most questions in the "Other" category, with thirteen responses. These response included, OSHA permit training, ergonomics training, installation off overhead and underground power line and measuring and/or identifying underground hazards, handling of EDP, shooter scenarios in large rooms or populated areas, ICS and NIMS scenarios, down officer rescue, vehicle assaults, and multi-agency response training.

Table 3: Question 5 Categories

Question 5: How would your organization use the SimCity in regards to scenario training?	
Emergency/ Disaster Training	12
Workplace Scenarios/ Evacuation/ Building Security	6
Active Shooter/ Sniper	5
Hostage/ suspect Negotiation	5
Robbery	5
Emergency Response	4
Patrolling/ Dispatch Response Scenarios	4
Driving Training/ Collision Rescue	3
Barricaded Suspect	3
Crime Scene Investigation	2
Fork Lift Training	2
Explosions/ Spills/ Contamination	3
Confined Spaces	3
High Risk Warrant	2
Other	13
Blank	4

Question 6: What specific props, structures, or features would your organization need in the SimCity to meet your training needs?

Responses to question six were themed into ten categories (Table 4), with the categories "Public Buildings" and "Businesses" tying for the top categories with eleven responses. Nine responses were also themed into the "Other" category, with these responses including, deacon tent, staging area, properly and improperly installed underground lines/obstructions, complete mock city, training accommodations twenty-four-seven, railroad, airplane, buildings capable of withstanding FX marking cartridges or AIRSOFT ammunition, and vertical and horizontal access to confined spaces.

Table 3: Question 6 Categories

Question 6: What specific props, structures, or features would your organization need in the SimCity to meet your training needs?	
Public Buildings I.e. Schools, College, City Hall	11
Businesses I.e. banks, manufacturers	11
Residential Spaces Homes	9
Roads, Intersections, Vehicles	7
Water/ Hydrants	6
Misc. Lights, Curbs, Signs, Trees	4
Combustibles/ Gas	3
Props/ Actors	2
Other	9
Blank	6

Question 7: How often do you predict your organization would use the SimCity if it was built to meet the above needs?

Question seven was the only multiple choice question, as the participants were asked to circle only one response from the choices given. The most common response indicated was "Several Times a Year," with seventeen responses (Table 5).

Table 5: Question 7 Categories

Question 7: How often do you predict your organization would use the SimCity if it was built to meet the above needs?	
Several Times a Year	17
Once a Year	8
Several Times a Month	1
Blank	5

Question 8: Besides your needs, what other ideas of buildings, features, or natural resources do you feel would be beneficial to create within the SimCity?

Responses to question eight fit into eight categories (Table 6), with "Water Features," and "Business Buildings," categorizing the most common responses. There were also thirteen responses that fit into the "Other" category; these included, movable walls, electrical systems, the use of "IV codes" or NIMS training, computer and logistics support, a rural aspect, landing zone for Mayo 1, communication system for role players, functional restrooms, tornado and explosion simulation, multi-story electrical power, dams, railroads, bridges, and actors.

Table 6: Question 8 Categories

Question 8: Besides your needs, what other ideas of buildings, features, or natural resources do you feel would be beneficial to create within the SimCity?	
Water Features	6
Business Buildings	5
Flexible Lighting	3
Natural Features i.e. Trees, Shrubs, Lawns	3
Barricades/ Barriers	2
Road Systems	2
Other	13
Blank	12

Question 9: What is your organization's budget typically allocated to training? (Per employee or as a whole, but please indicate)

The responses to question ten were themed into seven categories (Table 7), with the most common response being "0-$4,900." While seven participants left this question blank, all but two that responded indicated their organization's total yearly training budget, while two respondents indicated their organization's per officer yearly training budget.

Table 7: Question 9 Categories

Question 9: What is your organization's budget typically allocated to training?	
0-$4,900	7
$5,000- $9,000	4
$50,000+	3
$20,000-$49,000	3
$10,000- $19,000	2
Per Officer Totals	2
Blank	7

Question 10: If the SimCity were created by CVTC to meet training needs, how much time and money would you expect your company to allocate to scenario trainings as this site?

The most common response category for question ten was "Unknown/ Not Sure/ Depends" with nine responses (Table 8), while five respondents provided a specific dollar commitment they estimated would be allocated toward SimCity training programs.

Table 8: Question 10 Categories

Question 10: If the SimCity were created by CVTC to meet training needs, how much time and money would you expect your company to allocate to scenario trainings as this site?	
Unknown/ Not sure/Depends	9
Specific Dollar Commitment	5
One-Two Time Per Year	4
Depends	4
Blank, Unknown, N/A	10
Other	3

Question 11: What other organizations do you think could benefit from the use of SimCity?

The most common response for question eleven was themed into the category "Fire/EMS/Police" with thirteen responses (Table 9). Ten responses were categorized as "Public Works," while ten respondents left this question blank.

Table 9: Question 11 Categories

Question 11: What other organizations do you think could benefit from the use of SimCity?	
Fire/EMS/Police	13
Public Works	10
Utilities	8
Schools	4
Hospitals	3
Businesses	3
DNR	2
Blank	10

Question 12: Additional Comments or Suggestions?

Seven participants responded to question 12 with additional comments (Table 9). Of these responses, four were categorized as comments of appreciation, while three were categorized in the "Other" category.

Table 10: Question 12 Categories

Question 12: Additional Comments or Suggestions?	
Appreciation	4
Other	3
Blank	24

Chapter V: Discussion

A needs assessment was conducted to determine the needs of the regional community regarding usage of a SimCity, to be built by Chippewa Valley Technical College (CVTC). 572 mail-out surveys were sent to local organizations in various fields. While 38 surveys were returned, only 26 were usable. The usable survey responses for questions four through twelve were analyzed using a content analysis method to categorize the responses.

Limitations

A major limitation of the current research is the hypothetical terms in which the survey and cover letter were written in, requiring the organization to use their imagination and creativity to determine how the needs of their organization could be met by the SimCity. Also, because only qualitative data was collected, the researcher could not run quantitative statistical analyses, and therefore the data analysis was very limited in its possibilities. Consequently, the data could simply be analyzed for themes and suggestions made based on the number of comments in each category. Finally, the limited sample size, due to the number of surveys returned, limited the conclusions and generalizations the researcher could make.

Conclusions

In general, survey results suggest public emergency service organizations have the most potential immediate usage of the SimCity, with nineteen of the responses coming from police, fire or sheriff departments. The data suggests this group to be the initial target audience of the creation of the SimCity, and therefore, the structures and features created should focus on meeting the usage needs of this specified group.

Responses to the question of potential usage by organizations in general focused on, emergency/disaster training, active shooter scenarios, bomb threats/searches and rescues, and tactical training as the top potential uses specified. When the question was asked more specifically regarding the respondents organization, the category "Emergency/ Disaster Training" received twice as many responses as any other category. This large number of responses suggests a significant need and interest in this type of training, and should act as a guide for the initial SimCity building by CVTC. As for the specific features necessary to enact these training drills, specific types of buildings were the most common responses, specifically, residential, businesses, and public buildings, while water features and flexible lighting were also common responses. If the above training features and scenarios become a reality within CVTC's SimCity, seventeen respondents estimated their organization's usage would become several times per year, which would provide the SimCity with steady and frequent usage.

Recommendations

Research of current SimCity programs suggests SimCities are often expensive and time consuming to create. It is therefore the recommendation of the researcher to build the SimCity at CVTC in stages, focusing on the needs of the community as they arise. The current research suggests that presently, the group that is the most interested and eager to use the SimCity for training purposes is that of fire, police, and sheriff's departments. It is therefore the recommendation of the researcher to focus initially on this group, building features and buildings that meet the needs of this stakeholder group. Ideally, this will not only get the SimCity open for usage, providing publicity and free advertisement of the opening, but creating a "buzz" of interest in the community. Such

interest would allow organizations to examine how the SimCity could meet their own particular training needs, and hopefully spark interest in becoming involved with the SimCity project.

Although there were other types of organizations that responded to the survey, they were not the majority, and therefore it may be necessary for their needs to take a backseat until the SimCity is up and running in its initial construction. It is also the recommendation of the researcher that upon the opening of the SimCity, the primary stakeholders would be central in determining the next stage of features to add to the complex and decide the most beneficial manner to meet the need of the other survey respondents.

Once a target group is determined, the second stage of building could commence and another round of surveys may be beneficial to determine their particular needs in greater detail, customizing the buildings and features to meet their needs. It is the hope of the researcher that within several years, all organizations with training needs can be accommodated by CVTC's SimCity as it progresses and grows. The creation of a steering committee to focus on the growing and upcoming needs of the regional community and guide the future developments of the SimCity is an important recommendation because it will allow for a specific group to focus on future demands. This committee could also oversee the planning and construction of the SimCity to ensure that the facility and the college are meeting the needs of the stakeholders it is intended to serve. For this committee to be both relevant and effective, it is the recommendation of the researcher to recruit at least one representative from each stakeholder group (i.e. fire, police, health care facilities) to provide an anchor and point-of-contact determining the needs of each

specific group. This will ensure the needs of these groups will be effectively met as well as potentially increase the longevity of the SimCity usage.

Future research should focus on the needs of other stakeholder groups determining which groups are most likely to use the SimCity in future stages of development. The survey created for the current research could be modified to meet the needs of this future research. This research could also help in determining potential leaders from different fields who could become members of the steering committee to provide further guidance as to the needs of their organizations' field.

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Appendix A: Survey Cover Letter

April 13, 2007

Hello Business and Industry Partners;

As Campus Director of the Emergency Services Center for Chippewa Valley Technical College, I am committed to providing the community with resources that will better prepare all for unforeseen situations. With this vision in mind, I am asking for a few minutes of your time to help us determine what the needs of your organization may be in relation to our future growth plans.

The College is conducting a needs assessment for the building of a simulation city, which can be available to the community for training purposes. Let me give you a quick example of how a business may utilize a simulation city to train personnel. A power company may choose to use the simulation city environment to train personnel in dealing with downed power lines in a controlled environment. Use of a simulation city gives this training exercise access to a wide variety of situations such as traffic control, vehicle extrication, etc.

As the Campus Director of the Emergency Services Center for Chippewa Valley Technical College, I understand how valuable your time is, however your input is critical to the building of this facility. Please take a few moments to think about how you might utilize a simulation city in your business training needs.

Please complete and return the enclosed short survey to me in the envelope provided by April 27, 2007. If you have any questions, please feel free to contact me at (715) 855-7532.

Sincerely,
Judi Anibas

Program Manager-Focused Learning Centers
Emergency Service Education
Transportation Education
Chippewa Valley Technical College
620 W. Clairemont Ave.
Eau Claire, WI 54703

Appendix B: Survey

Simulation City Needs Assessment

The Chippewa Valley Technical College (CVTC), in Eau Claire, Wisconsin, is in the initial stages of planning the construction of a simulation-training facility (SimCity). It is our hope that the SimCity will meet the training needs of the region's public and private sectors as part of Police, Fires and Emergency Medical Services. It would also provide great training opportunities for business, industry, community, and organizations in the areas of job proficiency, health, safety, and disaster preparedness through simulation and real time training.

SimCity is still in a planning stage as we seek potential partners who could benefit from this type of training. We are asking for your input to determine which props, buildings, and training scenarios would benefit your organization's training needs.

Please take a few minutes to answer the following questions as they relate to your organization and its potential use of the SimCity. Participation in this research is **completely voluntary**, and non-participation will result in no retribution. Voluntary participation will be assumed by the act of returning this survey.

Thank you very much for your input, your time is greatly appreciated!

1. Organization Name_____
2. Organization phone _____ Fax_____
3. Organization Address_____
4. What do you see as potential training use(s) of the SimCity by your organization?
   _____
   _____
5. How would your organization use the SimCity in regards to scenario training?(i.e. gas explosion, heavy equipment operations, water rescue, robbery, theft, confined space training, disaster training, fork lift, driving)
   _____
   _____
   _____
   _____

PLEASE CONTINUE ON BACK PAGE

6. What specific props, structures or features would your organization need in the SimCity to meet your training needs?

7. How often do you predict your organization would use the SimCity if it was built to meet the above needs? (please circle only one)

   Daily Several times a week Once a week Several times a month

   Once a month Several times a year Once a year Other_____

8. Besides your needs, what other ideas of buildings, features or natural resources do you feel would be beneficial to create within the SimCity?

9. What is your organization's budget typically allocated to training? (Per employee or as a whole, but please indicate)

10. If the SimCity was created by CVTC to meet training needs, how much time and money would you expect your organization to allocate to scenario trainings at this site?

11. What other organizations do you think could benefit from usage of SimCity?

12. Additional comments or suggestions?

Appendix C: Survey Data

Organization Name	Phone #	Fax #	Address
St Josephs Hospital	715-723-1811	715-726-3615	2661 Co Hwy I, Chippewa Falls, WI
UW-Stout PD	715-232-2266	715-232-1142	817 So. Broadway, Menomonie, WI
Altoona Police and Fire	839-6090	839-1610	1904 Spooner Ave. Altoona, WI 54720
Agri-tech Services Inc.	715-568-2933	715-568-2936	16779 98th St. Bloomer, WI 54724
Countryside Cooperative	715-672-8947	715-672-5131	514 East Main P.O. Box 250 Durand, WI 54736
Eau Claire Energy Co-op	832-1603	832-2055	8214 Highway 12 fall Creek WI 54742
Bee Forest LLC	715-673-4127	blank	51130 State Hwy 25 Nelson/ Bee Forest Products N5270 City rd V
Mondovi PE	715-926-4423	715-926-3538	225 E. Main, Mondovi WI 54755
Eau Claire PD	839-4975	552-7256	PO Box496, Eau Claire, WI 54702-0496
Northwestern Bank	715-723-4461	715-723-0586	202 North Bridge Street Chippewa falls, WI 54729
School District of Neillsville	715-743-3323	715-743-8718	614 E. 5th street, Neillsville WI 54456
Eau Claire Sheriff's Office	839-4701	839-4854	728 2nd Ave, EC 54703
S & C Bank	834-1111		3406 Oakwood hills pkwy
Nestle' Nutrition-USA	839-9440	480-379-3701	PO Box 168
Jackson County Sheriff's Office	715-284-9009	715-284-0252	30 N. 3rd St. Black River Falls, WI 54615
Minnesota Wire & Cable Co	715-833-2224		1903 Oxford Ave
Dove Healthcare Nursing & Rehab	715-552-1030	715-552-1033	1405 Truse Bvd. E.C.
Elk Mound Police Dept	879-4411	879-4411	202 E. Menomonie Street
Durand Police Dept	715-672-5948	672-4040	740 7th Ave W. PO Box 39, Durand WI 54736
Menomonie Police Dept.	715-232-2198	232-2198	615 Stokke Parkway Dr. Menomonie, WI 54751
Pepin County Sheriffs Dept	715-672-5944	672-8753	740 7th Ave W. Durand WI 54736
Thorp Police Department	715-669-5523	715-669-7407	300 W. Prospect St. P.O. Box 334 Thorp WI 54771
Chippewa Falls Police Department	715-723-4424	715-723-1456	210 Island St. Chippewa Falls, WI 54729
Menomonie Police Dept.	715-232-2198	715-232-1579	615 Stokke Parkway Dr. Menomonie, WI 54751
River Falls PD: Roger League	715-425-0909	715-425-0932	111 N. 2nd street. River Falls, WI 54022

Sparta Police Department	608-269-3122	608-269-2156	121 E. Oak St. Sparta, WI 54656
Chippewa County Sherrifs Dept.	715-726-7700	715-723-6471	32 East Spruce Street, Chippewa Falls, WI 54729
City of Barron Police Department	637-1100	673-8700	1456 E. lasalle Ave, P.O. Box 156, Barron, WI 54812
Eau Claire PD	839-6060	838-2674	740 2nd Av. Eau Claire, WI 54702-0496
Lt. Jerry Cody, New Richmond PD	715-246-6667	715-246-4370	156 E. 1st Street. New Richmond, WI 54017

ntial Uses of SimCity by org.	Uses in regards to scenario training
ntamination procedures (of patients)	Building security and stages during a disaster-re-routing traffic, securing entrances
ing for active shooter-staging-incident command	Workplace violence related scenarios, bldg clearings (maybe) emergency response to ar criminal behavior
cal training at all levels	Active shooter-IC exercise-evacuation-most tactical situations w/police and/or fire
	N/A
y and emergency	confined space, driving, OSHA "permit" training, fork life, explosions and spills, ergonimic training
ırrently train line workers at the simulated overhead and underground ems (electric distribution) at CVTC- any additional development even an ı layout would be useful	installation of overhead and underground line (power) and measuring and/or identifying underground hazards
	blank
se of emergency situations vie tornado power outage	disaster training
s negotiation training, active shooter, tactical response, building shes, crime scene investigation accident reconstruction, (many more for training)	gas munitions, simulation weapons (paint ball) total station, crisis negotiation equipment, tactical gear, etc
ıery prevention and disaster training	robbery Disaster
ster training, bomb scare training, hostage training	disaster training
ıumber of law enforcement investigation and emergency response ng. From rapid response, deployment to crime/crash scene tigation, etc	driving-normal, emergency & tactical, crash scene senarios, crime scene mapping & measuring
	blank
ster recovery	confined space rescue training, fire training, forklift training, chemical spills response training, OTR driver/handling & collision avoidance training
e shooter scenarios	robbery, sniper and counter-sniper, active shooter, barricaded suspect
	no
uation of a large medical facility. Fire training for staff.	Disaster evacuation- (i.e. fire, tornado, hazardous spill)
ol related incidents (armed suspects) gas leaks	we would be happy to help with any training or help set up the trainings
al disasters, hostage situations, evacuation, school bomb threats, etc	disaster training, motor rescue, hostage situations
l tactics & response, SWAT training, and multi-jurisdictional training SWAT call-out for school or university training) natural disasters	MPD would be interested in using the facility for tactical training and patrol response to active shooter training, tactical training would include barricaded subject, hostage rescue high risk warrant and handling of EDP

·gency services response-TNS purposes	Responding to disaster or emergencies
ain officers for natural or man-made disasters, active shooter arios, hostage situations	shooter scenarios in confined spaces, large rooms, populated areas, hostage situations, burglary in progress calls, disaster training-natural and man-made
ario based firearms, traffic stop, alarm response, ICS and NIMS type ng	crime scene, traffic stop, bank and business alarm response, FX ICS and NIMS scenario
rms, SWAT training, simulations	simulations (reality based training); scenarios like high risk warrants, barricaded subjects active shooter, hostage situations, basic room clearing and perimeter security, down offic rescue and vehicle assaults
d response to active shooter, hostage/barricaded suspect, crowd ol, incident command, bank robbery, etc	emergency management, ICS response, patrol response techniques
al response, multi-agency response (fire, police, EMS, etc) incident With real deployment, rescue training, search and recovery	multi-agency response training utilizing police, fire, rescue, other. Resources to work on individual tasks combined with the overall command of an incident. Also-tactical training would be enhanced using real buildings-sitting perimeters; getting on turget, etc
l scenarios, swat team training, fire, ambulance, scenarios	all the above
eve it would be a valuable asset to all of our communities and is greatly ed	robbery, theft, disaster training, emergency vehicle operations, joint LE, EMS and fire training, evacuation procedures and protocol scenarios, etc.
cal scenarios- for out TRT scenarios, New officer role playing training, rvice updates	tactical responses, dynamic and perimeter and hold. Role playing responses-domestics, banks, natural disasters, building searches, traffic control, etc.
ı more realistic scenario training	train for law enforcement response to dispatches, train for law enforcement involvement natural or manmade disasters

Specific features required	Predicted usage	Other possible features
Decon tent, water, staging area	several times a year/ once a year	blank
I would like to see at least one bldg depict a college type setting/area	once a year	ability for low light scenarios, Could you move walls so people don't necessarily get used to the city?
Bank, school, business front, hydrants, intersections	several times a year	some water access i.e. pond, lake, river
N/A	blank	blank
equipment and structures, products (gas & combustibles/compressed gas)	several times a year	blank
properly and improperly installed underground obstructions/lines: gas, telephone, fiber optics, sewer septic, etc. water	several times a year	electrical systems including factory switches gear circuit gear where are blasts could occur
blank	blank	blank
blank	once a year	different styles and shapes of businesses
Store front and residential building shells, roadway with intersection and curbline, fire hydrant, light poles, signs, etc, stairways and doorways inside the building shells	several times a year	streetlights for night training, tavern setting in at least one building
teller stations, guns, robbers	2-3 times per year	blank
class room situations, urban training situations, street/bus/car congestion	once a year	The use of "IV codes" or NIMS training for all involved
realistic homes, single and two story types, trailer types, live or at lease simulations capable classrooms available in several areas near the various sites	several times a year	curbed intersections, uncurbed roads & intersections, roads w/curves, hill, mowed grass area, unmowed area, impact area with movable barricades
blank	blank	blank
vertical & horizontal access confined spaces	several times a year	computer & logistics support
complete mock city	several times a month	a rural aspectt
N/A	N/A	not sure
Multi-level building for evac. Practice	once a year	blank
school related or city type buildings	once a year	persons to roll play for training
school, trees, vehicles, buildings, water	several times a year	blank

SimCity should be designed to accommodate training 24/7. The training facility should have working street lights, building lights (outside & inside) and signs, other features to include should be trees, shrubs, fire escapes (ladders or steps) alleyways, dumpsters, vehicles, etc	several times a year	landing zone for Mayo 1, work fire hydrants, multiple story buildings, realistic road system, effective communication system for role players (loud speaker to broadcast noise, warnings, or general info, etc)
blank	several times a year/ once a year	blank
variety of different accesses to building/rooms, equipment that would be similar to what you would have in school, factory, or house	several times a year	be able to simulate tornado or explosion for bldg
Roads, variety of building types, fire hydrants and other typical infrastructure components	possibly twice	functional restrooms, running water at a couple locations, trees/scrubs
Variety of buildings, alleys, and vehicles. Any of those that would permit the use of simulation FX marking, A bus and semi-trailer if possible for vehicle contacts/assaults	blank	
bank, school, railroad, airplane, trucking accident/hazardous spill	several times a year; In-service, specialized and on occasion in-house training event. Cost of getting our sept. at the site in travel and OT is an issue	blank
Buildings capable of withstanding FX marking cartridges or AIRSOFT ammunition. Emergency vehicles	once a year	collapsed structure, bombed structure for evidence recovery and rescue
props- such as a business, robbery etc. Residential family disturbance, hostage	several times a year, uncertain	blank
anything that would relate to the above	several times a year	lakes, rivers, wooded areas, natural barriers, dams, railroads, bridges, large manufacturers
try to make it like any other neighborhood in a community w/ a mix of residential business	several times a month	multi-story electrical power, water service, street lights, traffic lights
buildings in commercial settings, residential settings and large apartment settings	1 to 2 times a year	must be in a river or lake setting-must involve chemicals, manufacture or storage

Organization training budget	Estimated time and money to be allocated to SimCity	Other possible organizations
varies by job, usually just enough for required training	blank	Fire, EMS, police
That varies-we don't know we have DOT funds/officer. Other funds too fluid to know for sure	Time: 1x/per year Money not sure	blank
police: 5,000 Fire: 2,500	50-75%	public works
blank	blank	blank
$10,000-20,000	$2,000-5,600: dependent on utility and experience and applicability	County, state & municipal services & care givers Bauer Built in Durand (large distribution center)
not available	we have in the past assisted in the installation process of the electrical distribution equipment otherwise specific commitment is not available	electricians, inspectors, gas utility persons, telephone line installers, fiber optic installers
blank	blank	blank
$1,500	$5,000	Schools
$52,800	It would be used almost every year for in-service TRT would frequently use it for monthly training also the traffic reconstruction team and evidence team	fire dept., excel energy?
50,000 annually	blank	for robbery-convenience stores, blanks, credit unions, maybe even grocery stores because of banks being evacuated in there facility
Minimal ($1000 as a whole max)	occasionally not on a frequent basis	CESA # 10, otherwise educational institutions, local fire/law enforcement
All divisions $ 26,250	It would depend on what would be available or offered. We do 1/4 ly training and could use it at least that often for a day or 1/2 day	Insurance adjusters and investigators, private sector investigators
blank	blank	blank
> $50,000	$25,000 per year; roughly 1/2 of working budget	blank
$10,000/year	$5,000-10,000/year	fire, emt, military
blank	N/A	blank
blank	blank	blank

$500-1,000 per-person	16 hours a person/ $500-1,000 by department	fire departments, public works departments
$1,000 per year-dept	unknown	sewers, water depts, police, fire, EMS, schools, city councils, county boards
Dept training budget is $9,000 which includes tuition, lodging, meals and travels (exemption is OT)	overtime is the hidden expense with any training endeavor, very difficult to make a commitment without more information	Fire, EMS, DCI, FBI, ATF, Excel Energy, Street depts, Co. hwy Depts, Hospitals (Mayo 1), DNR, and first responders
200+/officer	?	Utilities fire, EMC, Etc
About $1000 for department which includes miles, meals, and hotel	we would try to use the facility a couple of times a year. It is unknown how much money we would allocate at this time.	Fires, EMS, Emergency Government, Medical-hosp/Dr., Energy Companies
$8,000 annually for our department	possibly would use once per year.	blank
2007: $20,600 as a whole to include travel, meals, lodging, misc expenses	If it wasn't party an in-service or specialized program, and only on our won, 1-2 times per year	fire, EMS, Schools, utility companies, DNR, possibly other state agencies
$20,000 annually	unknown	Any emergency response organization or corporate office in need of training employees in crisis management
$1,500 per division 3 divisions $4,500 total	budget is extremely tight	blank
$3000 as a whole	that would depend on the cost per session/per officer and how well it did meet our needs	EMS, Fire, city councils, hospitals, banks, businesses, large manufacturers
blank	blank	Fire, red cross (disaster response) power co. Business-evacuation planning and rehearsals, EOC partners
$6,000 department total	that would require seeing SimCity to decide what benefit we would get from the training	Fire, EMS, Emergency government

Additional Comments	Additional Contact Information	
blank	Mollie Stiehl, RN Coordinator of Emergency Management	715-726-3220; mstiehl@sjcf.hshs.org
blank		
blank		
blank		
blank		
blank		
blank		
blank		
I think this is a wonderful idea!		
blank	Mr. John Gaier, District Administrator	Mr. Tim Rueth, Principal
blank		
I don't think this is a service we would use. Typically bank training is best suited = The facility whiter internal or law enforcement training		
blank		

I have been personally involved in numerous shooting incidents in my 18-year law enforcement career. I have seen on numerous occasions officers that "freeze up" and fail to act. LEO must be trained, or conditioned, to use deadly force when justified. Over the years, way too much emphasis has been placed on liability. We have HAMSTRUNG over LEO and many cannot make the crucial decision to use deadly force. There must be a fundamental change in training (i.e. active shooter situation). A very good book that LEO should be made to read is On Killing: the Psychological cost of learning to kill in war and society. By LTC Dave Grossman (army-retired)

blank

blank

blank

Mr. John Gaier, District Administrator

blank

blank

blank

I think it is a great idea and it would benefit many people.

blank

blank

blank

if you pull this off, I would be willing to instruct some critical management techniques. This was a dream of Alan Johnson, I'm glad to see it moving forward. Mike kass; Sparta Police

blank

Thank you!

blank

blank

Appendix D: Institutional Review Board Form

University of Wisconsin Stout

Protection of Human Subjects in Research Form

Data collection/analysis cannot begin until there has been IRB approval of this project.

Directions:

- **Individuals who have completed the UW-Stout Human Subjects Training and can prove certification are eligible to file this form.**
- **This form must be filed and approved prior to any student (undergraduate or graduate), faculty, or staff conducting research.**
- **Complete this form on-line and print. Handwritten forms will not be accepted. *For your benefit, save your completed form in case it needs to be revised and resubmitted.***
- **Send or take the completed form, with required signatures and required materials attached, to Research Services, 152 Voc. Rehab. Building.**
- **This is a professional document; please check spelling, grammar and punctuation.**

Research is defined as a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

A human subject is defined as a living individual about whom an investigator obtains either 1) data through intervention or interaction with the individual; or 2) identifiable private information.

Investigator(s):
Name: EmmaLee Ericksen ID: 0249439 Daytime Phone # 715-309-9709
e-mail address: ericksene@uwstout.edu Signature: _____

Name: ID: Daytime Phone #
e-mail address: Signature: _____

Name: ID: Daytime Phone #
e-mail address: Signature: _____

For students:
Research Advisor's Name: Renee Surdick Department: Operations,Construction & Management
Signature: _____
Date of Approval: _____
Research Advisor: Have you completed UW-Stout's Human Subjects Training? Yes ☐ No ☐.
Reminder: You must have completed the new training after January 2, 2007.

Project Title: Needs Assessment of Chippewa Valley Technical College (CVTC) Simulation Training City

Sponsor (Funding agency, if applicable): **Chippewa Valley Technical College**
Is this project being supported by Federal funding? Yes ☐ No ☒

You must answer all of the following questions completely and attach all required forms.

1. Describe the proposed research/activity stating the objectives, significance, and detailed methodology (approximately 250-500 words; descriptions are to be written in future tense).

Objectives:

The objective of the current research is to determine the needs and level of interest among potential community partners for CVTC's simulation training city project. It is the hope of CVTC to build a simulation training city that provides training facilities to meet the needs of the surrounding community. The project is in the preliminary stages, and it is critial to determine possible partners and specific identifed needs in order to collaborate with througout the development of the site. Therefore, the core objective of this project is to determine potential partners and their needs through a mail survey.

Significance:

The needs assessment will help to initiate the simulation training project, by determining interested parties and their training needs. This project hopes to eventually provide a large part of the surrounding area with safety training facilities that meet the needs of a wide variety of organizations.

Detailed Methodology:

A mailing list will be obtained through collaboration by faculty and staff at CVTC. This list will contain contacts made through other projects or avenues, and therefore the contacts will already be partners with CVTC in some way; be it formal or informal. The sample will receive a short survey containing questions regarding their interest in CVTC's simulation city project, as well as what training facilities needs they may have. The information will then be sent back to the researcher via her UW-Stout campus address. The results will then be analyzed for themes, and a report will be prepared for CVTC with suggestions for future steps. The project will also be written up in UW-Stout's thesis format, to meet the requirements of the researcher's Plan B thesis requirements.

2. **Is this research?**

(a) Is your activity intended for public dissemination? Yes ☒ No ☐
(b) Can it reasonably be generalized beyond the research sample? Yes ☐ No ☒

If you answered no to these two questions, do not continue with this form. Stop here and submit form.

3. Does your research involve human subjects or official records about human subjects? Yes ☒ No ☐

If yes, continue with this form. If no, stop here and submit form.

4. Are you requesting exemption from IRB review in one of the federally approved categories? If yes, please reference OHRP website http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.101 and select category that applies and continue with form. **If no, continue with Question #6 regarding Human Subjects Training.**

   ☐ (1) Is your research conducted in established or commonly accepted educational settings, involving normal education practices?
   ☐ (2/3) Is your research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior, AND identifying information will not be collected?
   ☐ (4) Is your research involving the collection or study of existing data, documents, records, or pathological or diagnostic specimens?
   ☐ (5) Is your research involving studying, evaluating, or examining public benefit or service programs AND conducted through a federal agency?
   ☐ (6) Is your research involving taste and food quality evaluation or consumer acceptance studies?

5. Human subjects training must be completed prior to filing this form. Have you completed UW-Stout's Human Subjects Training (http://www.uwstout.edu/rs/hstraining/index.htm)? Yes ☒ No ☐

6. Please note that research cannot begin until this project has been approved by the IRB. When is the data collection for the research *intended* to begin and end? **4/2007** to **6/2007** (enter month/year)

7. Can the subjects be identified directly or through any type of identifiers? Yes ☒ No ☐ If yes, please explain.
   The subjects names, organizations and contact information will all be connected, but will only be retained if the subject returns the survey voluntarily. This act signifies their voluntary participation in the research and the future of the project. Therefore, they form a contact list of interested partners for future reference.

8. Special precautions must be included in your research procedures if any of these special populations or research areas are included.

   Are any of the subjects:
   (a) minors (under 18 years of age)? Yes

   Does the research deal with questions concerning:

☐ No ☒
(consent from parent & subject required)

(b) legally incompetent? Yes ☐ No ☒

(c) prisoners? Yes ☐ No ☒

(d) pregnant women, if affected by the research? Yes ☐ No ☒

(e) institutionalized? Yes ☐ No ☒

(f) mentally incapacitated? Yes ☐ No ☒

(a) sexual behaviors? Yes ☐ No ☒

(b) drug use? Yes ☐ No ☒

(c) illegal conduct? Yes ☐ No ☒

(d) use of alcohol? Yes ☐ No ☒

9. Voluntary participation/consent form:
Expected Number of Participants **50**

Describe the method:
(a) for selecting subjects.
The sample will be obtained through faculty and staff at CVTC. They will provide a list of potential partners, in which they have had prior contact with, through other CVTC or community activities.

(b) for assuring that their participation is voluntary. If subjects are children and they are capable of assent, they must give their permission, along with that of their parent, guardian, or authorized representative. NOTE: A school district cannot give permission or consent on behalf of minor children.

The survey will include a cover letter which will assure the subjects that participation is voluntary, and by sending the survey back, they are giving their consent to participate in the research project.

10. Procedures: Describe how subjects will be involved in detail.
The subjects will be mailed a survey, and asked to return completed if interested in the project. If they are not interested, they may dismiss the survey, and they will not be contacted again.

If the study:
(a) involves false or misleading information to subjects, or
(b) withholds information such that their informed consent might be questioned, or

(c) uses procedures designed to modify the thinking, attitudes, feelings, or other aspects of the behavior of the subjects,

describe the rationale for that, how the human subjects will be protected and what debriefing procedures you will use.

n/a

11. Special precautions must be included in your research procedures if you are doing an online survey.

Are you doing an online survey? Yes ☐ No ☒

If yes, please answer the following questions. If no, please skip to the next question.

(a) Will your survey results be posted on a website that could be accessed by individuals other than the investigators?
Yes ☐ No ☐

(b) Does the URL for the survey include information that could identify individuals, such as a student ID?
Yes ☐ No ☐

(c) When you send out an email inviting subjects to complete the survey:
Will you place all of the email addresses in the "bcc" line? Yes ☐ No ☐

Will you have the "read receipt" function turned off? Yes ☐ No ☐

(d) If your survey contains questions where the subjects choose from a drop-down menu, do they have the option to choose "no response" or to leave the question blank?
Yes ☐ No ☐ No drop-down questions ☐

If in question #11, you answered "yes" to question (a) or (b), or if you answered "no" to question (c) or (d), please address your reason(s) when completing question #12.

12. Confidentiality: Describe the methods to be used to ensure the confidentiality of data obtained.

13. Risks: Describe the risks to the subjects and the precautions that will be taken to minimize them. (Risk includes any potential or actual physical risk of discomfort, harassment, invasion of privacy, risk of physical activity, risk to dignity and self-respect, and psychological, emotional, or behavioral risk.) Also, address any procedures that might be different from what is commonly established practice for research of this type.

The risks of this research are minimal, but a subject may feel violated by being contacted by a third party they do not know. This risk will hopefully be eliminated by informing the subjects as to the source from which their information was obtained (i.e. a CVTC faculty or staff member).

14. Benefits: Describe the benefits to subjects and/or society. (These will be balanced against risk.)

The major benefit of this project will be in determining the needs of the community regarding simulation safety training. It will help to improve the safety of our community as a whole, through providing training in "real world" situations.

Appendix E: Institutional Review Board Approval

STOUT
UNIVERSITY OF WISCONSIN

Research Services
152 Voc Rehab Building

University of Wisconsin-Stout
P.O. Box 790
Menomonie, WI 54751-0790

715/232-1126
715/232-1749 (fax)
http://www.uwstout.edu/rs/

Date: April 10, 2007

To: EmmaLee Ericksen

Cc: Renee Surdick

From: Sue Foxwell, Research Administrator and Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research (IRB)

Subject: **Protection of Human Subjects**

After review of your project, "*Needs Assessment of Chippewa Valley Technical College (CVTC) Simulation Training City,*" I concur that your protocol is **not defined as research** as defined by Federal regulations. Therefore, your project does not need further review and approval of the Institutional Review Board (IRB) for the Protection of Human Subjects.

This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

Thank you for your cooperation with the IRB and best wishes with your project.

***NOTE: This is the only notice you will receive – no paper copy will be sent.**