

Running Head: A Child's Power in Game-play

A Child's Power in Game Play

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Abstract

This paper is the first of its series that studies the power children have in game play and examines its implications for teaching and learning. As a start, the paper describes a framework of power based on a synthesis of various types of power underlined in literature. The paper then looks into the power issue through observation and interviews of one twelve-year-old boy's game-play. Several initial findings are delineated. Connections are made between the framework of power and different kinds of power that the twelve-year-old negotiates in playing games. The study sets a foundation for further research in the power issue in education.

A Child's Power in Game-play

“Especially among young people, the new media together with the erosion of old concepts of authority open the way to acute awareness of this new bondage. The young perceive that their right to say their own word has been stolen from them, and that few things are more important than the struggle to win it back.” (Shaull, 2000)

Introduction

Today's children have the world at their fingertips. This is more than a cliché, but truly speaks to the power that our young people today have in their worlds. As we watch children, we realize that the days are gone when children are at the mercy of television schedulers. Not only do they have channels that air their television shows all day, every day, but if they miss a particular episode that is important to them, they can simply use their digital video recorder or log onto the Internet and view the episode at their convenience. The days are gone when children are at the mercy of athletes. When children appreciate an athlete's abilities, but not the way in which the athlete plays with his/her teammates, the children can play the game differently with the exact same athletes through their video game console. The days are gone when children are at the mercy of big businesses such as record labels. When children enjoy an artist's song, they do not need to buy an entire album but can purchase and download individual songs. Indeed, children can create their own digital music! In essence, technology has offered children a world in which they have unprecedented power.

We are particularly interested in children's negotiation of power in their technological worlds and further how that power compares to their school worlds. With this pilot study, we examine one piece of the puzzle – a child's negotiation of power in game-play.

Literature

The concept of power has been the subject of study and theorizing for years; yet a formal

and consistent definition eludes the field (Cartwright, 1959). Typically, researchers define power for the particular research project at hand. This research is no exception due to the lack of a universal definition. We begin with a broad concept of power and then move to some important constructs that offer context to the definition. Additionally, we juxtapose power with knowledge for the particular context of this study.

Yukl (2006) defines power as “the capacity of one party (the agent) to influence another party (the target).” Similarly, Cartwright (1959) defines power as a mathematical formula that encompasses both the force with which one can influence another and the resistance that the target offers. In other words, the essence of power is the ability to convince others to do something that they may not have done without that influence. In this beginning concept, power is seen as a form of domination over another person or persons.

This concept offers a theoretical understanding of power, but in order to evaluate power in a research study, more structure is necessary. Four relevant constructs of power emerge from a review of the seminal thinkers about power, including French and Raven (1959), Weber (1978), Freire (2000) and Foucault (1980). The constructs of power include: 1) typologies of power, 2) knowledge and power, 3) power over oneself, and 4) outcomes of power attempts. By detailing these constructs, we hope to begin to piece together a holistic view of power and offer a vocabulary with which to discuss power negotiations.

Typologies of Power

There are two typologies of power that have stood the test of time and have been the basis of much research in the field, one from French and Raven (1959) and the other from Weber (1978).

French and Raven (1959) studied power and originally developed a typology of five

“especially common and important” bases of power that one party may use to influence another party. The five bases of power are *legitimate power*, *reward power*, *coercive power*, *referent power* and *expert power*. Each is described below.

When the agent has formal or cultural authority over the target, influence can stem from *legitimate power*. For example, a manager has legitimate authority to ask subordinates to carry out functions within their job description. Similarly, a principal in a school has the legitimate authority to require a teacher to use an accepted teacher's manual for lesson planning. Further, cultural norms govern adult-child relationships so that teachers can use legitimate authority in a classroom setting by being an authority figure and an adult.

An agent may have the ability to use rewards, or *reward power*, to influence the target and gain compliance. Of course, the target will continuously evaluate the probability of receiving the reward whether the agent's influence is successful or not. Over time, successfully using rewards can create a new state where the previously rewarded behavior becomes internalized. Teachers might use reward power by offering an extra recess time to students who consistently conform to the classroom behavior rules.

Seen as the opposite of reward power, *coercive power* uses threats or punishments for noncompliance. When coercion is used, the target typically has negative feelings toward the agent, such as resentment or anger. In the classroom, teachers can use coercive power by taking away recess or issuing a failing grade.

When the target seeks the approval of the agent or has strong feelings of loyalty or admiration, *referent power* is likely at play. The agent can influence the target because the target seeks to please the agent. This type of power can be seen in a classroom when one student is influenced to act in a certain manner by another student in order to be accepted.

When an agent has specific knowledge or skills, particularly unique knowledge and/or skills, it can become a source of *expert power*. A target will succumb to influence in order to obtain advice from the agent. In schools, typically teachers are viewed as having expert power. However, students may also have expert power and use it to help their peers.

Weber, an economist and sociologist, created his own typology of power, which he called authority or domination. In one of his most famous works, he designated three types of authority: *legal-rational*, *traditional*, and *charismatic* (Weber, 1978).

Legal-rational authority stems from the position or the office that the agent holds, not necessarily the agent him/herself. For example, a police officer has the authority to arrest a suspected criminal. In the classroom, this type of authority is seen in the teacher, principal, and central office personnel. *Traditional authority* extends from tradition or custom. For example, parents have traditional authority over their children. Similarly, teachers have traditional authority over students. *Charismatic authority* rests on the agent's personality or character. Targets follow the authority of this agent not because of his/her position or from a respect for tradition, but solely for the characteristics the target finds admirable in the agent. Some teachers have this type of authority because they are particularly likable and successful, thus peer teachers follow simply because of that charisma.

These two typologies appear to overlap and in fact they do. Table 1 offers a side-by-side comparison of the two typologies:

Table 1: Two typologies of power compared

French and Raven (1959)	-> Maps to ->	Weber (1978)
Legitimate Power	->	Legal-rational Authority

	->	Traditional Authority
Reward Power		
Coercive Power		
Referent Power	->	Charismatic Authority
Expert Power		

In essence, Weber's legal-rational authority and traditional authority are two types of French and Raven's legitimate power. Also, Weber identifies charismatic authority which is similar to French and Raven's referent power. The other types of power in the French and Raven typology are not addressed by Weber. Because the French and Raven typology is broader and represents more types of power, it will be the one used primarily in this paper.

Besides the above two dominant typologies, other forms of power including *information power* and *ecological power* have also been identified (Yukl, 2006). Information power is the control over information. For example, a manager might be informed of important information about upcoming layoffs before his/her subordinates. In schools, information power could stem from administration, such as the previous example of the manager, but it could also stem from important family information which could provide insights into a struggling student. Ecological power is control over the physical environment or technology. For example, a teacher typically controls the physical arrangement of a classroom. A technology lab manager in a school could control access to the computer lab. These two types of power are important additions to French and Raven's (1959) typology and thus will be included in the evaluation of power throughout the paper.

Knowledge and Power

Consistent with the French and Raven's (1959) expert power, Toffler (1990) sees power as intricately tied together with knowledge. Foucault (1980) deepens the discussion of the ties between knowledge and power. In essence, those in power are not only able to discern valuable knowledge, but also establish the rules with which true statements are separated from false statements. Foucault's view of the current society of truth is that a few organizations have the dominant control over truth. Those organizations include universities, the army and the media. In this paper, we expand Foucault's view to include not only universities, but also all schools. While the universities may have the dominant control over new truths, all schools have a significant role in perpetuating that truth and thus distributing or constricting the pool of people who have power. This connection between knowledge and power along with school's position as a regulator of that power makes this study particularly compelling and important.

Because of its close proximity to French and Raven's (1959) expert power, this connection between knowledge and power can be further explored through the current typology as a component of expert power. Finally, another seminal thinker in the realm of power, Freire (2000), wrote separately from Foucault, but both combine to offer the last component to the typology of power, power over oneself.

Power over Oneself

According to Freire (2000), power is not only that which is exerted on targets from an outside agent. Power also includes that which one exerts over oneself. Further, Foucault (1980) found the dominant theme related to power as one of authority or repression. However, he viewed that theme as only one part of the dynamics of power. Indeed, Foucault (1980) believed that power is also "a productive network which runs through the whole social body" (p. 119). He further notes that there are not places free from power. This power over oneself must be

negotiated among other aspects of power as there is no power without resistance. Essentially, power plays a relational role for Foucault. It is in the relations of any kind, such as family, work and school that power lives. Therefore, it is in our ongoing relationship with ourselves as we navigate our world that power can also live and work.

As a classroom example of Foucault's broad definition of power, consider a child in an elementary class. Much consideration is given to creating an environment that the teacher believes is conducive to learning. Students are taught to sit quietly, to raise a hand when wanting to talk, to wait until acknowledged to speak, and more. Elaborate systems have been used for classroom management such as color coded tickets in order to facilitate that environment. However, these efforts only create an environment where educators believe learning can take place. Ultimately, the child has the power to choose whether or not to learn schools' lessons. Of course, that choice to learn is the pivotal one, the one in which all educators strive to influence. And the power for that choice is completely and utterly in the hands of the child. Schlechty (2002) believes students should be viewed as volunteers in the classroom even when their attendance is compulsory. By doing so, teachers recognize that even when students are present, they must choose to engage and learn. It is this omnipresent view of power that will be of much interest during this study as we believe that the former typologies do not encompass such a vast view of power and thus may be found lacking. Further, we believe that this concept of power also extends to "relationships" in our virtual worlds. Therefore, we would recommend including *power over oneself* in any typology of power. A visual representation of the complete typology of power is included in Figure 1.

Figure 1: Typology of Power

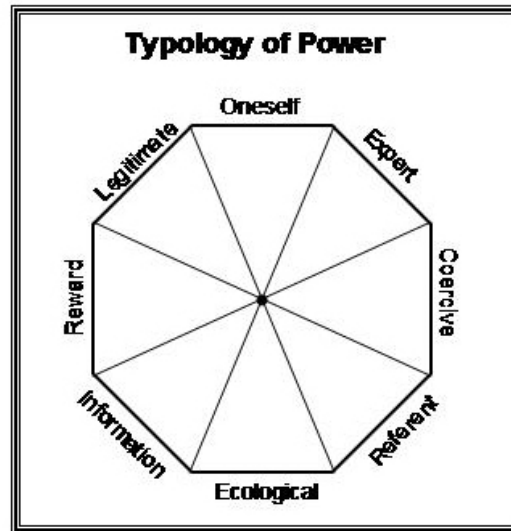


Figure 1 combines legitimate power, reward power, coercive power, referent power and expert power (French & Raven, 1959) with information power and ecological power (Yukl, 2006) and with power over oneself (Foucault, 1980). In addition to simply listing the elements, we have attempted to juxtapose the elements of the typology so that those elements opposite each other can be considered opposite ends of a spectrum or continuum. For example, power over oneself which can be considered a microcosm of power is juxtaposed against ecological power which can be exerted at a much broader scale. Further, reward power which typically entails something that is given to another is juxtaposed against coercive power which typically entails something that is taken away from someone. To visually summarize each observation in this study, each section of the octagon will be shaded to represent the amount that the particular type of power is present in the situation observed.

The typologies offered above focus on the source of the power that stems from the agent. This is of course useful in furthering our definition of power, but equally as useful is a discussion of the outcome of the attempts at power, which focuses more on the target than on the agent of power.

Outcomes of Power Attempts

When viewing the outcomes of power, the attitude or behavior of the target is viewed.

Yukl (2006) delineates three possible outcomes of any attempt to influence another:

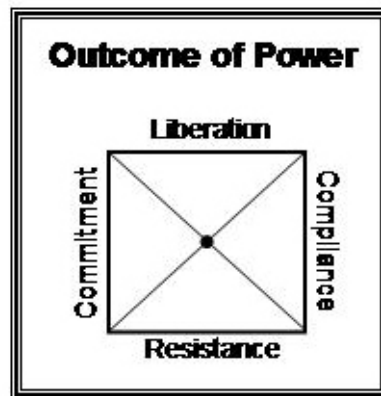
commitment, compliance and ***resistance***.

The most desirable outcome, ***commitment*** describes a situation in which the target accepts the power attempt from the agent and even internalizes a change in behavior. This change is typically long lasting, even in the absence of the agent. Commitment can stem from any type of power, but is more often a result of referent and expert power. With ***compliance***, the target performs as requested by the agent, but does so with minimal effort. The target does not internalize the change, so when not in the presence of the agent, the target may revert to previous behaviors. Typically, the target feels indifferent toward the outcome. As with commitment, compliance can result from any type of power. Finally, ***resistance*** occurs when the target actively avoids complying with a request and may even sabotage others' attempts to comply. However, resistance can also be more subtle. For example, resistance can also be identified when a target tries to persuade the agent to change the request or when the target simply delays action on the request. A teacher might be resisting a new educational innovation decreed from central office if he/she simply avoids implementing the innovation. Further, a student might be using resistance tactics if he/she does not turn in schoolwork.

Because these outcomes are based on the target's perspective, they offer additional insight into the dynamics of the power relationships. Further insight can be gleaned from Freire's (2000) discussion of the power relationships at work with illiterate peoples in South America. In this work, Freire offers another outcome of power: liberation through education. The oppressed peoples liberate themselves in their process of becoming educated.

Interestingly, in the process of liberating themselves, the oppressed also liberate the oppressors. In Freire's view, the oppressors, through their acts of oppression, have become dehumanized. Thus, the oppressors need liberation in order to become more fully human equally as much as the oppressed need liberation in order to become more fully human. Paradoxically, true liberation is not granted from the oppressors to the oppressed. True liberation must come from the oppressed for the benefit of both the oppressed and the oppressors (Freire, 2000). While Freire did not formally title his views within the constructs of the above outcomes of power, we believe that his work is important enough to contribute to a deeper understanding of power. Therefore, throughout the paper, this outcome will be entitled *liberation*. To juxtapose it with the other outcomes above, we consider liberation more desirable than commitment as it transcends the wishes, desires or requests of the agent and discerns a new reality where all voices are heard and respected. All outcomes of power are depicted in Figure 2.

Figure 2: Outcome of Power



We have created two graphics which can visually depict the power negotiations which are witnessed in that setting. These figures will be used throughout this study in order to visually assess and compare the complex power negotiations in different social settings. The first graphic was Figure 1 and included the typology of power. Figure 2 summarizes the outcomes of power

attempts. It combines commitment, compliance and resistance (Yukl, 2006) with liberation (Freire, 2000). Again, each section is juxtaposed against an outcome considered its opposite. For example, liberation which is viewed as a new jointly negotiated reality for all people is juxtaposed against resistance in which the target actively or passively resists power attempts from the agent. Also, each section of the figure will be shaded to the degree that the particular outcome of power is observed during the course of the study.

Through the context and structure offered from the typologies of power and the outcomes of power, it is now time to turn again to a synthesized definition of power. Clearly, power is dynamic (Foucault, 1980; Yukl, 2006). It is this view of power that is at once changing and static; volatile and stable; oppressive and liberating; “conditioning” and “conditioned” (Foucault, 1980) that is the heart of power. Studying power and its many dynamics, while difficult, is important for educators as it opens the door into the learner’s world and sheds light onto the ways in which our teaching methods are perceived. Further, Dewey (2001) and Vygotsky (1978) remind educators that learning is heavily steeped in a social process of which power is an important component. Thus, evaluating the power dynamics in schools and in the cultural worlds of children outside of school has the potential to lead to important insights about power, change and learning.

Pilot Study

This study is designed to begin to explore the power negotiations of children. By focusing on one child in game-play, this pilot study will begin to build a record of the complexity of children’s power negotiations and will also begin to develop awareness and an appropriate language that researchers can use when discussing this difficult concept with young people. Further research planned includes studying more children and also incorporates the school

environment. These future studies can then be constructed into an emerging theory of children's power negotiations.

Data Collection

For this study, one child was purposefully selected because of his high personal interest in game-play and his ability to discuss challenging concepts. The subject was a twelve-year-old boy, Mark (a pseudonym), who lives in a middle class suburban neighborhood. Observation and interview were used. Mark was observed and interviewed on three different occasions when he played three different games. During the observation, notes were taken, which were used to generate questions for the follow-up interviews. The observation notes included the informant's virtual moves in the game as well as his physical moves and utterances.

Interviews were held immediately after the observations and each interview lasted fifteen minutes. Questions relevant to the games and the subject's experiences of the games were asked at the interviews. All interviews were emic as they were trying to ascertain the subjective insights of the interviewee (Carspecken, 1996). The interviews generated much discussion from Mark. This mirrors our experiences in other studies when interviewing children. The children that we have interviewed generally talk quite a bit. This may be because they sense that when we are recording them, we believe their words are very important, thus they take their time to give us complete and thoughtful answers.

Setting

In order to offer context for the findings below, the following brief setting of the game-play is given for each observation. For all of the three observations, Mark had the freedom to choose the video game that he played. Mark then played the game for fifteen minutes while his virtual and physical moves and utterances were noted and recorded.

During *the first observation*, Mark played a computer based video game entitled Rise of Nations. In this game, players can choose a nation or culture to play. The overall objective of the game is to control sixty percent of the territory on the virtual map. Players begin the game in the Ancient Age and must use a variety of strategies to grow their people through the Information Age. Additionally, an enemy of the selected nation is also attempting to move into the Information Age. With each age, players or their enemies have new and important abilities such as oil production that can feed technological advances like modern cities and weapons. These also have obvious impact on the ability of the nation to control territory. With this game, Mark began by setting up several of the parameters that he preferred and selected to play as the British. He had played the game a number of times and the beginning of the game in the Ancient Age moved rather slowly for him. He moved and navigated naturally throughout the game, building farms, temples, barracks and more. He talked out loud about his strategies and many times he was singing while he played. He also talked to the computerized citizens of his cities as he clicked around. By the time the fifteen minutes was over, Mark had built and developed three cities and had researched his way into the Medieval Age.

During *the second observation*, Mark played Timez Attack. This was the first time Mark played the game. Timez Attack is a computer based game that teaches multiplication facts. In the game, a small alien needs help escaping from a dungeon. Everywhere he turns, he must solve multiplication facts to fend off monsters and escape with his life. For the first few minutes, the game seemed to intrigue Mark. Mark tried to figure out how to navigate and move his alien. He was also exploring the rhythm of the game. Again, he thought out loud. He seemed to be having fun at first with comments like, “wee!” and “ah ha, take that!” However, approximately half way through the observation period, Mark clearly lost interest in the objective of the game. He began

to try to jump off of the bridge and simply hide from the monster rather than answer the multiplication questions. In the interview, Mark indicated that he thought the game was too easy and was finding other ways to keep his interest.

For *the third observation*, Mark played a computer based game called The Sims. In this game, players create simulated people, decide on a name and personality for their person, build a house, and more. Like real people, the sims (simulated people in the game generically) must hold down a job, pay bills and work for promotions. They can also become depressed without friends, who are other neighborhood sims. Basically, this is an open-ended game where the player decides the ultimate goals of game-play. In this game, Mark “worked on” (played with) a family that consisted of a husband and wife. He directed the husband to work out on fitness equipment for his job and the wife to cook dinner. Later, he put out cookies in the hopes that Santa would visit and leave presents. The next “day” in the sim world, Mark directed the husband to go to work and the wife to be friends with a neighbor. Like previous games, Mark spoke his thoughts out loud. His remarks as well as his physical and virtual moves in his game-play were noted and recorded for the study..

Findings and Analyses

This section contains findings summarized from the observations and the follow-up interviews. All findings emerged from a grounded theory (Strauss & Corbin, 1998) evaluation of the observation and interview notes.

The First Observation and Interview: Rise of Nations

As a means to summarize visually the power negotiations seen during the first observation/interview with Rise of Nations, we have included Figure 3 which depicts the power typology and the results of power attempts delineated in the literature review. Further, we have

made an assessment of the degree to which each type or result of power was present in this scenario. The rationale for these assessments is offered in Table 2.

Figure 3: Power observed during Rise of Nations game-play

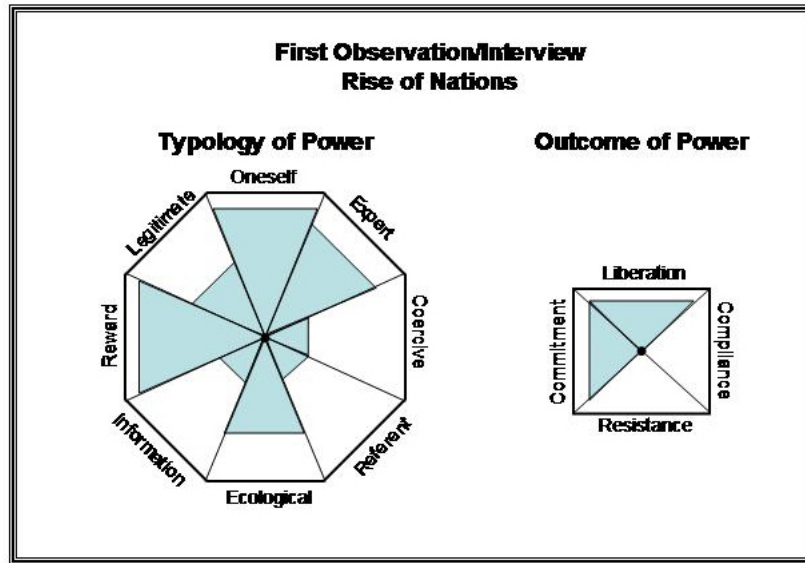


Table 2: Examples of power observed in Rise of Nations game-play

Power	Rationale
Typology of Power	
Oneself	The informant had many choices within the game.
Expert	The informant was able to discuss how the environment was not always historically accurate
Coercive	The game has certain rules which must be followed.
Referent	Not an observed factor.
Ecological	The informant has choices in the game but the game also limits some choices or offers consequences for choices.
Information	Not an observed factor.
Reward	When the informant performed certain actions, the game rewarded him by progressing through different levels.
Legitimate	Not an observed factor.
Outcome of Power	
Liberation	The informant was able to create his own way through the game, defining when and how he would proceed and "win."
Commitment	The informant demonstrated ownership in the game.
Compliance	Not an observed outcome.
Resistance	Not an observed outcome.

In this observation and interview, we noticed several factors that point to an

acknowledgement of Mark's power in this game. First, Mark took over a significant amount of ownership with the game and its outcome. Using personal and possessive words such as "my city," "my siege factory," and "my border," Mark is demonstrating that he is a part of the game itself, not just a passive observer or player. It appears that Mark feels this ownership because of the choices he is allowed to make as a routine part of the game. For example, he noted specifically many of his choices such as the difficulty level, the speed of the game and the cultures. Further, he is able to compare and contrast his game knowledge with real world knowledge. For example, in this game, Mark specifically noted that he was able to learn about different historical ages, but also that he knew that not all the information in the game was historically accurate. Finally, Mark noted that his favorite parts of the game were the sea ports and the air bases because you cannot have those at the beginning of the game, but must work for them.

Overall, these insights begin to shed light on the power negotiations within this game for this informant. The first example demonstrates Mark's level of personal investment in the game. The second example demonstrates that Mark is learning from the game, but this learning appears to possibly be different from school learning in two ways. First, the game uses an intriguing environment within which Mark can gain experience that is not possible in the classroom or in the real world. Essentially, Mark has become an expert in the perspective of history offered by this game. Bransford, Brown and Cocking (2000) posit that experts organize knowledge differently from novices and that they can ultimately gain more insights more quickly in related fields not of their expertise than can novices. Thus, Mark is using his expertise from the game to then assimilate interesting knowledge about the real world in a compare/contrast type of scenario, but importantly this knowledge is self-directed rather than other-directed. In other

words, Mark himself directs the learning rather than a teacher. Finally, Mark noted that he appreciates that he has to work for certain elements of game-play that are important to him. In essence, he is not only acquiescing part of his power to the rules of the game but he also apparently does not harbor any ill will toward those rules that sap his power. This is an interesting twist to the research that we were not expecting and one that we would like to further explore.

The Second Observation and Interview: Timez Attack

As with the previous scenario, we have summarized the observed negotiations of power noted during Timez Attack game-play within the typology of power and the outcome of power literature review categories. That summary is offered as Figure 4. We have also offered rationale of the assessments within Table 3.

Figure 4: Power observed during Timez Attack game-play

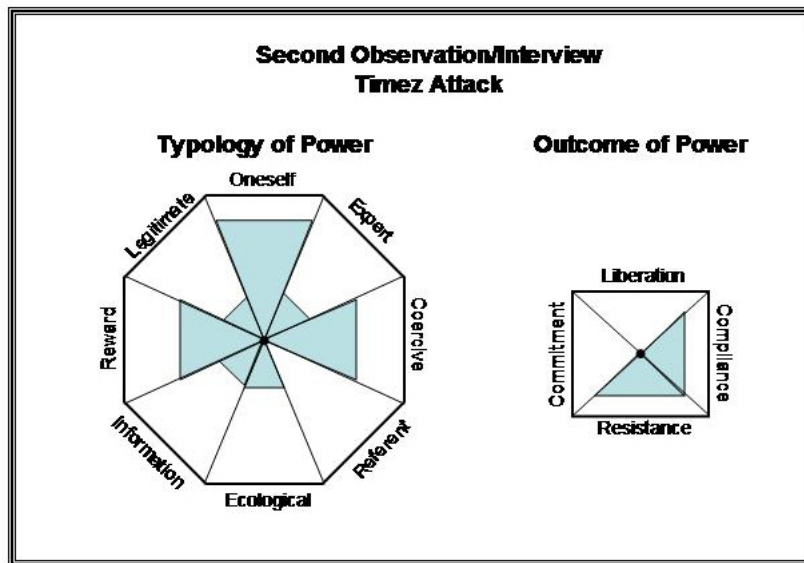


Table 3: Examples of power observed during Timez Attack game-play

Power	Rationale
Typology of Power	
Oneself	When the game did not offer the informant power over oneself, he subverted the game to maintain his power.
Expert	The informant noted that it was only when he hit the wrong keys that he made a mistake.
Coercive	The game has certain rules which must be followed.
Referent	Not an observed factor.
Ecological	The informant did not have any choices over the environment or the avatar. He did have limited choices over where he explored first within the context of the game's levels.
Information	The only information necessary was the multiplication facts.
Reward	When the informant performed certain actions, the game rewarded him by progressing through different levels.
Legitimate	Not an observed factor.
Outcome of Power	
Liberation	Not an observed outcome.
Commitment	Not an observed outcome.
Compliance	The informant continued to answer the multiplication questions even when he became bored with the game.
Resistance	The informant hid from the monster and tried to jump off a bridge.

Two themes from this observation and interview recurred from the first observation and interview. First, Mark became a part of the game. At one point when his avatar (virtual representation in a game) was hit by a monster, he said “ouch.” Later, during the interview the researcher asked him why he said ouch when he clearly was not physically hurt. Mark answered that “what they [game designers] try and do is make you feel like you are that person” and that they were successful in doing so. In fact, Mark would move his head when he turned his avatar in the game, further demonstrating that he felt a part of the game. The second recurring theme between the two observation and interviews was that power came from choices. One of the aspects of this game that Mark did not like was the lack of choices. He specifically noted that he wanted more options to create an avatar of his own and also wanted more virtual worlds to explore. He also noted that he strongly preferred Rise of Nations to Timez Attack specifically because of the choices offered by Rise of Nations.

Two additional themes were noted in the second observation and interview. First, Mark was quite intense during the first few minutes of game-play because he had never played this game before. However, he quickly identified the pattern of the game. Specifically, he noted that “It always asks like the same question. You could kind of tell when this kind of problem was coming up. It was only when your fingers hit the wrong buttons is when you messed up.” He further noted that “It was way too easy so it is not really fun when it is easy.” This statement succinctly summarizes Papert's (2002) “hard fun” in which he posits that students consider games fun because they are hard and challenging as long as they are also interesting. With an easily identifiable pattern, this game was not hard, challenging, interesting or fun to the informant. Further, Mark had little power to make the game more challenging or interesting with his own choices. The second theme also emerged when the game became uninteresting to Mark so he created his own interest by exploring the world and his powers in the world. Specifically, Mark was tired of answering multiplication problems in a virtual flashcard environment so he took his avatar to a bridge to see if he could jump off and what would happen if he did jump off. Gee (2003) discusses the importance of exploration in any video game and its connection to learning. In this situation, we believe that the exploration might point to the fact that the narrow game-play was limiting the Mark's power. Mark regained his own power by creating some game-play that was not a part of the game scenario.

The Third Observation and Interview: The Sims

Again, we have summarized the power negotiations observed during The Sims game-play using Figure 5. We have further offered rationale for those assessments in Table 4.

Figure 5: Power observed during The Sims game-play

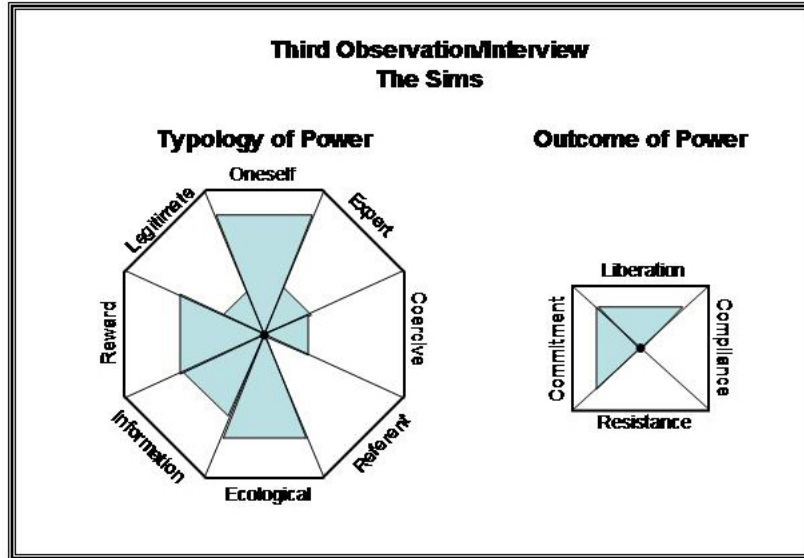


Table 4: Examples of power observed during The Sims game-play

Power	Rationale
Typology of Power	
Oneself	The informant had many choices within the game.
Expert	Not an observed factor.
Coercive	The game has certain rules which must be followed but the informant has many choices.
Referent	Not an observed factor.
Ecological	The informant noted that he could build any house and did not have to choose between the ones offered by the game. He similarly noted the ability to create characters.
Information	The informant believed he had information about how the game behaved when he set out cookies for Santa. The game did not react as he predicted.
Reward	The sims can become happy or depressed depending on the informant's actions.
Legitimate	Not an observed factor.
Outcome of Power	
Liberation	The informant was able to define his own goals in the game.
Commitment	The informant demonstrated ownership in the game.
Compliance	Not an observed outcome.
Resistance	Not an observed outcome.

Similar to the previous two observations and interviews, Mark became part of the game, but this time was slightly different. In this game, Mark took on the role of benevolent god taking care of his people. For example, during the interview Mark was asked what was important for him to do during game-play. He said, “I had to make sure my little peoples are nice, cozy, have a

home, have money, have a job, have servos, have friends, have parties, make sure they stay friends, and all of that stuff.” Also, at one point during the observation, he said to one of the sims, “No, you are not going to do that. Umm... why don’t you work out?” Another time, he said, “Alright he needs to be in bed soon.” Note that these examples during the observation were second and third person references to the sims rather than first person talk such as in Rise of Nations and Timez Attack. Clearly, Timez Attack is a different game from Rise of Nations and The Sims because it has only one main character. Therefore, it is clear why Mark made that distinction. However, both Rise of Nations and The Sims have multiple characters, yet only The Sims evoked the more detached second and third person talk. Perhaps this is because the characters within Rise of Nations are generic and not even named. For example, each is a “citizen” or “scholar.” The characters in The Sims are named by the player and have personalities which are established by the player. That fact may make The Sims characters seem more separate from the player and thus elevate the player to god-like status of control.

Another theme common to the previous observations and interviews was choice. Mark noted that this game is “fun because you get to create your own characters, you get to create your own families, you get to create your own houses and landscapes. It’s not like you have to ‘okay I like this house. Okay buy it. Okay I tell you to do this.’ You get to choose your family, you get build your house, you get to choose your lot, you get to choose your landscape, you get to choose if you want a pool or not, you get to choose how many floors you get. It’s cool.” He also noted that his favorite part was creating the characters because he could “do my own personality in it.” Clearly, this theme of choice is strongly related to the power that Mark feels over the environment.

Two additional points seemed salient in the third observation and interview that did not

come up in the previous ones. First, Mark spent some time during the interview talking about games he likes to play, noting that he is “kind of picky” about the games he plays. He noted that he makes the decisions about the games based on his tastes, not the desires of others.

Specifically, he said, “I don’t really go by ratings. I like to play the game once or twice and then if I like it, I usually play it more, buy it or something.” In other words, the opinions of outsiders (raters) are not as valuable to him as his own experience even if those outsiders are considered experts. He trusts the experience he has to judge the merit of a game and does not feel it necessary to share the power of that decision with others.

Finally, in one instance the game did not respond as he thought it would but he rested sole responsibility on himself rather than externally on the game. Specifically, in this game if one places cookies out by the fireplace and Christmas tree, Santa will come that night and leave presents for the sims. Mark had the fireplace and the Christmas tree and he placed the cookies out. He waited expectantly for Santa, who never came. Interestingly, he attributed Santa’s absence to his own confusion rather than the game. Here is a short excerpt from the interview:

Mark: I tried to get Santa to come.

Researcher: What do you think happened with that?

Mark: I don’t think I put the cookies out at the right time.

Researcher: So, when did you put the cookies out and when would it be the right time?

Mark: I think I put it out at 9 and so I think it would be 8.

Researcher: Okay, so Santa only comes if you put them out before 8:00?

Mark: Yeah.

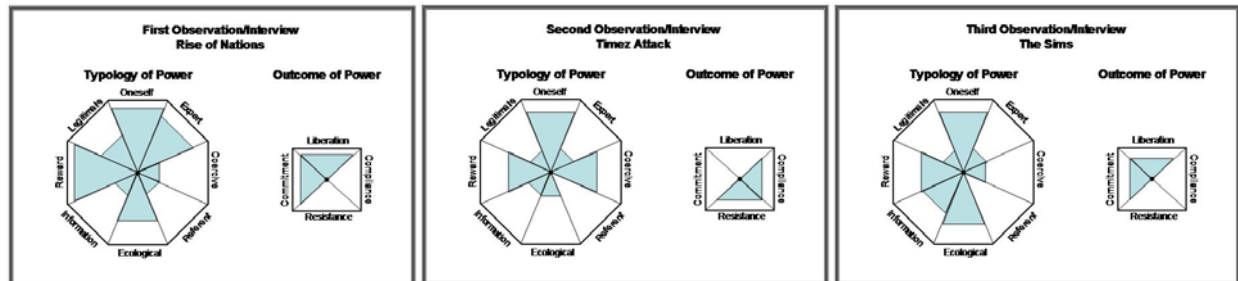
While this game has a number of surprises built into it, Mark accepted full responsibility for Santa being absent. Clearly, Mark felt a high internal locus of control.

Discussion and Implications

To begin the process of synthesizing all three interviews, Figure 6 is a side-by-side comparison of the graphical summaries of each observation/interview, specifically, Figures 3, 4

and 5 respectively. In this limited and preliminary study, we found one major difference between all of the observation/interviews and one major similarity.

Figure 6: Power Displays in all Observations and Interviews



The outcomes of power graphics across these observations and interviews can assist in quickly identifying the major differences. . For instance, the outcomes of both Rise of Nations and The Sims are liberation and commitment while Timez Attack shares neither of those outcomes and instead engenders compliance and even resistance. Thus, something is clearly different in Timez Attack. With the knowledge that Timez Attack is different from the other two, what elements of the typology of power do Rise of Nations and The Sims share that are different in Timez Attack? The main difference is in ecological power. In Rise of Nations and The Sims, the subject Mark perceived significant power over the environment. However, with Timez Attack, Mark viewed his ecological power as significantly limited. This finding could have significant implications for settings such as schools where the environment is not easily manipulated, even by teachers.

A similarity between all of the observations and interviews is that Mark negotiated power over himself in all situations. Because the situations were all video games, this similarity could be a function of the gaming environment. Thus, more research is needed in this area to identify if children actually perceive their powers over themselves in other environments.

Overall, we found several areas from which more research would offer additional

insights. First, when Mark was playing Timez Attack and the game did not offer him enough power, he subverted the game and took power by doing things that were not part of the game itself such as jumping off of a bridge or hiding from the monster. If this theme recurs in other studies, it could have significant implications for school. Clearly, this type of behavior in a classroom would be labeled disruptive. Students are expected follow a teacher's instructions even when work is uninteresting. Yet in a game setting, this type of exploration is typically rewarded (Gee, 2003).

Another area of interest for the next step of the study is the roles that Mark played during game-play. For example, the characters in *The Sims* seem more separate from the player and thus elevate the player to god-like status of control. This role was clearly powerful to Mark. Other game-play observations from this study did not specifically invoke a role from Mark. Thus, this will be an interesting area to explore more fully in future research.

A third area of interest that emerged during this study was that Mark found himself to be the expert on game-play. He specifically noted that he trusted his own opinion on games more than the opinions of the raters. In other words, the opinions of outsiders (raters) are not as valuable to him as his own experience even if those outsiders are considered experts. He trusts the experience he has to judge the merit of a game and does not feel it necessary to share the power of that decision with others. We believe that this might also be another area of interest to explore more fully as the definition of expert might have new meaning for today's young people.

Another area of interest is Mark's acquiescence of power to *Rise of Nations*. In the interview, Mark noted that he had to work for the air bases and sea ports but that those were his favorite parts of the game. This willing acquiescence of power is an important concept to study, particularly for educators. Teachers have certain topics that must be covered. Thus,

understanding the circumstances that foster willing acquiescence of power could be crucial in engaging more students in learning.

Finally, while playing *The Sims*, Mark interpreted Santa's noncompliance as an issue with the way he played the game. He did not directly blame the game for cheating him out of Santa's presence or decide that the game was broken because it did not respond as he planned. Could this be the type of ownership and internal locus of control that we hope for in education? Could power negotiations be a key to enhancing and encouraging those feelings? These are questions we would like to further explore during future research.

Not only did we find areas where more research could uncover insights or surprises, but we also believe that the typologies and outcomes of power noted in the literature review could be further refined for education and for children. We plan to continue to refine the visual summary in future research as a means to compare power negotiations in different settings. Finally, we believe the connection between knowledge and power is an important one that will more fully reveal itself after study in the school setting. We believe this aspect of power is essential for a holistic evaluation of children's power negotiations.

Limitations

Obviously this study was small and limited in its scope. In this study, we have used only one subject and restricted our view to one subject's technological world of game-play. We believe these restrictions are appropriate as we work to explore an area that is new. However, it is certainly premature to begin to extrapolate the findings of this study into a theory or to generalize them to other children or other settings.

Further, the topic of interest influenced the interviews. It is a topic that is a stretch for children as their vocabulary is not yet to the point of having discussions of this type. When we

first asked children about their perceptions of power several months ago, they started discussing concepts like bullying. Thus, we had to approach the interviewing from a different trajectory to uncover their perceptions using language that is appropriate for them. We also have assumptions about the topic. We believe that children have vast abilities to exercise and negotiate power in their technological worlds and that this has implications for their school world. These assumptions likely influenced the interviews, at least from the perspective of the questions that we asked and the notions that we probed. However, because we are at an exploratory stage in the research, we believe that we were very open to what the subject had to say in all of the interviews.

Conclusion

In summary, we believe that children's power negotiation is an area of study that has received little attention yet could offer significant insights for educators. When educators understand children and their social worlds, they can more readily identify with them. They can also assist children in translating knowledge from something abstract into something meaningful through the children's cultural and social lenses. Vygotsky (1978) understood the importance of the social and cultural dynamics for learning. Further, Papert (1993) noted that learning should include work that is personally meaningful to children. By understanding the current cultural worlds of children today, which is heavily steeped in game-play, and the social negotiations of power within children's worlds, educators are better equipped to guide students' learning and to create work that students find meaningful.

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