OBSTRUCTING THE VIEW:

An argument for the use of obstructions in art education pedagogy

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> I've [Jorgen Leth] done films about games. What I like with games is that there is this uncertain outcome and the element of chance. You cannot know what a bicycle race leads to, so it's an uncertain story. I like to apply storytelling methods and techniques to try to frame the story in an interesting way, but you can never control what's happening. When I make films, I'm very conscious about leaving space for this uncertainty, and for some unexpected things. So filmmaking is also a game. (Kaufman, 2004.)

In the film *The Five Obstructions* (2004), Lars Von Trier challenges his mentor Jorgen Leth to remake his 1967 film, *The Perfect Human*, five times, removing Leth's filmmaking comforts and conventions as part of the agreement. *The Five Obstructions* is a documentary of the barriers that Von Trier implements and the films that resulted. This paper will look at *The Five Obstructions* and the implications of creating obstructions as both a pedagogical approach to art education, and a foundational approach for a game-based pedagogy.

In the first obstruction, Von Trier (2004) challenges Leth to remake his 1967 film *The Perfect Human* in Cuba, without camera shots longer than 12 frames (approximately .5 seconds), answering questions Leth posed in his original film. The difficulty of this obstruction was a technical problem for Leth, forcing him to use to a very fast-paced and unusual filmmaking style. Leth answered by repeating and reversing film segments to create his narrative.

For the second obstruction, Leth was told to film a dinner scene from *The Perfect Human* in a "miserable place" but "not show it" (Von Trier, 2004). His new scene takes him to the brothel district of Bombay (now called Mumbai). Von Trier requires Leth to film himself eating a meal in the open air of the brothel district, yet hiding its existence. Leth anxiously begins filming, unafraid of the blighted area itself, but of his appearance as a white western man imposing himself in this place of need. Seeing Von Trier's obstructions as a psychological game, Leth musters up the ability to distance himself from his feelings of sympathy towards those in the brothel district, circumventing Von Trier's austere calculation by filming the scene with a translucent screen between Leth and those living in Mumbai, providing a frame of reference to his original film's message of the perfect and the human, partitioning himself as inhabiting a separate space, a perfect space, yet challenges the viewer to recognize the real world conditions of Mumbai's brothel district through the partition.

Von Trier, unpleased with Leth's framing technique, poses two options for his third obstruction: a reshoot of *The Perfect Human* in Mumbai as Von Trier described, or film *The Perfect Human* with complete freedom. Complete freedom poses as challenging an option for Leth as a total reshoot. Rather than return to Mumbai, Leth chooses to remake the film in Belgium, filming in a noir style. Von Trier wanted Leth to be "like a tortoise on his back" struggling with the process, but finds his mentor "unmarked" by the exercise (Von Trier, 2004). In *The Five Obstructions* DVD commentary Leth describes taking a defensive position to Von Trier's obstructions. For Leth, exposing his methods and approach to each obstruction, he is defying Von Trier's bait to be labeled as a cool and unfeeling, or a "perfect human." Von Trier has also created obstructions for Leth that he himself cannot perform. Because of personal phobias like his fear of flying, Von Trier is incapable of traveling. Cuba or India are places Von Trier would never be able to visit and is incapable of personally experiencing, obstructions to which he could not complete for his own challenge.

While Leth is strategic in his approaches to directing, restrictions open up the possibilities for chance and change. Von Trier admits that whatever he says to Leth as part of their process of critique, inspires Leth to continue on. Yet Von Trier has made discipline and rules as a focus of his life and work (Macnab, 2006). Von Trier known to be strict and rigid in his methods as a director as a way to expose a rawness to his films (BBC News, 2005). Further evidence of his support for rigid filmmaking can be seen in his involvement with the Dogma 95, an avant-garde film movement developed as a response to the major film studio production model (Dogma 95, 2008). Leth sees Von Trier using rigid rules and obstructions as a romantic device for creating raw emotion, where Leth finds those obstacles as a way to free up his creative process (Kaufman, 2004).

The fourth obstruction requires Leth to remake *The Perfect Human* as a cartoon. Both Von Trier and Leth dislike cartoons and Von Trier believes Leth will be unable to make a "good" film using animation as the medium (Von Trier, 2004). With help from a rotoscoping animator, Leth uses his film footage from the earlier obstructions to make his animation. Both Von Trier and Leth are impressed with the final result and Leth appears to gain confidence as the challenges continue.

In the fifth and final obstruction, Leth must claim film footage made by Von Trier as his own. Using footage and a voice-over narrative written by Von Trier, Leth must speak Von Trier's words as if he wrote them, editing the footage to tell Leth's narrative. In this final film, Von Trier reveals the rationale for his methods (Von Trier, 2004). Von Trier was affected by Leth's method of obstruction limitations wanting to get his mentor back to directing film after a long absence. Rather than exposing Leth as a cool, unfeeling filmmaker, unable to relinquish control of the film production, Von Trier exposes his own inabilities to relinquish control and accept chance and randomness.

Through these examples of the making process shown in *The Five Obstructions* (2004), a project-based curriculum for art education can be developed. This project-based curriculum using obstruction-based methods for teaching and discovery forms a game-based pedagogy. The focus of a game-based pedagogy are not the particular obstructions found in games themselves, like having the letter 'x' in *Scrabble*, hordes of zombies in the video game *Left 4 Dead*, the secret ingredient on *Iron Chef America*, or having to perform at an advanced level of difficulty in a game of H-O-R-S-E; but to use the idea of obstructions as an artistic method for creative output.

Artists and game designers Eric Zimmerman and Katie Salen describe in their book *Rules of Play* (2004), that games are free play within a larger structure. To develop a game, game designers determine the obstructions or rules that limit the scope of play in the game. Obstructions are a way for artists/game designers to create their work using specific parameters to work around as was described in film *The Five Obstructions*. These artistic obstructions are similar to what you would find in games such as out-of-bounds, penalties, and rules. In basic drawing assignments, obstructions are found in technical skill activities like upside down drawings, or using the non-dominant hand, but have also been found in the creative process of art in Duchamp's musical score Errata Erratum (MOCA, 2002) and psychogeography theory of Guy Debord and the dérive (Debord, 1958).

The obstructions of Duchamp and Debord follow the structures of games like rules and chance, also forming the limitation to how one can play the game. This scheme-like activity can also be used as a methodology for art making and art teaching. In game-based pedagogy, obstructions form rules, boundaries, or ways to think about the making of artwork. This method is not bound by focusing on materials or methods, but can come from the project idea. This game-based pedagogy is not designed to detract or confuse those who are more familiar with pedagogical approaches like process over product, questions over answers or experimentation over replication. Rather, a game-based pedagogy is designed to use those types of approaches with a structure for students to work against. The format of a game provides a commonly understood objective for students who work concretely, while the openness of play within that space gives the freedom to those students who desire more personal expression.

Freedom in restrictions

Although there are a number of definitions of the word "game," I am focused on defining game as a type of activity using the adjective word form, "eager and willing to do something new or a challenge" (Oxford). In this description, the focus of the word "game" is not as a competition at the expense of others, but a way for an individual to approach art making and critical thinking. In The Five Obstructions, the obstructions were not blockades for Leth, but obstacles that were incentives for the challenge. Through obstructions, students developing artwork can limit their focus without restraining their possibilities. Like puzzle games, designed to test ingenuity or knowledge, the mind searches the slippages of the puzzle's construct so resolutions can be found. It is in a puzzle's complications and entanglements that leads a student/player through a process of problem solving, a line of questioning that asks the student/player: "What is being said and how am I interpreting it?" "Is there a logic or system that can be denied or accepted by what I am investigating?" The interpretation and one's own values can be questioned and challenged based on the conditions of the puzzle as found in critical literacy (Tavin, 2008). Games are a common and popular construct to use with students as a way to investigate how systems work and how to find one's way within the limitations of those systems.

Typically a video game environment provides information to the player about the obstructions found in puzzle games like *Minesweeper, Tetris,* and *Portal,* where visual clues assist the player to problem solve. Video games often use prescribed logic to make the games easier to navigate such as moving left to right, bottom to top, or different colors and textures to tell the player what are solid or breakable structures. By using these familiar tropes players become engaged in the challenges that are clearly defined by the games objectives. The video game *Syobon Action Game* addresses notions of player logic and critical thinking by its playful use of obstructions. *Syobon Action Game* appears to the player

as a replica of the video game Super Mario Brothers, the most popular platform video game in history, having sold over 40 million copies ("Super mario sales," 2001). Referring to the visual cues of the Super Mario Brothers scenery as game convention, players begin to play by using their assumed knowledge and experience from Super Mario Brothers. However the creators of Syobon Action Game considered those assumptions, creating obstructions based on the traditional play of Super Mario (Bogost, 2008). As a player learns, the assumed knowledge of how the game world operates is tested and the player must devise alternative solutions, working around the obstructions to finish the game. Syobon Action Game works like Von Trier's methods in The Five Obstructions, created to get the player/Leth out of his comfort zone, stretching the conventions of thinking and practice as a gamer/filmmaker. Challenges that use puzzles and obstructions have been used in the selfesteem studies of Carol Dweck's theory of motivation (1999), citing that too much praise and easy tasks for children hurt their self-esteem and motivation more than help it (Dweck, 1999). Leth is driven by the challenges that Von Trier gives him, citing that constraints liberate his imagination, and motivating Leth more to produce a film he is happy with (Kaufman, 2004). It is with this form of motivation that a game-based pedagogy has possibilities in an project-based art curriculum.

Making as learning

The creation process and implementation of obstructions within games causes students to analyze the necessary and unnecessary components from the game-like assignment. It is through the making process of examination, experimentation, and revision that also describes game development as prototyping, testing, and redesign. Solutions in this process are emergent rather than planned because the "problems" are learned through the creative process. It is through this process of making that students learn the nuances of the "problem" they are solving. The assessment of the making process can include the history of the students' idea, the limitations of materials and complications of making. It is through the making process that the assessment of learning occurs and can be documented.

Promoting the role of the audience

The utilitatian advantages of using obstructions to generate ideas and develop projects as part of a game-based pedagogy have been described above, however, a game-based pedagogy also requires makers to have a critical awareness of the viewer. As students make art by playing the game set up by the teacher's obstructions, they are also making artworks for the viewer to respond to. By thinking about the audience as player/participants to a work of art, a game-based pedagogy proposes that students consider the feedback loop between the artist and audience, where viewers are asked to navigate and be involved in the work or idea, as found in interactive works of art like the flash mob Improv Everywhere's Frozen Grand Central (2007), installations like David Rokeby's Very Nervous System (1986-1990), and Stelarc's telematic piece Parasite (1997). It is important for students to understand that by removing the audience out of the artistic or game process, the work has a self-indulgent quality to it. When an instructor uses a project-based curriculum within a game-based pedagogy they should responds to student work as a viewer with the studio critique, and as the project facilitator, receiving feedback from students about the instruction and how the obstructions were received and responded to by students to retool assignments for future play.

From this description of obstruction and game-based pedagogy, this section of the paper looks at examples of research in art education that use obstructions and project-based work

as a pedagogical method. I argue that using obstructions and project-based work as pedagogy could have included game-based pedagogy as a framework to achieve critical learning.

In 1997, Sydney Walker wrote about Sandy Skoglund directing the production of an installation as part of a colloquium at the Wexner Center for the Arts on the Ohio State University campus in 1995 (Walker, 1997). Over a three-day period, the students were taught about Skoglund's work, met with the artist, and helped install the new piece at the Wexner. Skoglund, known for her surrealist tableaus, brought in a collection of unrelated everyday objects painted orange as part of the monochromatic color scheme. As students installed the work, some began have difficulty making aesthetic decisions of where to place the disparate objects in a way that "made sense." Walker noted that there was a general belief that "greater control and overt direction" was needed for a unified meaning that was lacking (Walker, 1997).

These participants were looking for the product to form the meaning for them, tying in being labeled as collaborators with Sandy Skoglund, rather than meaning coming from the process of the project. Walker writes that as students thought more about their process, and the objects they had to work with, more meaning and questions came to them as to what was being presented by the artist. By providing limited direction and information, Skoglund wanted the participants to create their own meaning, not recreate her meaning, and by doing so removing some of the Skoglund "brand". Although students were obstructed by choice of materials, the unified color system was intended to provide a gateway to combining the unconnected objects. Walker notes that often studio activities are designed around the teacher's ideas or artist's being studied. She sees that this prescriptive model can restrict student responses, creating derivative work rather than allowing for student concepts to be materialized. Likewise, an unstructured problem does not necessarily produce critical thinking, rather places a premium on personal expression.

Skoglund began with an open-ended situation yet created constraints for the students with the monochromatic material. When asked about her process, Skoglund responded that the meaning was to be created during the process rather than through a predetermined outcome. Walker observed that Skoglund's ideas registered with participants at the time of discussion, but later the students' responses centered on creating rationality to the composition.

Skoglund's created obstructions for the students working on the installation. By limiting the work to the monochromatic items, Skoglund gave the students an obstructional structure as a point of departure for their involvement in the installation process. Unfortunately, there was not enough information given in the instruction as to whether or not students were to develop their own ideas and connections or connect to what they knew and understood of Skoglund's process and methods. Although the obstructions were clear with the use of orange, little else was provided to give structure to the obstructions for participants other than the direct references to Skoglund. If Skoglund or the art education organizers had stated that the installation process was to be playful, using the orange objects as the guiding rule to how the students could play, and the photographs of the installation were documents of their play, it is possible that the students would have had a stronger sense of purpose in their participation .

Using guided obstructions as part of the creative process in installation art or in game design focuses the limitless possibilities to an assignment, rather than limiting the

assignment to a specific result. Eric Zimmerman, game designer, calls these obstructions "limitations" when he's making a game (Lantz & Zimmerman, 2009). This process of obstructions is designed to create a critical awareness of the dynamics between the teacher and student, attempting to transparently state expectations. Response to meaning in the assignment is shaped by how the assignment is frames and how the task is done rather than solely on the end result. Students critical thinking emerges when they must focus on the limitations of the process as it effects the end result. They must be reflective within their methods as to how the game could work; they must pause to consider what is required in order to move past each obstruction. In essence, this is a process of negotiation: students must adapt their abilities to the creative process or style required.

Obstructions can also be used as a procedural model rather than a game-model, negating choice. Cynthia Bickley-Green and Phil Phillips "Using Visual Arts and Play to Solve Problems and Foster Resiliency" (2003) shows an example of a project-based curriculum using obstructions with a procedural structure.

In developing a program based on creative play and visual art, the Eastern Carolina University educators knew that the student population liked working with clay, taking pictures of themselves, developing visual ideas on computers, and creating videos. Students were asked to create clay props and computer advertisements for a video about controlled substances using theatrical play as their description of play.

The article (Bickley-Green & Phillips, 2003) describes how the students would be able to play in this project: they were told to make clay props for the film, being taught about brains and then made clay brains. Students were also asked to make self-portraits as a "playful" visualization of the future using photographs, using the photos to create a collaged selfportrait. Finally the students made video plays of what they had made and learned about controlled substances. This study looked at play very narrowly, defining it as something that students did with the material, not how the material could be used, or in the manner in which the assignments could be done. For example, the authors noted that students were to design new warning labels for controlled substances. The instructors were surprised that many of students "stereotypically" made the "universal no" pictogram (circle-slash symbol) (Bickley-Green & Phillips, 2003). Rather than focusing on creating "more original visual images" the curriculum could have focused on creating obstructions to the use of the "universal no" pictogram, either in how the curriculum was developed by starting the discussion with a variety of ways "no" can be articulated, or by obstructing conventions within the projects the students made. This addition to the curriculum could have directed the conversation to how new representation can be developed and what it means when your vocabulary has been censored, to provide a gateway into critically thinking about the reasons for access and denial. Further, the obstructions used in this study became limitations to what the students could do rather than what they couldn't do. Obstructions used as limitations for what students can do rather than as a game gives students clearly defined assignments, but offer little opportunity for self-expression or critical thinking. Counter to this, in The Five Obstructions, Von Trier told Leth that he must film in certain ways for each obstruction: using short cuts film, animation, demanding film locations, and collaborative authorship. However within those limitations, Leth was allowed to execute his ideas with complete freedom. Viewed as a game, the obstructions only creating boundaries for the space Leth could play freely in.

Power dynamics of player and game

There is power in the process of creating, whether it is a house, game, cup, letter or song. Limitations of power exist for in the artist, their medium, and their idea(s). These challenges or obstructions are part of the making process. As Foucault (1977) talks about how power is exercised, the dynamics of the center of power is in flux between the game and the player, with the actual power, perceived power, and the power of the game interface. This can be exemplified in games like poker where the game has carried a currency of epic proportions, including life and death ("Killed over a poker game", 1885). Knowledge of how the game system works outside of the game space is also a kind of power. The idea that through the critical thinking process required to move past those obstructions, shifting the power dynamic from the person who created those obstructions to the person employing their own means to get around them (de Certeau, 1997).

Mckenzie Wark describes in *Gamer Theory* (2007) that "triflers", are those that focus on the rules of games and don't care about the game goals, while "cheaters" focus on the goals and don't care about the game rules (Wark, 2007). I would argue that "triflers" may lack criticality towards games and systems because of their inability to question the rules, while "cheaters" question rules, yet may lack a criticality towards consequences. In *The Five Obstructions*, Leth is closer to a "cheater" than a "trifler", testing the boundaries of Von Trier's obstructions to in order to maintain a level of quality in his films. For Leth, the consequences of cheating would appear to be minimal, conceding defeat to Von Trier, or to remake a film as Leth did after using the screen in the brothel district of Mumbai. However, the effects, rewards, or consequences of cheating can be engaged through critical discussion within the parameters of a game-based pedagogy. It is through the process of play, where one experiments with the structure of rules and questions the value of goals that a game-based pedagogy comes into focus.

This experimentation, or playing with the limitations of a game or rules, separates a game player from a game designer. In order for a game to be successful, the game designer must have an observant and critical eye towards the experience of the player. In other words, in creating rules for others to follow, the designer has to be flexible and open to the needs of the game and its players. The same can be said for creating art curriculum, where the instructor has to be flexible to the needs of the individual students, the classroom, the school, and community.

The instructions or methods of game play are particular to each game similar to a teacher's pedagogical stance of creating obstructions for their students. This pedagogical stance may be understood in art education as design problems where students are given a limited set of materials, colors, methods, or mediums to work with to complete an assignment. A creator always has limitations to what they can accomplish. By recognizing those limitations and questioning them at the same time, new ideas and innovations will occur. Through the use of obstructions, students will be able to demonstrate their ability to navigate those limitations. Game designer Eric Zimmerman notes that obstructions are not designed to stop creativity, but to push creativity into new directions (Lantz & Zimmerman, 2009). The books Flow (1991) and Creativity (1997) by the psychologist Mihaly Csikszentmihalyi delve into aspects of how artistic and scientific minds thinks and processes their work. By being able to give concentrated attention to their passions, fully immersed, being active investigators, and having lifelong curiosity, these artists and scientists interviewed showed an ability to excel in their given fields. Flow has been integrated as a concept in video game design, balancing the combination of challenges of a game to player's abilities to constantly keep the player's interest in the game but not so difficult that the player gives up (Chen,

2006). Most successful video games are designed this way (World of Warcraft, Guitar Hero, Super Mario Brothers, etc) to have easier levels early in the game, building the skills of players and providing interesting new content over time, encouraging people to continue playing the game and be fully immersed.

Pedagogy and Problem Solving

Recent research from Eliza Pitri (2002) focuses on project-based curriculum and the role of artistic play in problem solving. It is in this model that game-based pedagogy can be developed where through artistic play, aspects of problem solving, experimenting, and risk taking are used to develop students abilities to reason. In contrast, Walker's description of the Sandy Skoglund installation, the students did not know how much they could play with the installation because they did not understand the obstructions; rather they were averse to taking risk with Skoglund and collaborating with her work.

Citing Howard Gardner, Pitri (2002) claims that learning is situated, where particular features and purposes initiate them. This is like a game where the learning experience is unique to each time, place, and the people with whom the game is played with. United States football fans would recognize that each Super Bowl has unique qualities and conditions that determine the narrative and outcome every year. Pitri states that projects must have relevance to students if they are to promote deeper understanding and significant study. In Pitri's research she finds that a project-based curriculum strengthens and extends current behavioral knowledge and uses abstract representations as schema for learning are the best designed. As described earlier, Bickley-Green and Phillips study had students make projects with components of art that were significant to students like clay, photography, and video, however the obstructions given to the students were restrictive and did not promote deeper understanding of the topic of substance abuse or ways to use the art materials provided.

Game-based pedagogy performs these same functions described by Pitri by using the behavioral knowledge of games and play, combining them with the abstracted representation of what is being learned. The Situationists, a international Marxist avant-garde organization, suggested alternative life experiences that artistically united play, freedom, and critical thinking such as the dérive, a playful exploration of the environment, without following preconceived rules of how to navigate the space (Debord, 1958). Vito Acconci's Situationist *Following Piece* (1969), was a dérive-like performance structured around Acconci following people until they were out of public view, and then began following the next visible person. This performance used the structure of chance to guide the playful exploration of the city. It is through type of structured play and curricular obstructions that a game-based pedagogy can be used in the art classroom.

Through the use of obstructions we can see how a project-based curriculum can promote very different results. The obstructions that Sandy Skoglund gave the colloquium class at Ohio State were not presented as opportunities for play. Although Bickley-Green and Phillips allowed for play in their use of obstructions, the type of play described was prescriptive and limiting. Pitri's use of play as a form of problem solving that also allows for personal expression advocated in this paper. Clearly identifying obstructions as game-like challenges for students, they can be used for growth and critical awareness.

Reference

- BBC News (2005). Bjork launches celluloid comeback. *BBC News.* Retrieved February 4, 2009, from http://news.bbc.co.uk/2/hi/entertainment/4209500.stm
- Bickley-Green, C. & Phillips, P. (2003). Using visual arts and play to solve problems and foster resiliency. *Art Education*, *56*(6), 40-45.
- Bogost, I. (March 18, 2008). Persuasive games: Video game pranks. Retrieved January 28, 2009, from http://www.gamasutra.com/view/feature/3579/persuasive_games_video_game_pr anks.php?page=4
- Chen, J. (2007). Flow in games (and everything else). *Communications of the ACM*, *50*(4), 31-34.
- Chideya, F. (Producer). (2008, June 13). Using video games to get kids excited about science. [*News and notes*]. Washington D.C.: Nation Public Radio.
- Csikszentmihalyi, M. (1991). Flow. New York: Harpers Perennial.
- Csikszentmihalyi, M. (1997). *Creativity: Flow and the psychology of discovery and invention* (4th ed.). New York: Harpers Perennial.
- Debord, G. (1958). Theory of the dérive. *Internationale Situationniste*, (#2). Retrieved January 11, 2010, from http://library.nothingness.org/articles/SI/en/display/314
- de Certeau, M. (1997). *The practice of everyday life.* (S. Rendall, Trans.). Los Angeles: University of California Press. Retrieved January 11, 2010, from http://www.ubu.com/papers/de_certeau.html
- Dogma 95. Dogma 95. *Dogma 95.* Retrieved January 22, 2009, from <u>http://web.archive.org/</u> web/20080206044 310/www.dogme95.dk/menu/menuset.htm
- Dweck, C. S. (1999). *Self theories: Their role in motivation, personality, and development.* Hove: Psychology Press, Taylor and Francis Group.
- Foucault, M. (1977). *Discipline and punish*. In trans. (A. Sheridan, Trans.). New York: Pantheon.
- Super mario sales data: Historical units sold numbers for mario bros. on nes, snes, n64.... (2001). Retrieved from http://www.gamecubicle.com/features-mario-units_sold_sales.htm
- Kaufman, A. (2004). Breaking Von Trier: Jorgen Leth survives "The Five Obstructions". *Indiewire.com.* Retrieved February 7, 2009, from http://www.indiewire.com/article/breaking_von_trier_jorgen_leth_survives_the_fiv e_obstructions/
- Killed over a poker game. (1885, October 29). *The New York Times*, p. 1. Retrieved April 4, 2010, from http://query.nytimes.com/gst/abstract.html? res=9A04EEDF123FE533A2575AC2A9669D94649FD7CF

- Macnab, G. (2006, September 22). I'm a control freak but I was not in control. *The Guardian*, 5. Retrieved February 25, 2009, from http://www.guardian.co.uk/film/2006/sep/22/londonfilmfestival2006.londonfilmf estival
- Museum of Contemporary Art, Los Angeles (2002). Errata erratum. *MOCA*. Retrieved February 16, 2009, from <u>http://www.moca.org/museum/dg_detail.php?</u> <u>dgDetail=pmiller</u>
- Oxford Pocket Dictionary of Current English. game. Retrieved February 8, 2009, from http://www.encyclopedia.com/doc/10999- game.html Encyclopedia.com.
- Pitri, E. (2002). Project learning: Exploration, discussion, and discovery. *Art Education*, 55(5), 18-24.
- Tavin, K. (2008). The magical quality of aesthetics: Art education's objet a (and the New Math). *Studies in Art Education, 49* (3), 268-271.
- Salen, K., & Zimmerman, E. (2004). Rules of play. Cambridge: MIT Press.
- Von Trier, L. (Producer), Von Trier, L. & Leth J. (Directors). (2004). *The Five Obstructions* [Motion picture]. United States: Koch Lorber Films.
- Walker, R. (2007, November 25). The pretenders. *The New York Times*, Magazine. Retrieved February 28, 2009, from http://www.nytimes.com/2007/11/25/maga zine/25wwln-consumed-t.html?scp=3&sq=gu itar%20hero&st=cse
- Walker, S. (1997). Working in the black box: Meaning-making and artmaking. *Art Education*, *50*(4), 23-38.
- Wark, M. (2007). Gamer theory. Cambridge: Harvard University Press.