

# Organized Lightning

Bradley Gill

*Department of Digital Media, the University of Central Florida*

*400 Central Florida Blvd. Orlando, FL 32816 USA*

[Bradleygill2009@knights.ucf.edu](mailto:Bradleygill2009@knights.ucf.edu)

*“Electricity is really just organized lightning.”*

*George Carlin*

*Abstract* – The central purpose of this paper is to explore how graduate students can develop content in emerging media by using a structured brainstorming technique. This process is addressed as a reflection of the shared story building experience during the fall 2009 graduate course DIG 6551 – Applied Interactive Story. The author also addresses the necessary acquired metacognitive knowledge of when and where to use particular strategies for learning or problem solving.

## 1. Introduction

In August of 2009 the DIG6551 class read an accompaniment to the syllabus that set forth the goals and approaches of the course. The document included two parts. Part one defined the role of metacognition and the expectation for graduate students for self-regulated learning. The work involved extending and combining the technical core competencies of individual students (sound, graphics, programming, etc.) to enhance the capabilities and content of new media. It also gave fair warning of the sometimes confusing nature of researching creative problems. The concept of metaphor was put forth as a mechanism for finding similarities between creative and scientific processes. Part two of the document defined the student’s role as apprentice while addressing the professor’s key concern: “to find ways to connect people of different ages and life

circumstances in mutual learning experiences, using technology to bridge gaps of time, distance and culture” [1]. The specific learning experience in this case was a pending National Science Foundation grant funded project called “Dancing the Earth”.

## 2. The Problem

The Dancing the Earth project was intended to serve as a metaphor for a hypothetical class project with similar objectives. The actual Dance the Earth project proceeded on a full scale production track at the UCF Media Convergence Lab, while the hypothetical version took place at the UCF Center for Emerging Media. Intellectual discoveries made by the DIG6551 group were shared with the production group by the professor. Copies of the NSF grant proposal were provided to the class for review under agreement of confidentiality.

The Dance the Earth project utilizes projected mixed reality environments that incorporate whole body gestures and docents that are connected to the exhibit from remote locations to engage museum visitors in an interactive environmental science experience. The physical and technical aspects, while new and developing are not the main concern of the project. Rather, the central problem that the Dance the Earth project addresses is experience design.

### 3. The Solution

Experience design “draws upon ideas from artificial intelligence, the psychology of optimal experiences, sociology, and other areas, including electronic commerce, persuasive, human-computer interface design, drama, and digital storytelling” [2]. It is the practice of designing products, processes, services, events, and environments with a focus placed on the quality of the user experience and culturally relevant solutions, with less emphasis placed on increasing and improving functionality of the design [3]. In other words, experience design operates on the assumption that the functionality of the device (computer, theater, etc.) should be invisible to the user, allowing the experience itself open to direct design possibilities. Classical design practices do not disappear; instead they are combined to focus together on the user experience.

#### 3.1 Serious Games, Narrative Games

A game narrative theory was set forth as the framework for which the class might design an experience in which the player would naturally create stories and become the protagonist within a serious game environment [4]. From a digital media perspective, popular serious game genres include military simulators and online educational games. The purpose of Dance the Earth is to create a positive sociopolitical loop by designing a mirror world [5] game experience, illustrated in figure 1.

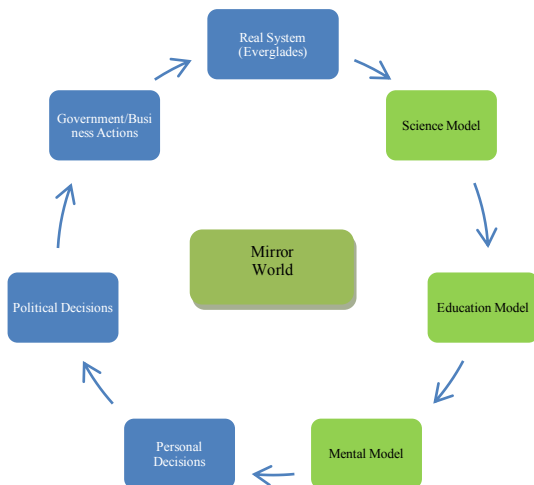


Figure 1

There is some debate of the role of narrative in game design. Some scholars have framed this as the narratology vs. ludology debate [6]. Basically, the narratological view is that games are novel forms of narrative and can thus be studied using narrative theories [7]; while many ludologist maintain that representational elements of games are incidental, and studies should focus on the rules and structure of games [8]. While this debate has led to the development of new critical theories, the DIG 6551 class proceeded from the perspective of a narrative within the parameters of a game experience.

A model for this approach was exemplified through the work of Will Wright and the creation of his game, The Sims. Like most games, The Sims game begins with a defined space (the setting); but that is where the similarity ends. While most games end when a specific goal is reached (checkmate, high score, etc) the Sims has no end state. The game has unlimited replay value, and the player can play on indefinitely. As a result, The Sims has been described as more like a toy than a game [9]. Perhaps the best rationale for serious/narrative games as a metaphor for learning was posited by Will Wright in a 2006 editorial:

“...Just watch a kid with a new videogame. The last thing they do is read the manual. Instead, they pick up the controller and start mashing buttons to see what happens. This isn't a random process; it's the essence of the scientific method. Through trial and error, players build a model of the underlying game based on empirical evidence collected through play. As the players refine this model, they begin to master the game world. It's a rapid cycle of hypothesis, experiment, and analysis” [10].

The stage was set, and the mission defined. What remained was for the students of DIG 6551 to contribute their individual talents to deconstruct the Dance the Earth project and postulate a parallel project. To achieve this goal, the class employed a method that was popularized by Alex Osborn in his 1957 publication, Applied Imagination [11]. The method and its variations are popularly known as brainstorming.

## 3.2 Brainstorming

Osborn prescribes four rules in brainstorming [11]:

1. Focus on quantity: This rule is a means of enhancing divergent production, aiming to facilitate problem solving through the maxim, quantity breeds quality. The assumption is that the greater the number of ideas generated, the greater the chance of producing a radical and effective solution.
2. Withhold criticism: In brainstorming, criticism of ideas generated should be put 'on hold'. Instead, participants should focus on extending or adding to ideas, reserving criticism for a later 'critical stage' of the process. By suspending judgment, participants will feel free to generate unusual ideas.
3. Welcome unusual ideas: To get a good and long list of ideas, unusual ideas are welcomed. They can be generated by looking from new perspectives and suspending assumptions. These new ways of thinking may provide better solutions.
4. Combine and improve ideas: Good ideas may be combined to form a single better good idea. It is believed to stimulate the building of ideas by a process of association.

The brainstorming process can vary depending on the group dynamics (setting, participants) and goals. The method begins with a problem set forth by a facilitator. In this case the problem was focused on the primary concern of the professor [1], who also served as the facilitator of the brainstorming sessions. Unfiltered ideas are solicited and recorded. Next, the group critiques and selects some ideas for further development and/or sub-problems. A basic visual description is presented in figure 2.

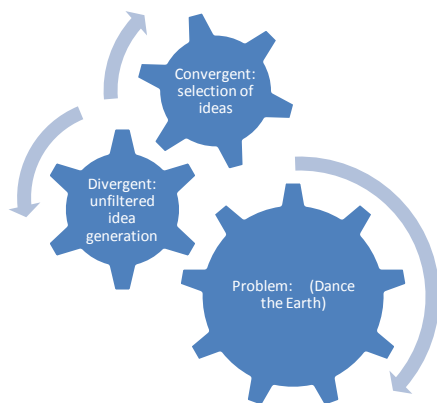


Figure 2

## 3.3 Questorming

The class began with a variation of brainstorming called questorming [12]. Its aim is not so much to get a group to come up with solutions to a problem as to come up with well-stated and well-selected questions or problem formulations. Some of the questions arrived at for the Dance the Earth project:

- What Questions should we be asking about the "Dancing the Earth" Concept?
- Which of these questions are of most interest to us?
- How would we answer these questions?

From these metaquestions, the class arrived at nearly a hundred random divergent questions that were then analyzed and converged into categories and groups (environment, education, scripting, etc). These were identified as key areas in which more knowledge was needed.

## 3.4 Stream of Consciousness

Stream of consciousness writing, or freewriting, can be (and was, by the class) used as a variation of brainstorming to let one's thoughts flow as they will, writing down whatever comes to mind within the definition of a problem or subset. It is similar to the Spontaneous Prose technique developed by beat writer Jack Kerouac [13]. The advantage of this technique is that it frees internal criticism and allows the writer to record things that might otherwise be repressed or edited. The moderator defines a problem and a time limit, and the participants write without pause until the time is up. This process can be done on computer or with pen and paper. The crucial point is to keep writing. Word must continue to flow, no matter the relevance. Author Natalie Goldberg offers these rules [14]:

- "Keep your hand moving until the time is up. Do not pause to stare into space or to read what you've written. Write quickly but not in a hurry.
- If you get off the topic or run out of ideas, keep writing anyway. If necessary, write nonsense or whatever comes into your head, or simply scribble: anything to keep the hand moving.
- If you feel bored or uncomfortable as you're writing, ask yourself what's bothering you and write about that.
- When the time is up, look over what you've written, and mark passages that contain ideas or phrases that might be worth keeping or elaborating on in a subsequent free-writing session."

### 3.5 Mind Mapping

Mind maps are diagrams used to visualize words and ideas that are interlinked and arranged around a central key word, problem, or idea. Since ideas are presented in a radial, visual manner, mind maps encourage a brainstorming approach to planning and organizational tasks. Mind maps are basically a graphical method of taking notes.

The basic concept of mind mapping has been used for centuries. Some of the earliest examples were developed by Porphyry of Tyros and the graphically visualized the concept categories of Aristotle [15], as seen in figure 3.



Figure 3

Use of the term Mind Map was trademarked in 1993 by the Buzan Organization, Ltd following publication of a book by the same name by Tony Buzan [16]. Buzan suggests 10 rules for mind mapping:

1. “Start in the centre with an image of the topic, using at least 3 colors.
2. Use images, symbols, codes and dimensions throughout your Mind Map.
3. Select key words and print using upper or lower case letters.
4. Each word/image must be alone and sitting on its own line.
5. The lines must be connected, starting from the central image. The central lines are thicker, organic and flowing, becoming thinner as they radiate out from the centre.

6. Make the lines the same length as the word/image.
7. Use colors – your own code – throughout the Mind Map.
8. Develop your own personal style of Mind Mapping.
9. Use emphasis and show associations in your Mind Map.
10. Keep the Mind Map clear by using radial hierarchy, numerical order or outlines to embrace your branches.”

There are currently dozens of free and proprietary software applications available that offer mind mapping strategies. There are also several mind mapping templates available for popular office software applications like Microsoft Word and PowerPoint.

### 4. Summary

There are variations of brainstorming techniques not listed or explained in this paper. Indeed, some research has questioned the benefits of brainstorming [17]. Nevertheless, a structured brainstorming approach may still provide benefits such as boosting morale, enjoyment, and team work. Furthermore, the specific variations of brainstorming (questorming, stream of consciousness, mind mapping) that were discussed here feature uniquely vetted properties and were used successfully by the students of DIG 6551.

Brainstorming was only a portion of the methods used by the class to address the problem. The creative ideas discovered in brainstorming sessions were informed by presentations provided by the professors and students. Technological, psychological and sociopolitical issues were explored in significant detail.

This paper addressed how structured brainstorming techniques were applied to one specific problem. How else might these methods be employed? The clues lay in the contradiction found in the title of the course: Applied Interactive Story. While story implies a passive experience, interaction demands the opposite. A dynamic, creative, and professional strategy must be applied to invent solutions for the problems and opportunities presented by new media technologies and a culture that demands to be involved with its own stories.

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