

Process Drama in the Virtual World – A Survey

Magy Seif El-Nasr
Simoln Fraser University
School of Interactive Arts and
Technology
Canada
magy@sfu.ca

Thanos Vasilakos
University of Peloponnese
Department of Theatre Studies
Greece
vasilako@ath.forthnet.gr

Joanna Robinson
Master's of Digital Media
Center of Digital Media
Great Northernway Campus
Canada
joanna@gnwc.ca

Abstract

Process drama is a form of improvisational drama where the focus is on the process rather than the product. This form of improvisational activities has been used extensively in many domains. Role play, for example, has been used in health therapy as well as for training health personnel. Creative drama is a form of process drama that focuses on the use of story dramatization techniques; it has been extensively used to promote language and literature skills as well as creative and critical thinking. In these domains process drama exhibit itself in physical space. Recently, there have been many advances in technology that allows process drama to be exhibited in virtual space. In this article, we look at the form and structure of process drama. We specifically discuss process drama, especially Creative Drama. We outline several key factors of process drama that affect its effectiveness as a learning vehicle, including involvement and reflection. Through this lens, we survey several cases of virtual process drama both as a single person experience as well as a multi-user internet-based virtual experience.

1. Introduction

In the recent years there has been an increase in the number of simulations and game environments exploring the use of narrative and drama to enhance engagement (LeBlanc, 05; Freeman, 03), learning (Mulholland and Collins, 02; Dettori, 06; Bage 99; Nakamura and Mori 99), creativity (Decortis et al., 04), and training (Hill et al., 06; Gordon et al., 04). Narrative and drama refer to a wide variety of techniques and concepts that can be viewed from many angles. In this paper, we particularly focus on the use of process drama in simulations and game environments. Process drama refers to the use of theatre games, role playing activities, and story dramatization activities specifically focusing on the process itself and what participants learn through these activities.

The use of process drama in learning, training, or education is not new. Various forms of role playing activities, for example, have been used for health therapy (Young and Beck, 85; Liberman et al., 85; Roder et al., 06). Roder et al. discuss the effectiveness of the use of ITP therapy for treating Schizophrenia. ITP is an integrated paradigm that includes focusing on neuro-cognitive remediation with training in social cognition, social skills, and problem solving using treatment exercises, role-playing, and group activities.

In addition to the use of role playing activities in health therapy, role playing has also been used for training, e.g. training under stressful situations. An example is simulating the stressful situation of an operating room, where health personnel have to make quick decisions and communicate clearly

and quickly. Awad et al. (05) describe results of a study showing effectiveness of the use of medical team training composed of role playing activities, interactive participation, and training films, particularly he shows results that such techniques can in fact enhance communication within operating room conditions. There are also other examples of training surgery students within surgical operations (e.g., Aggarwal et al., 04), as well as training health care professionals (e.g., Grogan et al., 04) and nurses (e.g., Randhawa, 98).

Process drama has, therefore, been used in many disciplines for many purposes, ranging from training of medical personnel to therapy, and child education, to mention a few applications. Due to the various uses and disciplines where process drama has been applied, there is no widely accepted structure. Most disciplines take the concept and build their own set of activities that fit the pedagogical goals or purpose intended. However, there are several key concepts that seem to resonate as common elements in such experiences; these are: (a) mind-set and play attitude, (b) suspension of disbelief, (c) dramatization, including the use of narrative, story, or drama, (d) element of play, specifically situated learning, and (e) coaching and reflection. Not surprising that all these elements have been discussed by education researchers as important elements of learning. Brown et al. describe that conceptual knowledge is a product of the activity situated in context and culture in which it is developed and used (Brown et al., 89). Shank et al. describe the impact of stories on one's experiences, memory, and social communication (Schank and Abelson, 95; Schank, 80). In addition, dramatization influences emotions, which in turn also impacts memory and performance as discussed in (Ulate, 02). Bloom states that knowledge acquisition is more effective when learners are given one-on-one feedback and coaching by a teacher (Bloom, 84).

The nature of the process drama changes as technology becomes integrated within all aspects of our lives. When process drama is used in the classroom, for example, the way it is currently administered is using simple non-technological means, such as props and students in physical space, relying more on imagination to construct what physically is not available or possible. Nowadays, it is not very difficult to imagine such a process hosted in a virtual world allowing students from around the world to engage in such creative and learning activities. Technological advances in areas of simulation, virtual reality, 3D environments, artificial intelligence, and networked 3D virtual worlds, have their advantages; for example, we can now engage students from all over the world since we are no longer limited by physical space as well as allow students to perform tasks that they couldn't do in real life, which expands the dimensions of creativity and imagination. However, there are also some drawbacks, including interface issues, social communication, cultural issues, as well as technical problems. In addition, once we move to the virtual world there tends to be a push towards less imagination and more realistic simulation and graphics, which is not necessarily a positive direction if the goal is to promote creative thinking, however, such a direction may be important for some training simulations.

In this paper, we will attempt to survey some interesting simulations that exhibit or facilitate process drama. In particular, we will survey examples of process drama in virtual worlds, including Second Life, and stand alone simulations or game-like environments. We are specifically interested in the learning objectives and how they are accomplished through the process of dramatization and play within virtual environments. In this survey, we will discuss these experiences through the lens of process drama and its five key elements, including (a) mind-set and play attitude, (b) suspension of disbelief, (c) dramatization, including the use of narrative, story, or drama, (d) element of play, specifically situated learning, and (e) coaching and reflection.

The paper is divided into several sections. Section 2 discusses Process Drama using creative drama as an example discussing classroom story dramatization techniques. Section 3 discusses some key elements of virtual settings that play an important role in evaluating virtual experiences that exhibit process drama. Section 4 discusses examples of process drama designed as simulations and

interactive narrative virtual experiences. Section 5 discusses example experiences exhibited in virtual worlds, specifically within Second Life. Section 6 concludes the paper by discussing current open problems and future directions.

2. Process Based Drama, Creative Drama as an Example

In order to understand the process of process drama it is imperative to describe it by discussing an example. In this section, we will use creative drama as an example and enumerate several types of activities that can and have been used. However, the discussion here is by no means exhaustive of the various activities or even forms of process drama. This section is meant to give a specific example so that the reader can understand what a process drama may look like.

Creative drama emphasizes story dramatization and creative activities; it has been extensively used in classrooms k3-k12 with the emphasis on learning, social communication, language skills, and creative thinking. In this particular discipline, there have been many books discussing specific activities or strategies to achieve these learning objectives. For example, Kelner (Kelner, 93) describes strategies for teaching grammar and spelling skills through creative drama. Particularly, the book discusses activities for deepening comprehension, promoting writing skills and visualization, and strategies for developing creative thinking.

Some researchers evaluated the use of creative drama in classrooms. For example, DuPont shows enhanced performance of fifth grade students in comprehension skills taught through creative drama; he used standardized and criterion-referenced tests to assess students' comprehension skills (DuPont, 92). De la Cruz et al. (de la Cruz et al., 98) demonstrates quantitatively that children with learning disabilities can improve and maintain social and oral expressive language (speaking) skills through a creative drama program with an emphasis on specific social and oral language usage. In addition, Vitz (Vitz, 84) discuss results that show that creative drama can be effective in stimulating syntactic growth and that interaction and purposeful communication are important in second-language instruction.

2.1 Creative Drama

Like process drama, creative drama is also a term that has been used by many disciplines with many different meanings. Here, we adopt Cooper and Collin's creative drama techniques and definition (Cooper and Collins, 92), where creative drama is defined as a story dramatization technique, guided by a six step process, which they call the Six 'P's of story dramatization:

- (1) Pique, where the teacher arouses the curiosity of the students. They suggest several strategies including song, props, games, rituals, etc.
- (2) Present, where the teacher takes the role of the storyteller and presents the story
- (3) Plan, at this stage the teacher transitions and prepares students to start playing and learn by doing.
- (4) Play, this part is when students play. This takes in various forms from theatre games, to acting out a story, to telling each other stories, with the teacher as a side coach.
- (5) Ponder, after the playing activity comes reflection on the play activity. Reflection is an important aspect of this process as it allows students to share each other's experiences and start reflecting on what they learned through the process. It can also take on a critical form. Cooper and Collins suggest using several structured forms of reflection, such as critique sheets, questions such as 'what worked?', 'what did we learn in this process?', 'how can we make it better?'

- (6) Punctuate, in this step the teacher brings the activity to a closure. Teachers use many strategies to close an activity; these strategies vary from rituals, song, story, or a game.

Creative drama play activities (in step 4, above) borrow from theatre games, role-playing activities, and storytelling activities. In the next few subsections, we will outline some examples of these activities.

2.2. Story Activities

There are many different types of story-based activities that have been used in creative drama. Here we discuss three such examples. The first is typically used in improvisational theatre and the second and third were adopted from Cooper and Collin's text.

2.2.1. *Spontaneous Storytelling*

Students are grouped in partners of two. First student says 10 words, randomly. The second student is tasked with putting together a story beginning with "Once upon a time" interjecting all the 10 words (or as many as he/she can) into the story. The story will have to have a beginning, middle, and end, and should have a climax and a dramatic arc. This exercise is spontaneous. It is designed to help students understand that creative thinking drives from fresh perception and quick reactions and thinking.

2.2.2. *Things aren't always what they seem*

Students in the class are asked to read a fable or a story, for example *Cinderella*. They are then asked to retell the story from another character's point of view. This exercise helps students see the story from different points of view.

2.2.3 *Critiquing storytelling*

In this activity, students are told to play out a story in groups of 4-5, one group at a time. All other students who are not involved in the scene are required to critique the scene. Cooper and Collins suggest a structured process for critique using several forms that students can fill in. They also suggest that teachers discuss the process with students in the beginning of the exercise, emphasizing that students need to discuss the positives as well as the negatives.

2.3. Coaching and Reflection

In creative drama, coaching and reflection are of extreme importance to the learning process as implied in the 6 Ps of story dramatization discussed above. There is no formal structure for how a teacher should coach or initiate and conduct reflection sessions. Teachers and leaders of creative drama typically are trained through workshops by being involved in a set of creative drama activities and experiencing first hand the coaching and reflection. Often times in such workshops, students are asked to coach and lead reflection sessions as well, and thus they learn by doing. While there are no actual strategies for how a teacher can coach or lead/conduct reflection sessions, there are several lessons discussed in various books on creative drama and improvisational training (Cooper and Collins, 92; Saldana, 95).

As discussed above, we enumerated the following as key elements that makes a successful process drama: (a) mind-set and play attitude, (b) suspension of disbelief, (c) dramatization, the use of narrative, story, or drama, (d) element of play, specifically situated learning, and (e) coaching and reflection. While it is clear from the discussion above that creative drama relies on (a) dramatization, the use of narrative, story, or drama, (b) situated learning, and (b) coaching and reflection as discussed in the 6-Ps outlined above. Process drama as an activity is very fragile, what makes it successful is difficult to pin point or

measure. In the next section we augment our discussion here by discussing these key elements in detail.

3. Key Elements of Creative drama and their implications on Virtual Creative Drama

2.3.1 Attitude – a Mind set to play

The attitude of the participants participating in a process drama is of extreme importance to engagement in process drama. Participants need to have the right mind set, suspend their inhibitions, and open their mind to venture into the activity. As Suits (2005) discusses in his attempt to define play “is to attempt to achieve a specific state of affairs (a goal), using only means permitted by rules (lusory means), where the rules prohibit use of more efficient in favor of less efficient means (constitutive rules), where the rules are accepted just because they make possible such activity (lusory attitude)”. Hence, participants need to agree to play. This is important as it is a stumbling block for many activities. It is what makes or breaks the experience for participants.

In the virtual world, this condition is also necessary, but takes on a more complex form than in the physical space. In a virtual world participants need to first accept the particular style of the simulation graphical representation. Malone (Malone 1984) describes experiments where players just refused to accept the aesthetic style of the game, which led to disengagement from the interactive experience. This concept in itself is very complex, acceptance of a particular aesthetic choice can be governed by taste, culture, gender, and experience; for example, previous gaming experience is a big factor in the acceptance or rejection of a specific rendering style of an interactive environment (Tortell and Morie, 06). While many suggested realistic graphics is important for participants to accept the game or interactive experience, Aylett et al. refute such suggestions and show that realism in graphics had no effect on their interactive narrative experience when tested with young children (Aylett et al., 06). Thus, the problem is more complicated than a question of realism or style, and depends on culture or sub-culture, age, and gender.

2.3.2. Suspension of disbelief

The second challenge is to keep the participant’s suspension of disbelief. Suspension of disbelief refers to the mental state in which the participant chooses to believe that the experience is a reality. It is a very fragile state and can be broken in so many ways, including

- Inconsistencies of any kinds, such as the story, simulation, or character behaviours.
- No harmony in the pieces of the environment, e.g. scales of models don’t match, architecture doesn’t match the period or place.
- Controller or interface and feedback doesn’t match participant’s expectation.
- Camera behaves unpredictability.

2.3.3. Structure of drama for capturing and involving participants

The structure itself of process drama involves and captures participants. If we look at the 6 Ps of creative drama as described above, we can see that the structure follows from a motivation point that hooks the participants, to a play exercise that further enriches the experience, and ends with a reflection and resolution phase. The problem is then how can we enforce such a structure or what tricks can the teacher pull from her bag to adapt the experience and keep participants engaged.

This particular problem has been discussed extensively by game designers (LeBlanc, 05; Oxland, 04; Rollings and Ernest, 03). Le Blanc (Le Blanc, 05) describes strategies to keep the drama in games of contest; these strategies revolve around manipulating uncertainty (not knowing who will win) and inevitability (not knowing when it will end). He also describes tactics such as adding accelerators to change the pacing of the

game, or fog of war to conceal specific areas of the game, thus arousing curiosity. Oxland (04) describes different techniques to keep the player in the game moment by moment, such as increasing the value of the rewards, adding Easter eggs, arousing curiosity, etc.

From a drama and narrative perspective different techniques have been used. These include emotional and character investment by allowing the participant to customise their character's appearance, or develop their character's characteristics or personality through the experience. David Freeman discusses several screenwriting techniques, he calls emotioneering techniques, that increases emotional investment or empathy towards a character. The techniques include increasing the characters' dimensionality, revealing a hint of a secret, revealing a character struggle (Freeman, 2003). These strategies can then be used by designers to influence the dramatic structure of the experience and push for more participant emotional involvement.

4. Learning-based Simulations, VR, and Interactive Narratives – what do they have in common with Process Drama?

In this section, we will discuss some examples of simulation or interactive narrative experiences which share some elements of process drama. This list is by no means exhaustive of the different types of interactive experiences that exhibit process drama.

4.1. Fourth Frame Forums



Figure 1. Screenshot from Fourth Frame Forums

Fourth Frame Forums (Gordon, 06) is a four frames comic style interactive narrative delivered through an online forum. The user is confronted with a four comic book style frames (shown in figure 1). The fourth frame is left empty for him/her to complete as shown in the figure. Each frame in the four frame sequence has a specific narrative function. The first frame sets the context, the second frame presents the problem, third frame escalates the narrative and shapes the problem for a decision. The fourth frame is the decision point to be entered by the user. This experience is delivered via the web. It is structured to allow many users to suggest text for the fourth frame. Instructors using the same forum critique each user's answers, and lead students to specific directions or provide some hints.

Using the key aspects discussed above to reflect on this experience, we can deduce that the experience does use narrative, evoke situated learning since the user needs to put himself/herself in the position of a character in the narrative to fill in the text for the fourth frame. The experience also provide instructors with mechanisms for reflection and coaching. Thus, while the design itself is

very minimalist in nature compared to the other examples below, it has all constituents of process drama.

In terms of attitude and suspension of disbelief, the experience lends itself well to the comic book subculture. It takes on a similar style as comic books and thus can be accepted by such sub-culture, thus allowing them to suspend their disbelief and open their mind to the play activity. However, the design of this experience is also very different from popular interactive experiences, such as games. This may lead participants from several subcultures, e.g. gamers, to refuse to accept this form and fail to be involved in the experience.

Another element that is worth expanding on is regarding the key element we defined as dramatization or involvement in the drama. While in *Fourth Frame* the user does indeed position himself in the character's position to deliver the text for the fourth frame, the actual experience does not provide techniques to allow the user to relate or fully identify with the character to involve him/her in the decision exhibited in the fourth frame. Therefore, users' may or may not be involved in the decision making process due to the disconnectness of the story and the participant.

4.2. FearNot!



Figure 2. Screenshot from FearNot!

FearNot! (Fun with Empathic Agents Reaching Novel Outcomes in Teaching) is an interactive drama focused on training children ages 8-12 to cope with bullying situations (Hall et al., 06; Watson et al., 06; Ayllet et al., 06). Children in school get subjected to many scenarios where they are being victimized or bullied by other children within a classroom or school environment. Such bullying scenarios affect student's psychology and has long term effects beyond school, in extreme cases it may lead to psychiatric referral (Kumpulainen et al., 98) or even suicide (Carney 00). FearNot! is an attempt to allow students to understand the victim's position and learn several strategies to cope with such behavior.

To accomplish this goal FearNot! delivers a very interesting form of creative drama. Figure 2 shows a screenshot of the interactive drama. The environment resembles a video game environment, where characters and the school environment are graphically rendered in 3D. The user assumes the role of an invisible friend who can interact with the victim character giving him/her advice or support. The structure of this interactive narrative borrows from Augusto Boal's (Boal ,93; Boal, 02) political improvisational theatre. In his improvisational games, he divides the audience into groups, each group taking responsibility of one character within the improvisation. Each group meets with the actor acting the character they are responsible for and negotiate with him/her what he/she should do next. The actor then takes the advice and improvises with the other characters the scenario, and so on. Using this structure, FearNot! divides the narrative into several pieces, for each piece the

scenario is shown and then the user interacts with the character by selecting a coping strategy and reasoning with the character as to why such strategy will work. The resolution of the narrative happens in the last narrative piece and is dependent on user's suggestions and advice.

As a process drama, FearNot! involves the user in a situated learning environment, allows him/her to identify with the character in the narrative by being involved in a narrative or a drama as it evolves. The simulation has a narrative and story component as well. The element of drama is evoked through character empathy and investment. First the user is confronted with a character that undergoes a very harsh bullying episode. This sets the stage for empathy and identification with the character's problem and situation. Then the participant is asked to act as the character's friend and suggest resolutions to his predicament. This evokes emotional investment and responsibility for the character as the participant's choice will have a direct impact on the character's future.

On the other hand the simulation lacks coaching and reflection. The intention, however, is to include it within the school curriculum to allow students to learn about bullying situations and how to cope with it. Since it is designed to be integrated within the school structure, it is assumed that teachers can be involved to provide coaching and reflection. Therefore, the simulation provides a vehicle for allowing students to be involved in a characters' situation by acting as their friends, and provide advice, as well as see the consequence of their advice.

4.3. ELECT BiLAT



Figure 3. Screenshots from BiLAT

ELECT BiLAT is a game-based simulation being developed at ICT (Institute of Creative Technologies) at USC (University of Southern California) (Hill et al., 06). It is designed as a training environment for learning how to conduct meetings and negotiations in given a cultural context. Specifically, the simulation allows students to take role of a US Army officer stationed in an Arabic village who needs to conduct several meetings with local leaders. Thus, the student will be involved in gathering intelligence, conducting meetings, and negotiation, whenever necessary. While many training systems focus on hard skills, such as physics, math, etc., this particular training system focuses on soft skills in domains that involve people and social relationships. Thus, students will need to establish their relationships with characters, be sensitive to the cultural conventions and rules within meetings.

This system was designed based on several research projects developed at ICT, including a dialogue manager which manages the dialogue of the characters, smart bodies which encodes gesture and uses procedural and motion capture animation data to encode utterances based on context and

character relationships, PsychSim social simulation which is used to model the social simulation and reactions of characters based on interaction and context.

The system also encodes an automatic artificial intelligence based method for coaching and reflection (Lane et al., 06). They use a tutoring system developed based on XAI (Explainable AI) method (Core et al., 06 and Johnson, 94), which uses planning and heuristics to encode several reflective activities. In analyzing a student's actions in a given scenario, XAI is used to identify mistakes, suggest ways to improve, and it also allows students to question motives and reasoning of AI characters.

This system is still work in progress and thus there are no published empirical results discussing the evaluation or the effectiveness of the integrated research projects on the learning and training outcomes. However, we can look at the architecture of the project as a process drama. The system surely does exhibit the key elements of process drama. The inclusion of a dynamic system for non-player characters' dialogue, and non-verbal body movements based on character relationship and context will enable better role-play with characters and thus allows situated learning. Narrative and story were encoded through scripted dialogue utterances, although it may be restrictive and linear due to the emphasis on scripting. The system includes mechanisms for automatic coaching and reflection. The participant is acting as a virtual character within the experience, and thus the participant is making emotional investment as he/she is developing his/her characters' story through their interaction. One interesting aspect of this simulation is the mind set. Since participants vary in their culture and political opinions, they may have several reservations playing as an army personnel within an Arabic village.

4.4. TLCTS (Tactical Language Training System)



Figure 4. Screenshots from TLCTS

TLCTS (Tactical Language Training System) is another simulation that was developed at USC but at ISI (Information Sciences Institute) (Johnson et al, 2005). TLCTS uses game based technologies and design to support foreign language learning and cultural skills acquisition. The TLCTS includes two training courses: Tactical Levantine Arabic, for the Arabic dialect spoken in the Levant, and Tactical Iraqi, for Iraqi Arabic dialect. The experience takes the form of an interactive narrative constructed as a 3D game like environment (see Figure 4). The participant plays the role of a character, who is given several missions to solve. Solving the missions involve talking with characters in foreign language as well as showing specific cultural knowledge through the participant's choice of actions for his/her avatar. As the participant ventures through this world he is accompanied by an assistant non-player character who takes the role of a coach guiding the participant towards solving the mission's goal. The interface also includes several other

components. First, the skill builder (Figure 4, right) is a set of interactive exercises focused on the target skills and tasks, this acts as a tutorial allowing participants to practice conversing. Second, the tutorial also includes a virtual tutor which evaluates the conversations and speech input of the participant and gives him/her feedback to allow them to improve. Finally, there is an adaptive hypertext glossary that shows the vocabulary in each lesson, and explains the grammatical structure of the phrases being learned.

This simulation exhibits play and situated learning through situating the participant in a full virtual environment as a character within a foreign culture exhibited through the virtual world. It allows for reflection and coaching through assistant virtual characters that can assist the participant through the missions in the game. It has the potential drawbacks as with the ELECT BiLAT simulation in terms of the mind-set and story dramatization.

4.5. VOSCE



Figure 5. Screenshot from VOSCE

VOSCE (Virtual Objective Structured Clinical Examination) is a simulation that explores the use of virtual characters to help promote or strengthen patient-doctor communication skills. The system allows medical students to interview a virtual patient named Diana using speech and gestures, thus allowing for natural setting instead of using typing or menu choices (Johnsen et al., 2005). The system uses data projectors to present life-sized virtual characters to the medical student. Students speak to the virtual patient through a microphone. Thus the system includes speech recognition and an artificial intelligence system to match speech to appropriate responses. These responses have been created by some member of the teaching faculty at the University of Florida, Shands Hospitals. In addition to speech input, the system also tracks head and hand movements thus allows the virtual patient to react to gestures, such as pointing and hand shaking as well as eye contact.

The system is still a work in progress. In terms of narrative and drama, it is very minimal. It is heavily directed towards role play rather than drama. The only portion of the simulation that can contribute to building a narrative is the responses encoded in the system by the teaching faculty. As a role playing simulation it is an interesting design since it removes the hurdle of menu and typing commands and instead replaces that with a more natural interface of voice, speech, gesture, head movement, and eye contact. This may improve the level of immersion in the actual role play activity since the participant is playing as himself and thus gains automatic character identification, but such a hypothesis needs to be evaluated.

In addition to the environment itself, the simulation also includes a virtual tutor who conveys errors, such as questions the student should have asked but didn't, correct diagnosis, etc. At the end of each scenario, the tutor also evaluates the students' performance and gives them a short feedback, but does not allow them to reflect on their learning process extensively.

4.6. Others

This section is not meant to be exhaustive of interactive narrative or simulation type activities that encode process or creative drama. However, we chose to discuss these particular examples since they vary in terms of the (a) design details of the virtual environment, (b) approach towards coaching and reflection, and (c) the domains of use.

Fourth Frame, for example, is very minimalist in terms of its design. It does not employ a full fledged 3D virtual environment with non-player characters. Instead it employs a comic style within a web-based interface. While the others discussed all employ fully fledged 3D environments.

Coaching and reflection are important parts of story dramatization activities. The simulations described above take on different methods and approaches to coaching and reflection. FeatNot! and the Fourth Frame rely on users to add their reflections and instructors to coach students. On the other hand simulations such as ELECT BILAT and Tactical Language Training System use artificial intelligence characters for automatic coaching and reflection.

In summary, there are many simulations that employ process-based drama for learning or training. We have explored some of them above, there are many others that use similar techniques, for example, Vector is a simulation similar to TLCTS (described above); it explores a virtual foreign town where the participant interacts with characters through menu choices of different utterances. Vector also includes a tutor which monitors the game, but does not provide coaching. Dafur is Dying (Ruiz, 2007; Ruiz 2006), Homeless it is No Game! (Lavender, 2007a; Lavender, 2007b; Lavender, 2007c) are examples of games that put the participant in a particular role within an unfolding interactive experience that encodes process drama. While these are interesting interactive experiences that are using game play or interactive narrative to emphasis particular awareness and learning objectives, they tend to exhibit situated learning and story or narrative but do not emphasis reflection or coaching within their infrastructure. But they do employ story dramatization to allow participants to understand the situation in Dafur (in case of Dafur is Dying) or homeless people in Vancouver (in case of Homeless It is No Game!).

5. Learning-based activities in Second Life – what do they have in common with Process Based Drama?

Beyond simulation and game-like environments that cater to single users, there has been recently an explosion in the number of multi-user virtual environments. An example of such environments is Second Life. Second Life is a virtual world enabling users to create and customize their own content. It was launched in 2003 by Linden Lab and now has over one million registrants and is home to a wide variety of communities, ranging from fantasy-based role play groups to real world businesses and educational institutions.

While there has been little formal research, one can see elements of process drama, such as improvisational storytelling and immersive role play with learning objectives in different communities within Second Life. There are a variety of large role-play societies in Second Life

including Furies, Elves, Police and Military, Vampire and Nekos. Gorean role-players, for example, represent a large segment of the population with over a hundred simulators depicting different regions of the fantasy planet Gor. Goreans in Second Life role play a society based on the science fiction novel series *The Chronicles of Gor* by philosopher John Norman; they range from twitch gamers engaging in combat to those who participate in a wide variety of book-based activities and even incorporate elements of the Gorean philosophy into their everyday lives.

Many Goreans enact a variety of activities or scenes in their Second Life simulations using elements or ideas from the books on which their community is based. One common example is dance performances, most often presented by Goreans who choose to play a “slave” role. The dance performance is often outlined by the “Master” or “Mistress” for which the “slave” dances. These dance performances take on two forms: pre-scripted and improvisational. Pre-scripted dances are programmed through text, animation, sometimes second life scripts are written to allow multiple dancers to perform and interact together. Improvisational dances are composed of on-the-spot challenges set for the performers to improvise using specific props in the virtual world. A basic example might be for a performer “ordered” to improvise a dance using an item such as a silk veil, or a chain. Many Goreans consider such activities more than a challenge or game, and that such storytelling through dances can provide not only entertainment, but also are an activity that can bring about self knowledge through participation and reflection.

Similar elements may also be seen in rituals of initiation, combat training, and group events. This sort of “emergent” use of immersive environments in Second Life by residents, while perhaps not exactly fitting the definition of process drama, can provide us with insight into tools and strategies for creative drama in virtual worlds. In the next sub-sections, we discuss some more examples within Second Life that directly borrow from creative or process drama.

5.1. Of Mice and Men



Figure 6. Of Mice and Men Mock Trials in Second Life

In early 2008, educators at Suffern Middle School in the United States developed a court room improvisational drama based on *Of Mice and Men* novel (see Figure 6). The experience involved a total of 200 8th grade students. Educators ran this experience for a week, 4 sessions a day in 2 courtrooms, a total of 8 trial sessions a day. Peggy Sheehy, led the *Of Mice and Men* activities as a bailiff in one of the courtrooms. She set up groups to role play two perspectives (George's and the victims). Cynthia Calongne, as Ryl Redgrave, served as the bailiff in the other courtroom. Mock

trials were then improvised in Second Life after which students and teachers reflected on what was learned in through their experiences.

This experience exhibits many of the key elements of process and creative drama. It allows participants to role play through a customized character (avatar), which allows participants to identify closer with the character they are playing. The experience was structured as a court activity based on a novel. Thus, the experience itself is designed with narrative and drama content. A court setting is interesting because it evokes play through arguments and evidence. This makes the experience very involving and dramatized. The experience also includes a session of reflection with teachers and students.

5.2. English Village



Figure 7. English as a Second Language in Second Life

English Village is a region in Second Life used to teach English as a Second Language. It has been used both in-world and at Mukogawa Women's University in Japan. The simulator includes a variety of environments as well as a “holodeck” that are used for immersive role play in classes. One of the ways in which students practice their English is through taking part in role-playing different scenarios using their avatars in the environment; these activities include asking for directions at a bus station or checking in at a hotel lobby.

Mike McKay (2008) aka “Professor Merryman”, one of the educators at English Village has created a blog for participants and other educators to reflect on the use of Second Life simulation in teaching English. He reflects on several aspects of the experience, including questions about what makes a good virtual teacher and how best to take advantage of the virtual environment in teaching.

This experience lends itself very well to creative drama. As discussed earlier, creative drama has been used extensively to harness communication, reading, and writing skills. The English Village is a great example of manifestation of this process within the virtual world. In terms of the key roles of process drama identified, we can attest that the English village exhibits many of them, especially role playing and reflection. However, the information provided on the actual work is still scarce and not enough to form an opinion on the actual experience in terms of the dramatization of the role-play activities or the narrative components.

5.3. Second Life and Creative Drama

In the Second Life examples examined, key tools for creative drama are the participants’ avatar, which may be infinitely customized and modified, as well as the environment itself. Environments and the avatars in them are made interactive through pose-balls and scripts, enriching the interaction and helping to provide some suspension of disbelief. Environments may be set up to exist for long

periods of time, or as in the case of “English Village” and in many performances in Second Life, a holodeck environment may be used, to quickly change from one scene to another.

Second Life is flexible in the modes of interaction that it enables, which include public and private text chat, public and private voice chat, animations, and gestures. These tools and scripts as well as avatar proximity as a form of body language have been employed by the case studies discussed.

In virtual worlds such as Second Life, imagination is not the only constraint for creative dramatization. A serious hardware divide exists rendering many people without high end computers access to the Second Life grid, or providing a limited, slow moving and often fragmented experience due to crashing. Moreover, many of Second Life’s advantages offer for rich interaction and dramatization such as scripts, models, textures, avatars, gestures and animations, may fail or malfunction for participants whose computers cannot handle the program. This seriously limits the wide use of the program, and may cause divides between students who can access the environment from home and those who must use school computers. The amount of concurrent users in Second Life is also limited to 100 per region, with performance starting to degrade and exhibit lag time at around 40 users or less. This may constitute a serious constraint for larger classes and necessitate scheduling of time in the simulation, affecting participation. In the case of Second Life most of these constraints are technical and may be improved over time by Linden Lab or in future virtual world platforms. A more persistent issue is teaching educators and students wishing to use virtual world platforms such as Second Life how to take advantage of its many possibilities. For many, the excitement of entering the metaverse is dampened by their realization that they must ascend a steep learning curve in order to take full advantage of its possibilities for creation and interaction. While some will find it easier than others, those who have difficulty learning the program basics or have little time to devote to this may have a diminished experience when it comes to role-playing a story as they are unsure how to participate. One of the ways to approach this problem may be to provide pre-exercise workshops on avatar customization, navigation and interaction basics for participants in Second Life creative drama, so that skills divide is less likely to impact the experience.

6. Conclusion

In this paper, we discussed process drama detailing a specific example, Creative Drama. The importance of process drama is in its use, and power as a vehicle for creative thinking and learning as well as training. We have outlined many examples of process drama used in many fields. Our goal is to look into the future of process drama. Our question is: how does technology transform process drama into the virtual world? As technology becomes better and more accessible, are we going to see a different kind of process drama and how would that impact our learning, critical thinking, and creative process? To this end, we reviewed several factors that we believe makes a process drama successful. We then reviewed several virtual single user and multi-user interactive experiences that exhibit process drama. We critiqued the experiences through the lens of story dramatization techniques and the key elements we identified as important to make a successful process drama.

As it can be seen from our discussion in the paper, there has been much progress technologically in the area of virtual worlds, artificial intelligence, graphics, and simulation which have allowed the development of first generation virtual process drama simulations (examples of which we have discussed above). The examples that we discussed in this paper are all impressive technical achievements. However, these works are still in the beginning stages. While there are several open technical problems, including network systems, artificial intelligence, tutoring systems, etc., the

community is starting to realize that creating a process drama vehicle is not just a technical problem but it is an artistic and design problem as well. Thus, resolving this problem requires an interdisciplinary collaboration and investigation in the art, design, and technical fields. In this paper, we critiqued the case studies described not from a technical standpoint, but from a creative drama stand point drawing on lessons from design and drama. We believe the road to enhancing virtual process drama will indeed require a process of inquiry that merges these three disciplines.

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