

WHEN THE SIMS™ GET REAL: AN ANALYSIS OF HOW DIGITAL PLAY SPACES PROMOTE LEARNING IN LOW-INCOME, DIVERSE COMMUNITIES

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ABSTRACT

This paper examines how low-income, pre-adolescents in a multicultural setting appropriate the popular computer game, The Sims™, for their own learning, social and sense-making activities. The paper documents a variety of educative moments that the children experienced in playing and reflecting about the game and its design. It also suggests features of the game's design that might be enhanced to further promote self-discovery, cultural understanding and serendipitous learning.

THE PLAYERS

“I swear to God if he don’t kiss his wife in the mornin’, I’m gonna have to smack him,” Sammie mouthed to the computer screen.[a]. The children around her giggled.

“She make her people kiss a lot,” Jamie interjected.

It was true. In the days I’d been observing Sammie (Samantha) as she played The Sims™, she frenetically maneuvered her characters. They raced around the house—kissing, complimenting, sometimes slapping each other; showering; dancing; working out; playing on the computer and on the mechanical bull; reading; starting fires; and generally making things happen.

Sammie’s “people” rarely got a chance to sleep, and even then, she would move the bed from beneath them—exploring whether they could still sleep and if their dreams changed when they didn’t have a bed below. “Look,” she shrieked, “they can sleep on air!”

In her preoccupation with the movement of life, Sammie sometimes neglected other things in her Sim homes. Jamie was quick to admonish the chaos in her household: “Your house is dirty,” he scolded. “You got flies. See ‘em over there.” He pointed to the kitchen table in Sammie’s simulated home, where a little swarm of flies had appeared over a stack of dirty dishes. (Dirty dishes are created when characters eat. In the simulation, they must be washed or they’ll remain dirty and attract pests.)

a The names of the young people in this article have been changed to preserve their anonymity.

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Jamie, who was equally captivated by the environment, played a little differently. His people led orderly lives and conducted their relationships calmly.

Jamie built gargantuan homes and furnished them meticulously. His bathrooms, in particular, were capacious with 25 toilets in each and generally more than one bathtub. When asked how he made decisions about what rooms to build first and how to furnish them, Jamie said that he looked at his people's needs [b]. He built and furnished rooms so that their most immediate needs would be satisfied first and completely.

Jamie and Sammie participate in one of Computer for Youth's programs [c] in the East Harlem section of New York City, and I have known them for over a year. They are both 12 years old and ethnically mixed (African-American and Latino). Both spend most of their time in households with large extended families (cousins and siblings) in which maternal grandmothers serve as the primary care givers. Both are active, bright, inquisitive children.

Their community, East Harlem, is typical of low-income neighborhoods across the United States—characterized by low education levels and high unemployment. In 1999, East Harlem ranked as one of New York's "three highest-risk community districts" by the Citizen's Committee for Children, a local advocacy group. Almost 40% of households earn under \$10,000 per year (compared to 20% citywide), and the unemployment rate for adults in East Harlem hovers around 14%.

Along with approximately 300 other middle school students in East Harlem, Sammie and Jamie received home computers and family technology training from CFY during the 2000-2001 school year. The two also participated in a special design "class" that CFY conducted in collaboration with a neighborhood-based community technology center.

Over a six-week period of time during the spring of 2001, I observed Sammie, Jamie and a handful of other young people as they played The Sims™ and a few other web-based games at the East Harlem Community Center. The Center is operated by the Children's Aid Society.

b The Sims™ specifies eight types of character needs: hunger, comfort, hygiene, bladder, energy, fun, social, and room. Character needs must be satisfied or the characters will collapse and could possibly "die."

c Computers for Youth (CFY) is a NYC-based non-profit that places computers in the homes of underserved children and families and helps them acquire the skills to use technology as a tool for educational and economic growth. For more information, please see www.cfy.org.

THE PLAY SPACE

THE GAME

The Sims™ is a digital play space created by EA Games. It is advertised as a “people simulator,”^d [1, 2, 3] with the following description in its instruction manual:

The Sims is a full-blown world, but one that is intimate rather than expansive. It's a world of your own handiwork... However, you're much more than merely an observer, watching the myriad details occurring moment-by-moment in a household, and in a neighborhood... You create the very electronic marrow of these beings [your Sims characters], assign subtle personality traits, and set them in a home of your own design.

While The Sims™ might not have explicit objectives, its players are quick to assign them. Jamie, for instance, explained that the purpose of the game was to “live a normal life.” In trying to live normally, he focused on creating a comfortable, well-decorated home, on meeting the physical and emotional needs of his characters, and on creating a calm pace in his environment, i.e., faithfully sending his adults to work and his children to school on time.

Sammie, in contrast, likened the play process to “directing a movie.” In such, she tried to create as much drama and action as possible, to surprise even herself. Sammie spent less time crafting her Sim homes, but added a multitude of gadgets—including computers, a mechanical bull, pool table, weight room, a train set, and a teleporter. Sammie by-passed the game’s requirement that adult characters go to work (they must earn money to finance their building and purchasing habits), by furiously typing in “cheat codes.” She found these cheat codes on the Internet.

That The Sims™ can accommodate such different play styles and preferences attests to the flexibility of its design and the complexity of its back-end programming. Within the game, players control no fewer than six key variables in the game, creating innumerable variations in the possibilities for play. The variables that players set include:

- ❖ Physical features of characters: Players select the sex, age (adult or child) skin color (white, light brown or dark brown), body type, and clothing style of their characters.
- ❖ Personality properties of characters: Players designate their characters’ personalities along five dimensions—neatness, activeness, extroversion, playfulness, and niceness.

d The nomenclature of digital play spaces is currently in flux, as designers of both the entertaining and educational aspects of these media struggle to identify the key characteristics of different types of computer “games.” For instance, professional game designer Greg Costikyan [2] argues that Sims-style environments are “toys” rather than “games.” He indicates that this is so, because these spaces do not have implicit objectives, goals, or victory conditions. Cognitive psychologist, Lloyd Rieber [3], on the other hand, suggests that simulations are characterized by their fidelity to specific knowledge or process domains, e.g., flight simulators. In such, he, too, might object to the identification of The Sims™ as a simulation. For the purposes of this paper, The Sims™ will be referred to both as a simulation and a computer game.

- ❖ Careers of characters: Players select career paths for their adult characters and move up within them. The ten pre-set career paths in this simulation are defined along six dimensions—cooking, mechanical, charisma, body, logic, and creativity.
- ❖ Behavioral interactions between characters: Players instruct their characters to interact with each other in a number of ways, e.g., kissing, complimenting, dancing, giving back rubs, conversing, and slapping. These interactions determine to what extent characters get along with each other. (The quality of relationships between characters is designated by numerical ratings and emot-icons such as smiley faces and hearts.)
- ❖ Interactions between characters and objects in the environment: Players direct their characters to play computer games, answer the phone, work out with weights, read books, etc.
- ❖ Physical characteristics of character’s homes: Players “build” houses—specifying the placement, size, and décor, and upkeep of rooms.

Despite the extent of their control in establishing the nature of characters and the terms of play, the children are quick to recognize that the simulation is also governed by a set of rules. These rules determine when characters display their needs, how they “feel” towards each other, and what they will and won’t put up with. The simulation also creates both random and systematic challenges (such as floods, fires, and burglaries) that the children seem to relish. They look forward to these surprises proffered by the game itself.

THE PLAYROOM

The computer lab at the East Harlem Community Center has nine PC computers, each connected to the Internet via DSL. Typically, nine to 14 young people congregate in the room during open lab time on Friday afternoons. They range in age from ten to 17, and about one third of them are female. All of the youth play computer games during free lab time; they also IM, e-mail, and occasionally work on homework or Center projects. One computer teacher supervises them during this time.

That these young people are playing computer games in an inherently social setting is not trivial. One might argue that playing in a room full of others, rather than alone at a home computer, highly determines the nature and quality of the play/learning experience. There is merit to this statement. However, I contend that home computer use, particularly among lower-income children and families, is rarely done in isolation.

CFY’s research suggests that using the computer to play computer games and browse the web often brings families together (Tsikalas, Stock, and Gross, in progress). When asked on surveys and in interviews how having a home computer has made a difference in the lives of their families, participants in CFY’s program often state the computer has helped them talk to each other more. Some of the middle school students have even described how they discuss game playing with family members. For instance, one seventh-grade female explained that her father taught her logic using one of his favorite computer games, Minesweeper.

LEARNING WITH THE SIMS™

QUALITY OF ENGAGEMENT

In watching the young people in East Harlem play The Sims™, I was consistently struck by the degree to which they were engaged with the game. Their behavior differed from the ways I had observed them using other computer applications such as PowerPoint, KidPics, and certain web-based sports and action games. When using these other applications, the young people rapidly toggled between different application windows. For instance, in the middle of a move at the pool table, chessboard, or basketball game, they might quickly switch windows to chat with a buddy or to respond to an e-mail. When the children played The Sims™, they did not switch windows; they focused solely on the game. They were absorbed in imaginative play.^e

However, by no means, did they sit like zombies staring at the monitor and blankly typing in codes and commands. The young people were physically engaged with the game. They talked back and gestured to characters on the screen (e.g., Sammie: “She best not be talking to my man!”). They vocalized imagined dialogues between characters and expressed astonishment, will-power, and creative license as they built, controlled and watched their people interact in the environments that they, themselves, had constructed.

The children also interacted with each other. They laughed at vocalizations, teased each other about the families and homes that they had built, and asked questions about operating the game (e.g., Jose: “Melvin, why all these people on my lawn? I didn’t put them there.”).

A high degree of engagement is one of the defining characteristics of play and digital play in particular. Prensky [4, p.144] explains that at least in digital games-based settings, these elevated levels of engagement are due to the fact that games provide: enjoyment and pleasure; intense and passionate involvement; action; creativity; social groups; and emotion. It is this quality of engagement in digital play spaces that also seems to render them rich environments for social and emotional development.

SOCIO-EMOTIONAL DEVELOPMENT

Popular sentiment has raised concerns about the effects of computing (specifically, playing computer games) on children’s social development and their ability to create and sustain social relationships. Some research, for instance, suggests that spending more time on the computer leads to increased isolation [5, 6]. Other studies have indicated that repeatedly playing violent computer games may lead to increased aggressiveness and hostility among children and may desensitize them to violence [7, 8].

There are certainly opportunities for violence within The Sims™. Sammie, for example, admitted that she sometimes allowed her characters to do dangerous things to see what would happen. Her friend Marcus concurred—describing that he once blockaded a character in a room with bookcases and then set the room afire to see what would happen.

e Play theorist, Brian Sutton-Smith, maintains that play (both in adults and children) clusters around four central themes: Play as progress, as power, as fantasy, and as self (Pellegrini, 1995). Imaginative play, which frees the mind to expand one’s possibilities for behavior and thought, falls squarely within the theme of play as fantasy.

Though it would be a stretch to suggest that The Sims™ promotes violence [f], what *does* the game do for the socio-emotional development of young people?

“Playing Out” Interpersonal Problems and Solutions. In one of our play sessions, Sammie peopled her Sim home with a family of three—a father, a mother, and a little girl. The following conversation occurred as she directed the three characters:

Sammie: The dad, he don’t get along with his daughter.

Interviewer: So, what do you do to give the dad a better relationship with his daughter?

Sammie: I don’t know. I was going to tell him to slap her, but I don’t want to.

Child psychologists have long enlisted imaginative play in the therapeutic process for children who are troubled, traumatized, disruptive, socially delayed, or simply unable to successfully participate in academic activities [9]. Typically, play therapy involves a suite of manipulatives (e.g., hand puppets; dolls, clay with which to create characters, etc.) and the gentle guidance of a trained professional. The knowledge and expertise of the therapist is key in helping young people effectively reflect upon and resolve their inner conflicts and concerns.

In observing some of the children in East Harlem playing The Sims™, I would argue that they are engaging in a form of play therapy. They are working through their own difficulties and dilemmas—employing different strategies for resolution and examining their consequences. Though these children do not benefit from the presence of a therapist, they do benefit from a self-appointed cast of characters that appear to re-act on their own and to possess the needs and personality characteristics of real people. This approximation of reality provides a safe arena for behavioral experimentation.

Identity Development. The young people in my East Harlem playgroup constructed multiple homes and peopled them with different constellations of characters. For instance, Jamie built one home for a single father and son; additional homes for couples without children; and some homes for only one male character. All of Jamie’s characters were brown or black, and one of the characters (always an adult) was named Jamie.

Sammie, on the other hand, created couples, families with one child, families of all-female friends, and families of female-male friends. Most of Sammie’s characters were brown or black, but some were white. Like Jamie, Sammie always named one character after herself; generally this character was an adult. In one instance, she created two females in the same household with her name—Sammantha (with two ms) and Samantha (with one m). She bestowed them with different personalities and directed them to compete for a boyfriend. (Inadvertently, Sammie had created an ingenious twist on the win-win strategy: Either way she won the boyfriend.)

In the East Harlem playgroup, none of the young people created families consisting solely of children; and only one child created a family that resembled the structure of his own family.

f The Sims™ is rated by the Entertainment Software Ratings Board (ESRB) as containing “comic mischief, mature sexual themes, and mild animated violence.” It does not contain realistic violence or any blood and gore. For a description of the criteria used by ESRB to rate computer games, visit www.esrb.org/rating.html.

Turkle [10] has written extensively on how young adults use computing and the Internet to try on alternate identities and to interact with others as these alternate selves. The pre-teens in East Harlem appeared to do some of the same through The Sims™.

Anger Management. Though it was not mentioned directly by the young people in the East Harlem playgroup, other research by Computers for Youth indicates that low-income, urban adolescents may use computer games to manage their anger and boredom. In focus group interviews with middle school students, both girls and boys reported playing games (such as The Sims™) when they were mad at their parents or siblings or simply when they were bored [11].

Socialization to Cultural Norms. Sutton-Smith and other play theorists observe that play activities are always imbued with the prevailing values and themes of the culture in which they are designed. Games and play are laden with ideas about rationality, gender, love, and materialism. This is also true for computer games.

When the young people in East Harlem were asked what they learned from playing The Sims™, they most immediately noted habits of cleanliness and punctuality (getting their characters to work or to school on time). When probed further, though, the children mentioned other values that they implicitly understood, and that, in some cases, conflicted with their own experiences:

- Interviewer:* *So, what do you get out of playing this game?*
- Jamie:* *Sometimes you learn what they do that you can do in your house.*
- Interviewer:* *Like what?*
- Jamie:* *Cleaning... cleaning up things, not leaving it on the floor or something...*
- Sammie:* *Or hiring a maid.*
- Interviewer:* *What do you think about that—hiring a maid?*
- Sammie:* *Very realistic.*
- Interviewer:* *Is it?*
- Sammie:* *Yeah.*
- Interviewer:* *So, what do you learn, Sammie?*
- Sammie:* *They have all the things we can't have.*

The modern cultural value of consumption pervades most media; computer games are not exempt. In Sammie's comment, though, is an expression that certain objects, services, and experiences are unquestionably desirable and simply off-limits to her. Without external guidance, Sammie might never reflect on whether owning a mechanical bull, a house with three hot tubs, or a home gym is truly desirable. In constructing their Sim homes, the children in East Harlem seemed to build atop a basic assumption that bigger is better, and more is definitely better. They did not question or test this assumption.

Similarly, the value of youth permeates The Sims™. Though the game offers a choice of body types for characters, most appear young and fit. Certainly, none of the characters look like Sammie's grandma or other members of her family. This might, again, reinforce the idea that her life is lacking in some way.

VERBAL FLUENCY

Closely related to the development of social skills is the development of communicative skills. Singer [12 in 13] maintains that imaginative play promotes verbal fluency by giving children the opportunity to practice developing their own narratives. He also suggests that hearing themselves vocalize dialogues and stories encourages them to correct errors in logic, etc.

The young people in my East Harlem playgroup chattered constantly while playing The Sims™ as well as most other computer games. It was not clear that all of them developed narratives aloud, though some certainly did. Additional measures would be needed to establish whether they experienced improvements in verbal fluency as a result of playing The Sims™.

VISUAL INTELLIGENCE

Research has categorically established that playing computer and videogames improves children's visiospatial skills. Subrahmanyam et al. (2001) summarize a number of studies which demonstrate that playing computer games enhance visual processing skills in children, including visual attention, visual processing speeds, the ability to represent systems iconically, and the ability to manipulate objects or mental images of objects through space.

Prensky [4] takes the thinking a step further and asserts that the minds of today's young people are qualitatively different than those of previous generations. He argues that in previous generations, graphics were generally supplemental to text (e.g., as illustrations), but that young people today process images as primary sources of information. They look for meaning first in the images.

In playing The Sims™, the East Harlem pre-teens displayed fine-tuned visual attentiveness and were able to keep track of everything that was happening in the environments they built. They also exhibited great facility in spatial manipulation. For instance, in building and furnishing the rooms in their homes, they selected furniture pieces of the appropriate size and rapidly rotated them to fit tight spaces. They quickly identified how much and what shape space was available in a room and, with ease, manipulated furniture so that it would fit in the space.

PATTERN RECOGNITION AND RULE DISCOVERY

The children I observed in East Harlem did not read the instruction manual for The Sims™ (as I did), and they did not sit through the animated tutorial. They immediately immersed themselves in play, assuming that they would figure out the rules as they went along.

Because of their innate responsiveness (their mechanisms for immediate feedback), digital play environments seem to provoke young people to search for and discover patterns and rules. Psychologist Patricia Greenfield observes that "the process of making observations, formulating hypotheses and figuring out the rules governing the behavior of a dynamic representation is basically the cognitive process of *inductive discovery*... the thought process behind scientific thinking" [4, p. 45].

Sammie, Jamie and their peers demonstrated enormous sensitivity to the rules of The Sims™. As mentioned previously, Jamie quickly discovered that his characters had needs that manifested themselves in a certain sequence in the game. To "keep them happy," Jamie (who was very studied in his design decisions) built and furnished rooms in the order they were needed. For instance, he built the bathroom

and kitchen before the bedroom, because he knew his “people” would need to go to the bathroom and to eat before they needed sleep.

Similarly, Sammie probed the underlying rules of the game. The following conversation occurred when she was selecting physical attributes for her characters:

Sammie: Aw, he look kinda funny like that. Look! Look! Yo! They got the ugliest things for black people.

Jose: Yeah, that is so wrong.

Sammie: I can't even get the baggy pants no more.

Sammie: You have to be like this [pointing to the brown-skinned character] to get the baggy pants... The black guy, he get these skinny-butt clothes.

Data analysis is a central theme of national standards for middle school mathematics. In particular, students are expected to “develop inferences and predictions based on data.”^[g] As Sammie flipped back and forth through options of dress for her “people,” she performed an on-the-spot analysis of visual data. She examined the clothing styles that were made available through The Sims™ based on the skin color of her characters. Though she did not use the technical jargon (e.g., independent and dependent variables), Sammie, began to directly experience these sophisticated concepts through her play.

g See <http://standards.nctm.org/document/chapter6/data.htm> for the *Principles and Standards for School Mathematics* of the National Council of Teachers of Mathematics (NCTM).

THE ART OF REFLECTION

Reflection (pausing, thinking about and articulating what has happened in a game, choices that have been made, consequences of these choices, etc.) is necessary in order for children to consciously learn from their play and to transfer the knowledge that they have acquired. Critics of computer games suggest that the rapid-fire stimulation of these environments diminishes children's attention spans and discourages both reflection and critical thinking.

Within my East Harlem playgroup, reflection was most evident in the way that the young people compared and contrasted the structure and content of their play. They regularly looked at other children's constructions and watched as others played the game.

For example, at one point in his play, Jamie blurted out: "Do you want to see the bestest house?" He proceeded to show me a home that was designed by an older student at the Center. When asked what made this house the best, Jamie replied that it had multiple stories, coordinated interior decorations, and that the owner had earned enough money to acquire a teleporter. Jamie had looked at most of the homes that children in the Center had built. He had assessed the features that were most important to him and had established a set of criteria for a "good" home. Jamie had, most definitely, exercised skills of reflection in his play of *The Sims*TM.

ENHANCING DESIGN FEATURES OF DIGITAL PLAY SPACES TO FURTHER PROMOTE LEARNING AND DISCOVERY

Sutton-Smith warns of the dangers of "domesticating" play and urges parents and teachers to resist the temptation to control and structure children's play (Pelligrini, 1995, p. 166) lest they diminish the impact and importance of playfulness. Prensky [4], on the other hand, advocates the explicit use of game structures for teaching and learning.

I believe that it is possible to maintain the pleasurable, flow-state characteristic of play while at the same time encouraging certain cognitive processes and enabling the serendipitous discovery of knowledge. In the following paragraphs, I outline some possibilities for enhancing digital play spaces to improve the possibilities for learning and reflection. While I discuss these in the context of *The Sims*TM, many are also applicable to other environments. See also Bos [14] for a discussion of how *Simcity*-like games may be adapted for classroom learning.

Additionally, the games themselves comprise only one aspect of the experience. Another critical aspect is the context of play—both the social and educative contexts. While I do not address context in this discussion, it is certain worthy of further consideration and design.

Expand the range of character types available. Digital designers would be wise to take a few tips from play therapists. Computer play environments enable much richer intra- and interpersonal exploration when they include a variety of character types that reflect children's everyday experience. Specifically in *The Sims*TM, it would be useful for designers to add senior citizens (not just young looking characters with gray hair), overweight characters, characters with physical disabilities, and pets.

Build functionalities that allow players to capture and script moments of game play. *The Sims*TM does include a photo album feature through which players may take "pictures" of their characters and

homes. Extending this feature a bit further might go a long way in promoting both reflection and verbal competencies. Given the preferences of the children I observed, I would suggest that designers add something akin to a comic strip creator. Using this feature, players can capture, print and actually type in dialogue or thoughts between their characters.

Increase opportunities for mathematical experiences in play. Presently, the primary mathematical experience in The Sims™ is that of managing money. Players earn and are provided with a certain amount of money and have to use it in a measured way to obtain the furnishings they desire for their homes. The children I observed did not pay much attention to money accrual or budgeting in their play. They simply acquired cheat codes from the Internet and typed them in as quickly as possible, so their supply of cash was virtually limitless.

In The Sims™, rather than tying mathematical skill-building solely to money and consumption, I suggest that mathematical opportunities be designed around themes specified in national standards for mathematics, particularly around the concept of proportional reasoning—a consistent challenge for middle school students and, indeed, for the population at large.[h] [15]

On the most basic level, I would recommend that designers add a grid that constantly displays dimensions in the build mode of the game. In this way, the numerical dimensions of homes and rooms might be “in the faces” of children as they build. The young people might then be more likely to notice not only the absolute but also the relative sizes of rooms that are different shapes. For example, until it was pointed out to him, Jamie did not notice that his bathrooms were much bigger than his bedrooms because they were different shapes. Digital play spaces like The Sims™ could be very useful in helping children acquire and practice these essential skills of proportional reasoning.

Add educationally provocative functionalities for child characters. In The Sims™, child characters have fewer options for social interactions than do adults. Perhaps as a consequence, the young people I observed most often chose to play the game as adult characters.

By simply adding some child-centered functionalities (objects and behaviors), designers could promote learning. For example, the designers might add a science kit, an invention center, or a historical re-enactor for child characters. These might be linked to small simulations. When children chose to interact with these objects, they could actually be discovering scientific principles and academic content matter in a fun way.

CONCLUSIONS

In this article, I examined how low-income, ethnically diverse young people appropriated The Sims™ for their own enjoyment and learning. Using the constructs of socio-emotional development, verbal fluency, visual intelligence, pattern recognition and rule discovery, and reflection, I documented what these children gained from their digital play experiences and what concerns emerged. Finally, I described ways in which The Sims™ and other computer games might be enhanced to further promote learning and discovery, particularly in the areas noted above.

h Proportional reasoning, another key theme of standards-based middle school mathematics teaching, is consistently rated as a trouble spot by teachers. It includes the concepts and operations of ratio and proportion, percent, similarity, and scaling (NCTM, 2001)

It is my belief that digital play spaces are powerful and promising environments for teaching and learning. To create quality learning experiences, however, we must be thoughtful and imaginative in our design of both the computer games and contexts of digital play.

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