CHAPTER 2: LITERATURE REVIEW

Culture

This section includes a definition of culture, components of subjective culture, and rationale for and history of intercultural training.

Definition of Culture

Culture is not something that occurs in nature; rather it is a human characteristic resulting from shared experience, geographic location, and period of time (Cushner & Brislin, 1996). At the national, regional, local, family, or even individual level, culture is shared and, therefore, not often discussed. As a result, most people do not know how to talk about culture. When cultures come into contact, conflict can arise because of miscommunication and misunderstandings.

To begin to better understand the phenomenon, researchers have divided culture into objective and subjective culture. Objective culture can be defined as those visible, or tangible, aspects of a group of people such as food, dress, buildings, and tools (Cushner & Brislin, 1992; Triandis, 2002). Subjective culture refers to "invisible, less tangible aspects of a group of people, such as their values, norms of behavior, attitudes, and worldview – the things people generally carry around in their mind" (Cushner & Brislin, 1992, p. 43). In addition, subjective culture may include skills, roles, formal and non-formal communication, symbols, and ethics (Triandis, 2002).

Components of Subjective Culture

For the purposes of this paper, the components of subject culture can be defined as:

- Attitudes. Positive or negative views towards a given subject that express fundamental values and can affect a person's behavior. Attitudes can be changed with experience (Triandis, 1971).
- Ethics. "Principles of conduct that help govern the behavior of individuals and groups" (Paige & Martin, 1996, p. 36).
- Formal Communication. Includes spoken, written, and signed communication (Bailenson, Bell, Loomis, Blascovich, & Turk, 2004).
- Non-formal Communication. Ways of communicating with other people including gestures, touch, expression, gaze, and posture (Bailenson et al., 2004).
- Norms of Behavior. "Ideas about behaviors expected of members of a group" (Triandis, 2002). This includes how people should act or how things are done.
- Roles. "Ideas about the correct behavior of people who hold a position in a social group" (Triandis, 2002).
- Scaffolding. A three stage process by which an instructor gradually releases more responsibility onto the student. First, the instructor assumes great responsibility for modeling and explaining concepts and actions. Second, the instructor and student share responsibility while the student practices and the instructor provides constructive feedback. Finally, the student takes nearly all the responsibility for their actions and learning (Vygotsky, 1978).
- Skills. "An ability, usually learned, to perform actions" (Wikipedia, 2006).
- Symbols. A word, action, or object that represents a meaning. Symbols are culturally defined and shared (Lustig & Koester, 1996).

- Values. "Conceptions of the desirable state of affairs." Values guide a person in action and behaviors regardless of the situation at hand (Triandis, 2002).
- Worldview. "General knowledge about the objects, actions, distinctions, and relationships that matter in a particular domain." Worldview helps assign meaning and is acquired through experiences (Henton, 2004, p. 37).

Rationale for Intercultural Training

Intercultural training incorporates many strategies to help participants not only learn objective culture, but also begin to understand subjective culture. The potential groups of participants in need of intercultural training have increased in recent decades and includes more than just diplomats or governmental employees (Inman, 1987, p. 3). Potential trainees now include business representatives, students and academics, those interested in building skill and worldview, those working within diverse local communities, and refugees and asylees (Baker, 1988; Fowler, 1994; Leeds-Hurwitz, 1990; Mestenhauser, 1988; Paige & Martin, 1996; Yook & Albert, 1999).

As the number of potential participants has increased, the rationales for undertaking intercultural training have multiplied as well. The first rationale is the desire to change attitudes and behaviors of people. People learn behaviors very early on that apply to their own culture but do not apply to other cultures (Bhawuk, 2001). These constructs must be broken to allow formation of a new picture of reality (Grove & Torbiorn, 1986). Nevertheless, the goal is not to eliminate the original attitude or behavior altogether, but to make the person aware of these attitudes and behaviors, so

they can adjust them appropriately when interacting with other cultures (Grove & Torbiorn, 1986).

Second, intercultural training reduces the severity and duration of a person's adjustment time in another culture (Grove & Torbiorn, 1986). One must keep in mind that intercultural training is not meant to reconstruct reality for people, but to provide them with tools so that they can reconstruct a reality for themselves once inside the new culture (Grove & Torbiorn, 1986).

A third rationale is the moral and ethical imperative (Ferdman & Brody, 1996). According to Bennett (1986), in the past, intercultural contact had been characterized by "bloodshed, oppression, and genocide" (p. 27). However, "a diversity effort can be seen to reduce oppression and thereby help people work together more effectively" (Ferdman & Brody, 1996, p. 290). Based on this, the rationale states that by gaining an understanding of another culture and having positive interactions is not only necessary but also the right thing to do.

History of Intercultural Training

While intercultural contact has occurred for centuries, intercultural training is a relatively new concept. In past centuries, humans traveled internationally, but often lacked adequate information or skills to effectively participate in another culture (LaBrack, 1986; Paige & Martin, 1996). During World War Two (WWII), the United States army began an intensive language program so that soldiers could accomplish basics tasks in a host culture, such as getting directions and shopping (Leeds-Hurwitz, 1990). Since the end of WWII, massive efforts were undertaken to spread intercultural training outside of the military (LaBrack, 1986).

Just after WWII, the United States government passed the Foreign Services Act, which created the Foreign Service Institute (FSI) (Leeds-Hurwitz, 1990). The FSI borrowed concepts from the army's language program and focused on providing basic country information before departure (Leeds-Hurwitz, 1990; Paige & Martin, 1996). Prior to 1960, intercultural training consisted of lectures and slides that provided objective cultural information, but did not help travelers deal with everyday life in the host culture (Fowler, 1994; Paige & Martin, 1996; Pusch, 2004).

In the 1960s, sensitivity training became popular (Fowler, 1994). Sensitivity training focused on participation and experiential learning and was designed to focus on individual growth (Paige & Martin, 1996). However, because it was too experiential and confrontational, this effort failed (Fowler, 1994; Paige & Martin, 1996). Although some confrontation is healthy, most learners resisted sensitivity training because of its heavy focus on confrontation.

Intercultural training at this time, lacked the opportunity to reflect on experiences and assist trainees in applying gained skills to new situations (Pusch, 2004). In fact, for a number of years after the Peace Corps began in 1961, training focused on objective culture training. It was not until 1970 when experiential learning was utilized in the host countries that Peace Corp training began to see real improvement (Pusch, 2004).

In 1974, the Society for Intercultural Education, Training, and Research (SIETAR) was formed as a professional organization for intercultural trainers (Paige & Martin, 1996). According to Pusch (2004), SIETAR gave "interculturalists a forum for exchanging ideas about training, theory, and research and for engaging in social interaction that strengthens their bonds with each other" (p. 19).

In the 1980s, globalization expanded as businesses expanded internationally, and more people traveled internationally (Paige & Martin, 1996). In turn, intercultural training integrated Kolb's four learning styles and experiential learning theories into the training programs. Kolb's theories led to the advent of customized intercultural training. Many intercultural trainers customized their training and activities to include multiple individual and cultural perspectives (Pusch, 2004). The result was an integrated learning model, which captured the benefits of presenting basic information with experiences (Leeds-Hurwitz, 1990; Fowler, 1994; Paige & Martin, 1996).

The 1980s saw an increased use of instruments and media. In 1983, one of the first intercultural film series, *Going International,* was developed for corporate audiences. This series introduced people to perception, communication styles, and differing cultural ways of interacting (Pusch, 2004). In 1986, Milton Bennett's developmental model of intercultural sensitivity (DMIS) was constructed. The DMIS led to the development of the Intercultural Development Inventory (IDI)-an instrument now used by many intercultural trainers prior to and after intercultural training (Pusch, 2004).

In the 1990s and 2000s, games and technology found a place in intercultural training. Games and simulations such as *Diversophy*, *Barnga,* and *Ecotonos* test trainees and allow them to experience simulated cultural environments. Some intercultural training now utilizes CD-ROMs and online technologies to help trainees learn material and build skill (Pusch, 2004). A successful intercultural training program may now include a variety to approaches designed to meet the specific needs of the training participants.

Experiential Learning

This section discusses the uses of experiential learning, as well as how experiential learning relates to culture and the learning of cultures.

Use of Experiential Learning

Kolb (1984) defined experiential learning as "the process whereby knowledge is created through the transformation of experience" (p. 38). Essentially, learners have a concrete experience, reflect, draw hypotheses, and by testing those hypotheses, have more concrete experiences (Kolb, 1984).

These experiences can occur in a classroom setting when an instructor allows the students to "apply and acquire knowledge" in a relevant setting (Infed.org, 2005). However, experiential learning can also occur outside of the classroom through informal interactions, practice, and experiences (Infed.org, 2005). Jarvis (2001) wrote, "Practice is now central to learning, especially with the development of experiential learning" (p. 35). He continued to say that rote learning is less important because learners need to reflect on their own experiences in order to create their own "truths" or knowledge (p. 33).

Creating one's own knowledge is a fundamental principle of experiential learning as well as constructivism. The learner, through a process called scaffolding, constructs his or her own knowledge. Vygotsky's (1978) scaffolding occurs when a more knowledgeable entity (a guide, tutor, avatar, peer, etc) creates conditions that allow a novice to practice and build skill and knowledge in order to further develop (Riddle, 1999; Sidman-Taveau & Milner-Bolotin, 2001). As the novice improves in skill and becomes more self-sufficient, the more knowledgeable entity provides less guidance. Constructivism and the scaffolding (help) can be removed as the novice becomes self-

sufficient. Experiential learning and constructivism are important tools in education, but are especially used in training, apprenticeships, service learning, and internships.

Experiential Learning and Culture

There are two types of experiential training used in intercultural training: culture-general and culture-specific (Gudykunst, Guzley, & Hammer, 1996). Culture-general training includes intercultural communication workshops where trainees interact with people from other cultures. It includes simulations designed to mimic real interactions (Gudykunst et al., 1996). Culture-general training comprises self-assessments that ask trainees to discuss how their attitudes and behaviors affect their interaction and communication with people from another culture (Gudykunst et al., 1996).

One example of culture-specific activities is bi-cultural communication workshops used to facilitate interactions between two cultures (Gudykunst et al., 1996). Another culture-specific activity is a simulation where trainees participate as members of another cultural group to internalize differences. Finally, culture-specific role-plays allow participants to act as members of another culture and then to interact with participants of a different culture (Gudykunst et al., 1996).

Communities of Practice

This segment comprises the uses of communities of practice, how communities of practice relate to culture, and a description of a virtual community of practice.

Use of Communities of Practice

Wenger (2002) defined communities of practice as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). Communities of

practice are very informal and pervasive and can include engineers, mothers, or gang members. The simple requirement is that they are bound together because they interact and learn together, as well as survive and move forward (Wenger, 1998).

Within the community of practice, members must participate. Wenger (1998) defines participation as a "social experience living in the world in terms of membership in social communities and active involvement in social enterprises...participation combines doing, talking, feeling, and belonging" (p. 55). Once a person participates, they can expand their skills, knowledge, and identity.

The key focus of communities of practice is managing knowledge. Communities of practice make knowledge an "integral part of their activities and interactions" (Wenger, 2002, p. 9). Since knowledge is dynamic and resides in the minds of people, there must be mutual respect and trust in order for interactions to occur and knowledge to be shared. Trust and mutual respect are the "social fabric for learning" in the community (p. 28).

Furthermore, the purpose of a community of practice is to "create, expand, and exchange knowledge, and to develop individual capabilities" (Wenger, 2002, p. 42). Communities of practice help construct a common language and purpose, as well as individual skills and competencies (Allee, 2003). Communities of practice are held together by passion, commitment, and group identification, but will stay together only as long as the community remains relevant for its members (Wenger, 1998; Wenger, 2002).

Communities of practice build on the theory of experiential learning discussed earlier in this chapter. People within a community learn through interactions with other members, experimentation, observation, and critical thinking (Leemkuil et al., 2003;

Lunenburg, 1998). Communities of practice are also based on constructivist theories, specifically Vygotsky's scaffolding and social interaction theories. New members to the community often learn through interactions with experts within the community. These experts guide the new members as they slowly adapt to the new community culture (Kimble, et al., 2001).

Eventually the new members become comfortable with the new community culture and are able to actively contribute to the community's knowledge base. In addition, communities of practice promote environments conducive for efficient problem solving, more informed decisions, contributions to a team, fun, an increased sense of belonging, network building, rules and guidelines, and communal learning (Wenger, 1998, p. 46; Wenger, 2002, p. 16)

Communities of Practice and Culture

When newcomers join the community of practice, they are untrained and confront the new environment from a different perspective. This is very similar to when a person enters a new culture. As a person spends more time within a culture and has the opportunity to practice being a member of that culture, they become more adept and more able to interact (Grove & Torbiorn, 1986).

Work and learning are social activities and therefore, as people work together, they learn from each other and develop a shared purpose. Eventually members of the group begin to talk the same, develop a mutual identity, and think along the same lines. As a result, the group forms a new cultural identity (Stamps, 1997). New members of the group must learn the cultural identity and adapt their behavior to fit within that identity.

Virtual Communities of Practice

Virtual community of practice members are distributed throughout the world, have an expanded network of friends and colleagues, and are connected to each other via the Internet (Rheingold, 2000). Wenger (2002) warns that virtual communities of practice can be difficult to foster because of distance, group size, organizational affiliation, and cultural differences. However, if a lot of time is spent in advance to address distance, size, affiliation, and cultural differences, the virtual community of practice can succeed. In fact, if successful, virtual communities of practice can be more successful than face-to-face communities because they can attract a more diverse group of individuals while overcoming time and space (Jones, 1997; Wenger, 2002).

There is a debate about whether virtual communities are in fact communities. Some scholars believe communities can only exist in a shared physical space. Others define communities as a product of shared relationships rather than shared space (Watson, 1997). If the definition of a community includes the continuous presence of others, a collectivity of information, and active interaction, a virtual space fits that definition (Watson, 1997). Space virtually is no different than space physically; rather it is defined by user perception. If the virtual space is perceived as real, it is real to the user. Likewise, if the virtual community is perceived as real, the virtual community is real as well. The remainder of this chapter assumes that virtual communities exist and are thriving.

Video Gaming

This section contains a discussion of video game definitions, types of video games, aspects of massively multiplayer online games (MMOGs), theoretical and

empirical research on video games, cultures in virtual environments, experiential learning in virtual environments, and communities of practice in virtual environments.

Definitions

There is a growing list of acronyms and definitions being used in video gaming research. For the purposes of this paper, the following are defined:

- Avatar. A virtual representation of the player made visible to other players. Avatars are required for interaction and can show emotion and facial expressions (Dede, 2005a; Jensen, 1999; Rheingold, 2000).
- Entities. "Objects within the game that the player manages, modifies or interacts with at some level" (Zugal, Mateas, Fernandez-Vara, Hochhalter, & Lichti, 2005).
- Flow. "The state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikzentmihalyi, 1990, p. 4).
- Games. Confined areas that require users to optimize rules, tactics, time and space (Walther, 2003; Zugal, Nussbaum, and Rosas, 2000). Players "immerse themselves within games, and their more immediate participation expands the opportunities to master the content" (Games-to-Teach, 2003, p. 19).
- Goals. "Objectives or conditions that define success in the game." There are two types of goals: game-defined and player-imposed (Zugal, et al., 2005).

- Interface. "Where the player and the game meet; the mapping between the embodied reactions of the player and the manipulation of the game entities (Zugal, et al., 2005).
- Microworld. "A small, but complete, version of some domain of interest." People don't study microworlds, they live in them (Reiber, 1996, p. 46).
- MMOG. Massively Multiplayer Online Game that allows thousands of players to connect to the Internet and interact in a virtual world.
- MMORPG. Massively Multiplayer Online Role Playing Game is a sub-genre of an MMOG. "An online computer role-playing game in which a large number of players interact with one another in a virtual world" (Wikipedia, 2005a).
- MUD. Multi-User Dungeons are "imaginary worlds in computer databases where people use words and programming language to improvise melodramas, build worlds and all the objects in them, solve puzzles, invent amusement and tools, compete for prestige and power, gain wisdom, seek revenge, indulge greed and lust and violent impulses" (Rheingold, 2000, p. 149).
- MUVE. Multi-User Virtual Environment that allows multiple avatars to enter the environment simultaneously (Dede, 2005a).
- Networked Virtual Environment. Includes a shared sense of space, presence, and time as well as a means to communicate and share (Manninen, 2001).
- Play. "An open-ended territory in which make-believe and world-building are crucial factors" (Walther, 2003, p. 1).

- Rules. Rules "define and constrain what can or can't be done in a game; they lay down the framework, or model, within which the game shall take place (Zugal, et al., 2005).
- Simulation. An imitation of a real process where a player observes from the outside (Games-to-Teach, 2003; Sisk, 1995).
- Video Game. Games that "situate meaning in a multimodal space through embodied experiences to solve problems and reflect on the intricacies of the design of imagined worlds and the designs of both real and imaging social relationships and identities in the modern world" (Gee, 2003).
- Virtual World. "A computer-simulated environment intended for its users to inhabit and interact via avatars" (Wikipedia, 2005c).

Types of Video Games

Since the first widely available video game was introduced in 1971, video game genres increased rapidly. There are a number of video game genres now available, the first of which is the first person shooter (FPS). An FPS is a shooting game viewed from the perspective of the shooter. This genre began with games such as *Doom* and *Wolfenstein 3D* and have since grown into popular games such as *Half-Life 2* and *Halo 2*.

The second type of video game is the simulation or "god-game." A simulation allows a player to manage or control an aspect of real life such as city management or flying an airplane. Simulation games include *Flight Simulator*, *Sim City*, *Railroad Tycoon*, and *Civilization*. Each of these games was so popular that it not only produced sequels but also spawned offshoots.

Another genre of video games is the fighting game of which there are two types: scrolling fighting and versus fighting. Scrolling fighting was much more popular in the 1980s and 1990s with games such as *Double Dragon*, *Ninja Gaiden*, and *River City Ransom*. Scrolling fighting games have since merged with third person shooters to create a new approach. Versus fighting games gained popularity with games such as *Mortal Kombat* and *Street Fighter*. Versus fighting games continue to be very popular with new releases of *Soul Caliber III* and *Dead or Alive IV*.

The fourth genre of video games is sports and racing. While many consider sports and racing to be two separate genres, for the purposes of this paper, they will be combined. Games in this genre have been continually popular because sports and racing are competitive by nature. This genre includes, but is not limited to, baseball (*RBI Baseball*), football (*NCAA Football*), soccer (*FIFA World Cup*), hockey (*Blades of Steel*), hunting (*Big Buck Hunter*), auto-racing (*Gran-Turismo*), motor-cross (*Excitebike*), and snowboarding (*SSX 3*).

Fifth, action games are very popular and have spawned many subgenres such as scrolling fighting games and first person shooters. Violence, rapid button pushing, and a need for a rapid reaction time characterize this genre. Moreover, games in this genre usually including advancing through levels and defeating bosses. Popular games in this genre include *Doom*, *Goldeneye*, *Half-Life*, *Halo,* and *Halo 2*.

A sixth video game genre is the role-playing game (RPG). RPGs evolved out of paper and pencil games like *Dungeons and Dragons*. These games focus on strategy, combat, and character development. Early popular RPGs include *Ultima, Dragon Warrior*, and *Final Fantasy*. Since then, RPGs have split into single player RPGs like

Diablo and *The Elder Scrolls* and multiplayer online RPGs like *EverQuest*, *World of Warcraft*, and *Lineage*. The remainder of this paper will largely focus on massively multiplayer online games.

History of MMOGs

Massively multiplayer online games have their roots in text-based games called multi-user dungeons (MUDs). Richard Bartle created the first MUD in 1978 and is now considered a massively multiplayer online game pioneer (Castronova, 2003; Gee, 2003; Jakobsson, 2003; Rheingold, 2000). Between 1980 and 1992, approximately 100,000 users participated in multiplayer online games, but since then that number has exploded (Rheingold, 2000).

The first graphical MMOG *Neverwinter Nights* was released in 1991 for AOL users and *Ultima Online* was released in 1997. *Ultima Online* is widely credited with making the MMOG popular (Wikipedia, 2005a). 1999 saw the release of *EverQuest*, which is still considered one of the more popular MMOGs. *EverQuest* has over 500,000 subscribers worldwide with up to 118,000 logged in at any given time (Gamespy, 2003; Jakobsson, 2003; Wikipedia, 2005a). One of the most popular MMOGs now is *World of Warcraft*, which has approximately eight million subscribers worldwide (Wikipedia, 2005a).

While *EverQuest* and *World of Warcraft* are considered fantasy role-playing games, MMOGs such as *The Sims Online* aimed to simulate real life situations in an attempt to capture the interest of its players (Gamespy, 2003). These real-life simulations have attracted not only players but also academics. In recent years, all genres of

MMOGs have caught the attention of academia in fields such as economics, sociology, and psychology.

Aspects of an MMOG

There are a number of aspects of MMOGs including its virtual world. The virtual world represents three-dimensional data in two dimensions and supports artificial life and systems (Jensen, 1999). These worlds are persistent, geometrically finite, continuously navigable, and "only limited by the current technology and imagination" (Jensen, 1999, p. 4). The virtual world is largely rule-based, including physical, social, biological, and cultural rules. These rules help define human social communities that form within the virtual world and are populated with players represented virtually through avatars (Jensen, 1999).

The second aspect of an MMOG is the player of the game. In *EverQuest,* women comprise 20-30% of the players and the average age of all players is the mid to upper twenties (Jakobsson, 2003). Players choose avatars to represent them from a set of races and the avatar is built around a set of skills and abilities (Gee, 2003). Players can choose an avatar that represents their true self or they can choose some variation of themselves. One of the most common variations is gender swapping, which usually occurs when a male represents himself through a female avatar (Ahuna, 2000).

The third aspect of an MMOG is interaction using the avatars. Avatars can interact with one another by joining guilds or clans to compete, communicate, or accomplish tasks. One's ability to stay in the guild or clan depends on the ability to contribute to the group (Gamespy, 2003). Because face-to-face communication does not

exist, avatars interface with other avatars synchronously, while physically existing in a different space (Jensen, 1999).

Avatars also interact with artificially intelligent units called bots. These bots can either provide the avatar with help and guidance or they can physically challenge the avatar to a fight or competition (Jensen, 1999). Finally, the avatar can interact with the virtual environment and the objects within the virtual environment. This might include trees, animals, weapons, buildings, or clothing (Jensen, 1999; Zugal, Nussbaum, & Rosas, 2000).

The fourth aspect of an MMOG is the economic component of the game, both inside and outside the games. According to Castronova (2003), "there is something very normal and mundane about cyberspace: people live there, work there, consume there and accumulate wealth there, just as they do on Earth" (p. 1). The life that occurs within the virtual world also bleeds into life outside of the game. One-third of adult *EverQuest* players spend more time playing *EverQuest* than in paid employment (Castronova, 2003).

Some MMOGs are now grappling with the issue of virtual intellectual property. Players are becoming so innovative within the virtual world that they sell their creations or virtual money for real money on online auctions sites like Ebay. These sales have led *EverQuest's* virtual world (Norath) to become the 77th richest country in the world. The average hourly wage is $3.42 and the gross domestic product (GDP) is $135 million, equal to that of Bulgaria (Castronova, 2003).

While selling virtual money or items is not allowed for some games, others, such as *Second Life*; embrace such creativity and imagination. The makers of *Second Life* have decreed that any ideas developed within the confines of the virtual game are the

property of the creator (Gamespy, 2003). One player created a type of athletic wear and was able to sell the rights for the attire to a real-world corporation.

Theoretical Observations Regarding Video Gaming

There are a number of theoretical observations extolling the benefits of video gaming. At the same time, there are many people, including some academics who grew up playing video games, who believe that video games have no educational value and are purely entertainment (Schrader, Zheng, & Young, 2006). Consequently, the perception is that video game players gain little from playing video games and that they could be doing something more beneficial for themselves, their families, or society. This section will include both perspectives.

The first perspective is that video games are conduits for education and learning. Those individuals who are under forty years old and grew up playing video games do not find traditional lectures engaging. They believe that, trying to educate our children using old methods of teaching does not result in successful learning. In fact, according to this theory, linear thinking and education may actually retard learning for people who grew up playing games (Prensky, 2001). Digital game-based learning is designed to combat this because it is "precisely about fun and engagement and the coming together of serious learning and interactive entertainment into a newly emerging and highly exciting medium—digital learning game" (Prensky, 2001, p. 16). Academia is warming to video games because many professors now are or were video game players. Therefore, they are able to recognize the learning that can occur within a game.

Sports games, war games, and even games like *Grand Theft Auto* simulate real-world experiences and ask players to think critically and solve problems without knowing

they are doing so (Foreman, 2004). Even more potentially powerful is the emerging MMOG genre because they would allow students to do more than sit and listen. "These virtual settings anticipate advanced online learning worlds that can be dedicated to distinct subjects, populated by single users and teams, and pedagogically structured for deep and rapid experience-based learning" (Foreman, 2004, p. 4).

Second, the theory of flow is an interesting and relevant theory in video gaming. According to Csikzentmihalyi (1990), flow will happen when the following occurs:

- Rules and goals are clearly defined
- Activity becomes spontaneous and the person no longer reflects on the task at hand
- Feedback is clear and consistent
- Unnecessary information is blocked out
- There is a sense of control
- Self-conscious feelings fade away
- The challenge is optimized, meaning it is neither too hard nor too easy
- Time is transformed, meaning it is either slowed down or sped up (pp. 51-66)

Achieving flow occurs often when playing video games, which can result in being more fully engaged and receptive to learning. As a result of achieving flow, the person discovers him or herself, builds a new reality, performs higher, and achieves a higher consciousness (Csikzentmihalyi, 1990; McKenna and Lee, 1995). One drawback to achieving flow while playing video games is when individuals become so engaged in a game, they lose track of time and their real life (Csikzentmihalyi, 1990; Reiber, 1996). Flow can result in addiction which has consequences, including loss of job, family, and health (Castronova, 2003). *EverQuest* and other MMOGs are so addictive that there is an organization similar to Alcoholics Anonymous for players of *EverQuest*.

The third theoretical observation relates to the benefits of interactivity in virtual environments. Environments that use advanced three-dimensional graphics create an engaging, immersive experience (Manninen, 2000). Moreover, role-playing games utilizing these graphics could provide exciting opportunities for "immersing players in engaging educational game environments, primarily through the shift from reading about educational content to thinking with that content to achieve compelling goals" (Games-to-Teach, 2003, p. 21). Early tests of interactive games show that they promote collaboration, communication, and reflection (Games-to-Teach, 2003).

A fourth perspective pertains to identity in video gaming. Because interactions are virtual, players choose how they will represent themselves to other players. It is not uncommon for players to misrepresent their age, gender, ethnicity, or profession to other players (Jones, 1997). According to Watson (1997), "all individuals present themselves strategically, sometimes truthfully and sometimes not, to others in everyday life regardless of the medium of communication in order to accomplish their short- and long-range goals" (p. 107).

How a player presents themselves can be deceptive and confusing, but it can also be challenging and motivating (Gee, 2005a). By claiming a new identity, players utilize a number of learning principles including interaction, risk-taking, customization, challenging problems, situated meaning, and complex systems and relationships (Gee, 2005a).

The fifth theoretical observation is that video games only provide opportunities to solve simple problems (Squire, 2002). Furthermore, there are concerns about transferability of skills and information learned in a video game. Many researchers feel

that these skills only benefit the player while they play that particular game. While others may claim skills learned in games can transfer to the real world, the research does not support this claim. Players may develop skills in one game that are similar to those needed in another game, but that does not translate to critical thinking or planning skills (Squire, 2002).

Some scholars believe video games are conducive to complex problem solving in simulated environments. This might include navigating interactive narratives, growing digital life forms, becoming a part of a persistent virtual community, or playing a doctor, scientist, or president. The value of participating in a simulated environment is being able to see problems firsthand and learn from participating. For instance, a student participating in a simulated emergency room environment is able to help the entire family from the moment they enter the emergency room to the time they depart (Games-to-Teach, 2003). Furthermore, good learning video games include successively more difficult problems that build upon knowledge gained from previous experience. Finally, good learning games allow players to create their own identity, think laterally, and perform before demonstrating competence (Gee, 2005a).

Empirical Research Focusing on Video Gaming

While empirical research on video gaming has increased and improved in the past decade, there is still a dearth of research available. The results of available research are mixed, with more research focusing on the positive benefits of video games. Furthermore, recent studies have focused on the benefits of MMOGs, but there are no studies focusing on the potential drawbacks of MMOGs. This study will examine the impacts of video games as shown by a number of empirical studies.

The first impact of gaming is the ability to meet others and form strong bonds. In a study examining 35 MUD environments, the researchers found that "MUDs are places where people meet, form strong friendships, and become completely absorbed in the realm that is like no other" (McKenna & Lee, 1995, p. 10). In educational games such as *Quest Atlantis* and *River City MUVE*, players also had the opportunity to work in teams, interact, and build relationships as they attempted to solve the problems posed (Barab et al., 2005; Dede, 2005a).

Second, studies show that video games allow players the opportunity to solve problems. Research agrees that players learn how to solve problems, but it is unclear whether players learn to either solve simple problems or complex, multi-issue problems. Some researchers claim that players only learn how to solve one problem at a time and move onto the next. However, one study examining students playing *Civilization III* showed that students progressed from simple, one-issue problem solving to complex, multi-issue problem solving (Squire & Barab, 2004b). Additionally, researchers studying *Quest Atlantis* and *River City MUVE* showed that students addressed multi-causal problems in a complex environment, which allowed them to see how issues related to one another at a meta-level (Barab et al., 2005; Dede, 2005a).

The third impact of video games is the effect they have on a person's real life. There are a number of studies focusing on the negative impact games have on people's lives. One article concluded that there was a relationship between the amount of time playing games and aggressive personality (Anderson & Dill, 2000). Furthermore, the study found that violent video games, especially first-person shooters, increased

aggression. Finally the authors established that violent video games reinforce aggressive behavior and allow for the rehearsal of these behaviors (Anderson and Dill, 2000).

Another empirical study looked at violent video games and their effects on aggressive behaviors and attitudes. Participants in this study completed a video game habit survey, a hostile attribution survey, and a hostility survey (Lynch, Gentile, Olson, & von Brederode, 2001). The participants did not play any games for the study. The results showed that exposure to violent video games may lead to hostility and aggressive behaviors. In addition, those participants who were more hostile were more likely to expose themselves to violent video games.

Playing games can also impact one's social and work lives. One research project focused on *Ultima Online* (Kolo & Baur, 2004). The study found that the average playing time was four hours for one sitting and that players averaged 5.7 sittings a week (totaling 23 hours per week) (Kolo & Baur, 2004). Some players were negatively affected as a result of having less time for real life experiences and contact with non-gaming friends and family. On the other hand, some players experienced a positive effect in their real life because they became more comfortable interacting offline, developed leadership skills, and built other skills they learned online (Kolo & Baur, 2004).

The fifth impact of video games is their ability to help players perform better on exams. One study examined the effect a physics computer game had on learning. The researchers wanted to find whether collaborative and competitive games affected learning and social practice. Two eighth grade classes served as the control group and three classes served as the experimental group. The experimental group played the physics

game *Supercharged* (Squire, Barnett, Grant, & Higginbotham, 2004a). The experimental group performed better on exams than the group that did not use the game.

In another research study, researchers examined the effect of collaborative learning systems and their impact on performance. The first group used a language application that did not include an animated co-learner. The second group used a language application with a co-learner, but with no social response to indicate a correct or incorrect response. The third group utilized a language application that had a socially responding co-learner who displayed facial expressions corresponding to student answers to questions (Morishima, Nakajima, Brave, Yamada, Maldonado, & Nass, 2004).

Students who tested in an environment with a co-learner present performed higher on quizzes. When the animated co-learner displayed situation-appropriate emotions and facial expressions, students retained more content material (Morishima et al., 2004). This preliminary study showed the value of using situation-appropriate emotions and facial expressions for learning.

A sixth impact games have on players is confusion, frustration, and boredom when games are used for educational purposes. One study included 18 high school students from an inner city school. These students played *Civilization III* for 45 minutes, three times per week, for six weeks (Squire & Barab, 2004b). The researchers found that the learning curve for the game was high, students were reluctant to play the game at first, and some students could not see how the game connected to the real world. In addition, the study concluded that while games can engage students, they also sometimes frustrate them (Squire & Barab, 2004b).

In the physics game *Supercharged*, many students were confused by the game and did not critically reflect on their play (Squire, et al., 2004a). Furthermore, boys tended to become bored after playing and "beating" the game. In addition, students did not pick up on advanced topics or complex concepts. The study concluded that games can both support and inhibit learning and, that while games can engage students, improperly designed games can turn away students (Squire et al., 2004a).

The last major impact of video game on players is the learning that can occur when the instruction is properly designed and when the students are motivated to play. The researcher of a cognitive ethnography of the MMOG called *Lineage* spent over 19 months directly participating in the game, observing the virtual world, collecting video and text recordings, listening to conversations, viewing community documents, and interviewing players (Steinkuehler, 2004). The preliminary findings showed that constructivist-learning principles occurred in the virtual environment. New players learned through scaffolding by more seasoned players (Steinkuehler, 2004). Furthermore, during collaboration, the focus was continually on the activity, immediate feedback contributed to learning, and accomplishments were rewarded with items and praise. The author did conclude that "from the very outset of game play, the individual engages in the virtual social and material world as a complex, ill-structured, dynamic, and evolving system, not some watered-down version of it" (Steinkuehler, 2004, p. 527). This virtual world is an opportune place to practice, experience, and interact.

Another study showing the learning impact of games examined the *River City* MUVE. This game was designed to study how students learn and to gain knowledge about immersive and participatory environments (Dede, 2005a). Students worked in

teams to investigate illness in River City using historical, social, and geographic contexts designed to provide an experience with multi-causal problems in a complex environment (Dede, Nelson, Ketelhut, Clarke, & Bowman, 2003). Results from the pilot study of the *River City* MUVE showed that students were motivated to play the game and were able to communicate and value using multiple media. The research also demonstrated that even low performing students could master skills and content. Finally, the author concluded that active learning coupled with frequent reflection are powerful tools for learning content and mastering skills (Dede, 2005a).

A third study examining the learning impact of games on players was an empirical study involving the game *Quest Atlantis*. This game exists in a three-dimensional MUVE and includes an immersive narrative, educational quests, comic books, a board game, playing cards, as well as other tools for learning (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005). The game utilizes experiential learning, situated learning, activity theory, inquiry-based learning, and a portfolio assessment. Through the use of avatars, players navigated the virtual world, participated in group activities, and completed tasks (Barab et al., 2005). Results of the study showed that the *Quest Atlantis* environment helped students to develop deeper, more insightful narratives than those developed by students who did not play the game. Furthermore, the game aims to build socially committed students by connecting with both boys and girls while focusing on empowerment and social responsibility. Finally, the study also maintained a connection to academic standards, while promoting a multidisciplinary approach (Barab, et al., 2005).

Culture in Virtual Environments

Limited research has been done on culture or cultural components in MMOGs, but many have commented on cultural components that appear to exist or are absent in virtual environments. First, players are able to meet and socially interact with one another in virtual worlds and "via these simulated interactions, a new type of social practice and virtual social structure or culture is being created" (Jensen, 1999, p. 2).

Many believe that through repeated everyday interactions, virtual communities form a shared repertoire that includes norms of behaviors, values, and language (Byrant, 2005; Gee, 2005a; Riel, 2004; Watson, 1997). This shared repertoire is produced, adopted, and maintained by the community because it has become part of the community's existence. Furthermore, it determines participation standards, acceptable communication standards, and rules for treatment of others (Kling & Courtright, 2004; Steinkuehler, 2004).

The second observed aspect of culture in virtual environments is identity. According to Wenger (1998), identities are formed through lived experiences and are continually changed through interaction and practice. In virtual worlds, users are given the opportunity to play multiple identities and interact with each of those identities. Each interaction and experience determines the revealed identity (Jones, 1997).

Moreover, each identity can be modified in order to become more mobile and socially acceptable. Players can cross gender and ethnic lines relatively easily, so "cultural boundaries, nearly impermeable in traditional discourse, are now at least apparently easy to cross online making them an intriguing new experience, and even gamelike" (Berman & Bruckman, 2001, p. 101).

Another observed aspect of culture in virtual environments is trust and responsibility. Players within a virtual environment must be trusting and trustworthy and have a like reputation. With constant contact and communication come increased trust and, in turn, the ability to share ideas and skills. Within guilds or clans, trust usually builds quickly due to shared experiences and necessity (Kling & Courtright, 2004). As a result, the guild or clan becomes similar to a family, social network, or group of friends (Jakobssen, 2003).

Trust is also important in MMOGs because players must accomplish tasks together. For instance, when an enemy is killed, there are rules players must follow when dividing the reward. Players must trust that rules will be followed by each other or risk breaking the trust of their fellow players (Jakobssen, 2003). Players are also responsible for the success of their guild or clan. When someone in the guild or clan is in danger, the expectation is to immediately help that player. Some guilds or clans may even require participants to play at certain times of the day and for a set number of hours (Jakobssen, 2003).

Finally, there is a recognizable amount of miscommunication due to the dominance of text-based communication and to the noticeable absence of cultural and non-verbal cues (Allbeck & Badler, 2003). In an effort to change this, one study focused on ten qualities that would make animated characters more cross-cultural believable. These qualities include identity, back story, appearance, content of speech, manner of speech, manner of gesturing, emotional dynamics, social interaction patterns, roles, and role dynamics (Maldonado & Hayes-Roth, 2003).

Some games are now being developed to include body language, appearance, facial expressions, and gestures to aid communication and learning (Allbeck & Badler, 2003). The MUVEES Project (2003) has developed avatars that express happiness, sadness, agreement and disagreement through postures and gestures. Another recently released game designed for the military is being delivered to troops in Iraq. The game not only teaches languages to the, it also helps soldiers understand culture by showing cultural cues and gestures (Information Sciences Institute, 2006a). Furthermore, the system incorporates immediate feedback mechanisms, which has been shown to help students understand how their actions affect other entities and the virtual world (Information Sciences Institute, 2006b; Rayburn, 2003).

Learning in Virtual Environments

Various ways of learning have been observed in virtual environments, the most prominent of which is constructivist learning. In a constructivist-learning environment, the focus is not on transmitting knowledge but rather on the player actively constructing knowledge through social interaction (Leemkuil et al., 2003). The social interaction includes not only observing problem solving but also being able to explain how to solve problems (Begg, Dewhurst, & MacLeod, 2005; Morishima et al., 2004).

One researcher found that a constructivist-learning environment exists in the MMOG *Lineage*. In this game, an apprenticeship relationship begins, whereby the more experienced players will help a new player by demonstrating successful performance and pointing out important contextual aspects (Steinhuhler, 2004). The veteran player will also teach the new player how to handle certain situations and model what kind of person

they should become (Steinkuehler, 2004). Once the new player is self-sufficient, the veteran player lets the player play on his or her own.

The second learning method occuring in virtual worlds is critical learning. Critical learning occurs when one experiences a world in new ways, forms new affiliations, prepares for future learning, and thinks at a meta-level in order to see interrelated parts of the world (Dede, 2003). Critical learning allows a player to build the virtual world rather than only playing within a pre-designed world. This gives the player the opportunity to express him or herself and interact meaningfully with other participants in the virtual environment (Bruckman & Resnick, 1995). Furthermore, critical learning theoretically improves transferability of learned skills through innovation and creativity (Dede, 2005a; Gee, 2003).

Experiential learning is a third learning method employed in virtual worlds is experiential learning. Activity and experience allow a world to come to life and enhance learning. According to Dede (2005b), inundating learners with facts and figures will not work because "learners cannot adequately retain or even understand them because they have not yet performed the specific activities or undergone the experiences to which the words refer" (p. 2). Most games employ this principle simply because games would otherwise not sell.

One game that employs experiential learning is *Full Spectrum Warrior,* which is used by the United States military. The game immerses the player in activities and supports the player by providing information built into tools and instructions upon demand. "The learner is not presented with knowledge devoid of context, nor is the learner left to his or her own devices to rediscover the foundations of professional

practice that took hundreds of years to develop" (Dede, 2005b, p. 2). Once players finish *Full Spectrum Warrior*, they have learned requisite military language and information. More importantly, players have necessary skills that can be applied to actual situations (Dede, 2005b).

Communities of Practice in Virtual Environments

There are a number of ways to determine true virtual communities of practice from a simple connection. These include group structure, language and jargon, interaction, social behavior, frequent participation, sustainability, and shared history, culture, values, and norms (Herring, 2004). Furthermore, virtual communities must include members with a wide-range of skills and knowledge that overlap with a clear leader who allocates resources and manages knowledge (Gee, 2003). This is largely because skill in some games is distributed, through multiple players, tools, and technologies (Gee, 2003).

Based on these criteria, there are three examples of virtual communities, the first of which is the Multi-User Virtual Environment (MUVE). The players form learning communities where everyone is involved with learning, understanding, sharing stories and experiences, connecting to learning with doing, and informally and tacitly building and sharing knowledge (Dede, 2005b). By playing in the MUVE, players are motivated through challenges, fun, social recognition, and fantasy. Moreover, players learn how to communicate and express themselves while learning content and higher order skills. Finally, MUVEs are able to connect to learners who perform poorly in the traditional classroom (Dede, 2005b).

The second example of a virtual community of practice is in *EverQuest*. Players can succeed alone in *EverQuest,* but maximum success only occurs when the player joins a group of other players with complimentary skills. Therefore, when joining a group, a player's skill, abilities, connections, and reputation are important factors. When a balanced group or guild is formed, the benefits include success gaining experience, a dedicated chat channel, "group good," and a short-term social network (Jakobssen, 2003).

The last example of a virtual community of practice is of life in MMOGs. Players are motivated to play because of the in-depth, engaging, and fun virtual environment. The longer players play, the more likely they are to form communities. According to Ahuna (2000), "when communities form, a semantic world of sharing knowledge, solving problems, working as a term, playing, building, quarreling, cooperating, planning, and forming relationships develop" (p. 2). These relationships are critical for learning and building experience.

Another added benefit of joining a virtual community in an MMOG is that many times that virtual community will bleed into the real world. According to Steinkuehler (2004), "MMOGaming is participation in discourse space, one with fuzzy boundaries that expand with continued play: What is at first confined to the game alone soon spills over into the virtual world beyond it (e.g. Web sites, chatrooms, email) and even life off-screen (e.g. telephone calls, face-to-face meetings)" (p. 522).