Knowing and Throwing Mudballs, Hearts, Pies, and Flowers: A Connective Ethnography of Gaming Practices

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Abstract: Little is known how young players learn to participate in various activities in virtual worlds. We use a new integrative approach called connective ethnography that focuses on how gaming expertise spreads across a network of youth at an after school club that simultaneously participates in a virtual world Whyville.net. To trace youth participation in online and offline social contexts, we draw on multiple sources of information: observations, interviews, video recordings, online tracking and chat data, and hundreds of hours of play in Whyville ourselves. One particular game practice – the throwing of projectiles and its social uses and nuances – became the focal point of our analyses. The discussions address methodological challenges underlying the synthesis of diverse types of data that allowed us to follow youth across multiple spaces and times as well as initial insights into how this practice was used to negotiate relationships in multiple spaces through play.

Introduction

Over two decades ago, Marjorie Goodwin (1985) argued in her paper, 'The serious side of jump rope,' that even game play such as jump rope is not divorced from everyday experience but is, in fact, a continuation of it that allows participants to discover how social order works. In recent years the idea of continuity between games and everyday experience has been expanded into the realm of online games and virtual worlds. Virtual playgrounds in the form of video games have become the new play spaces for peer culture to develop as parents and society exert more control over the places that are considered 'safe' for children's play (Jenkins, 1998). Yet little of the growing research on gaming has been applied to how children learn to "legitimately" participate (Lave & Wenger, 1991) in virtual worlds, much less how they use play in these worlds to explore relationships and social order. How young players come to understand both the explicit and tacit ways through which to participate successfully in these virtual worlds is of interest not only to gaming researchers but also to learning scientists.

Our studies of an after school club where twenty 10-12 year-olds came regularly to play in a virtual world called Whyville.net provided a window into how players helped each other to navigate the geographical intricacies of the site and how the participants subsequently appeared to become peer teachers and experts in their own right (Ching & Kafai, in press). Knowledge important to being an insider in the virtual world that included both game mechanics and navigation of relationships unmistakably spread throughout the club, but how it did so was difficult to discern. Like others interested in the growing field of learning in gaming and online spaces, we began to realize that these spaces (online and offline) could not be studied separately (Leander, in press; Stevens, Satwicz, & McCarthy, in press). In previous work (Fields & Kafai, 2007) we developed an approach of connective ethnography (Leander & McKim, 2003; Hine, 2000) that integrates multiple data sources combining online and offline interactions. As we will argue in this paper, this allowed us to re-establish the continuity between the different spaces and extend the connection between game and everyday life deemed so important by Goodwin. As a focal point for tracing the tweens' learning across multiple spaces we chose to study one particular type of gaming practice, throwing projectiles, a popular practice in Whyville and, as it turned out, connected with social navigation of both the club and Whyville – thus a good prototype for looking at play as learning and participation.

In this study our goal is to conduct a connective ethnography that focuses on how the gaming expertise of projectile throwing spread across a network of youth at an after school club that simultaneously participated in a multi-player virtual world. Our questions regard the tweens' learning and social navigation through play in the club and Whyville as well as methodologies for studying them. How did club members learn knowledge about projectiles important to socializing on Whyville and how did this spread throughout the club? Secondarily, how could we trace this learning across both virtual and physical spaces, and between the club community and the larger Whyville community? Finally, how did club members differ in their uses of projectile knowledge and how could we trace this complexity with the available set of data? In order to answer our questions, we drew on multiple sources of information: observations (field notes), interviews, video recordings, online tracking and chat data, and hundreds of hours of play on Whyville ourselves. These different, complementary data sources embody the multi-modal aspects

of connective ethnography, and allowed us to trace players' activities and learning across physical and virtual spaces. Since this type of methodology is relatively new, we hope that this study will inform future efforts at researching and analyzing play and learning across blurred virtual and physical spaces.

Background

Despite arguments concerning the importance of children's play for social (Piaget & Inhelder, 1969) and cognitive (Vygotsky, 1978) development there is only very limited research on children's interactions in play spaces (e.g., Goodwin 2006). The play spaces studied have largely included playgrounds, which serve as a laboratory for understanding peer culture. In particular Goodwin (1985) has argued that participation in play needs to be seen as continuation of everyday practices that let children position themselves within a group. Video game and virtual worlds have extended children's play spaces and occupy significant portions of their leisure time (Lenhardt & Madden, 2005). Only recently has our attention turned to them as spaces valuable for learning, recapturing the earlier arguments made about children's play. Researchers have begun to illustrate the complexities of learning how to play these games and their collaborative nature – indicative of rich learning environments (Gee, 2003). Most of the research has focused on interactions in virtual spaces paying little attention to the intricate connections between online and offline interactions situating most play, particularly within groups of children (Leander, in press).

Our research on gaming expertise, in particular insider knowledge, draws from two distinct bodies of work that illustrate very different approaches of what is involved in becoming a gamer. One thread of studies has focused largely on online play, most prevalent perhaps the first person accounts in which researchers use their own learning experiences and reflections in conjunction with ethnographic studies (e.g., Steinkuehler, 2006; Taylor, 2006) to document various social, economic, and cultural practices in virtual worlds. A second group of researchers have turned their attention to the physical spaces in which game play is situated, focusing mostly on gaming clubs or Internet cafés (e.g., Beavis, Nixon & Atkinson, 2005; Swalwell, 2003) and to a lesser extent homes and dormitories (e.g., Lin, in press; Stevens, Satwicz, & McCarthy, in press). In these studies researchers try to capture how the configurations and dynamics in the physical space situate access and participation to game play, including settings of homes or dormitories where players are often alone but in contact with others. Researchers here have used mostly observational methods, often supported by video recording and ethnographic notes, to capture the comings and goings, interactions and conversations among participants while involved in online gaming.

Each of these approaches has informed us a great deal on what players have to learn in order to master the complexities of the social game spaces. But at the same time, the research focus and choice of methods have led to an artificial separation between the online and offline (real or virtual). Many now argue that we need different approaches to capture the complexities of participation. Proposals such as connective ethnography (Hine, 2000; Leander & McKim, 2003) have started to map out new strategies for researching learning across multiple spaces and times and include traditional qualitative approaches such as observation, field notes and interviews but may also incorporate quantitative approaches such as log files of participants' online movements (Fields & Kafai, 2007). The goal is to build comprehensive accounts or "thick descriptions" in Clifford Geertz's sense (1973) of what youth do as they navigate and participate in virtual & physical worlds.

In this paper, we focus on one particular game practice called "throwing projectiles" to trace learning across spaces amongst a group of tweens in an after school club. While throwing projectiles involves mechanics such as selection and typing computer commands, more importantly, there are multiple social purposes and nuances attached to the act of throwing a projectile that are not accessible at first sight. It is a very traceable type of knowledge, easily identified in chat lines, and a common practice in the club and Whyville that could not be learned outside of Whyville. Further, throwing projectiles involves crossing different boundaries that are important to connective ethnography; not only does throwing projectiles facilitate a type of virtual 'touching' between virtual characters or avatars on Whyville, it represents passing between outsider and insider status in both the physically and virtually located communities of our study.

Research Settings and Approach

Whyville.net is a virtual world with over 1.2 million registered players at the time of the study that encourages youth ages 8-16 to play casual science games in order to earn a virtual salary (in 'clams'), which youth can then spend on buying and designing parts for their avatars (virtual characters), projectiles to throw at other users, and other goods. The general consensus among Whyvillians (the citizens of the virtual community of Whyville) is that earning a good salary and thus procuring a large number of clams to spend on face parts or other goods is essential for fully participating in the Whyville community (Kafai & Giang, 2007). Social interactions with others are the highlight for most Whyvillians and consist primarily of ymailing (the Whyville version of email) and

chatting on the site where users are visible to each other on the screen.

In early 2005 we set up an after school club where 20 youth in the 4th-6th grades came to play on Whyville for an hour most days after school. Most youth were new to Whyville, though one had played the year before the club started. They distributed themselves among 10 computers, often sharing a computer or wandering around the room talking to others. While the club began as a quiet place, it quickly became loud and lively as participants learned the site and began to shout advice to each other, arrange parties on Whyville, chat, throw virtual projectiles at one another, and critique each other's looks.

On Throwing Projectiles

Beyond chatting and ymailing, one key way to socialize on Whyville is by throwing projectiles. Projectiles and face parts (with which one can assemble one's avatar or online representation) form the two main types of products for sale on Whyville. The Projectile Shoppe offers more than 45 types of projectiles for sale – from mudballs to hearts to Frisbees – all of which can be thrown at other avatars on Whyville. Projectiles range in price from 1 clam (smileys, winks) to 2 clams (mudballs, snowballs) and on up to 15 clams (maggots, spiders). Throwing projectiles involves knowledge of the mechanics of throwing as well as how to use throwing to achieve various social goals. Some of the mechanics of throwing include typing the actual command to throw. Players can throw to a person by name as in "throw mudball oriahsiri" (or "throw [projectile] [username]") or players can throw in a direction designated by degrees in a circle as in "throw heart 90" (or "throw [projectile] [degree]") (see Figure 1). Yet there are also social nuances to throwing. One of the most obvious is that different projectiles might be interpreted differently. Throwing a piece of garlic at someone might result in a different reaction than throwing a Frisbee. And throwing a heart from a boy to a girl will probably be construed differently than from a boy to a boy (in the club this usually resulted in several minutes of convulsive giggling).

Figure 1. Throwing a Red Paintball on Whyville.

Data and Analytical Methods

In order to study the tweens' activities in the "multiple, simultaneous space-time contexts" (Leander & McKim, 2003) of the club and Whyville, we gathered and analyzed numerous types of data aimed to track the youth in the club over multiple spaces (physically in the club as well as virtually over multiple spaces on Whyville). Ethnographic field notes were recorded daily to capture the overall activity of the club while video tapes focused on small groups of youth clustered at tables with 2-3 computers throughout the nine weeks the club took place in the winter of 2005. Numedeon, the owner and creator company of Whyville, gathered click-level and chat data on each club participant. This means that every time a club member clicked to go to a new space on Whyville it was recorded, in addition to every word they typed in chat or whisper bubbles in public spaces. In addition, participants were interviewed individually at the end of the club about their learning preferences (e.g., "When you want to learn something on Whyville what do you do?"). While we report on our analytical methods in this section, we wish to note to that these methods are really part of our findings. Tracking and chat data has generally been used for summing up behaviors of large numbers of players rather than close analysis of a small group of young people, nor has it been combined with other forms of qualitative data to understand learning.

After determining that projectile-throwing was a type of insider knowledge largely learned only from other people[1], we set out first to understand how the community as a whole learned to throw projectiles (how the knowledge spread) and then how individuals learned person-to-person. We began by selecting out club members' chat data from the larger database and searching for the times they typed "throw" in their chat. These were manually counted and organized by username and date to identify the first time each participant threw projectiles and how often they threw projectiles. Based on this data we contextually analyzed both the online tracking/chat data and the video data to flesh out the context(s) in which children discovered that throwing existed and how to throw. To do this we searched all of our data just before and after the times identified in our initial "throw" search and followed the activities and chat until we felt we had reached as close to the beginning of an individual's learning to throw as

the data allowed. In addition, based on trends in the initial "throw" search, we used video and field notes to analyze club-wide events that may have influenced members to learn about throwing.

Finally, during the process of searching through the breadth of our data to understand throwing and how youth learned to throw, we determined several social uses of throwing (see Table 1). In an additional step, we identified four socially specific ways of throwing visible in chat based on whom club members threw to and what they threw with. We made these categories mutually exclusive and calculated percentages for how much each club member used each of these methods (see Table 2). Then we further analyzed the tracking and video data to understand how members used projectiles in different ways and how they learned this cultural knowledge.

Findings

Our questions about how club members learned the insider knowledge of throwing projectiles involved individual learning as well as community-wide learning across the virtual and physical social worlds in which club members simultaneously participated. In addition, through this analysis we realized that learning to throw included (not surprisingly) understanding the mechanics of throwing as well as the social purposes one could pursue in throwing projectiles. While our analyses were iterative, in order to illustrate projectile throwing more thoroughly we begin with an individual case study of a girl learning how to throw a projectile then follow with a community-wide analysis.

Individual Learning: Isabel Learns to Throw

While we know from chat records when each club member first threw a projectile, the connection to how they learned was not always obvious. However, there are a few instances where we have extended details that demonstrate the process by which some club members learned to throw projectiles. One of these is the case of Isabel[2], who learned during the fourth week of the club. In the following description of the video interaction (see Figure 2: the transcript is shortened due to space limitations), we can see how she learned some of the mechanics and social nuances of throwing projectiles while interacting with club members.

Isabel's interest in throwing projectiles appeared to start while she was sitting next to Cole at neighboring computers when Cole organized a throwing party by yelling, "Okay you guys, meet me at the Beach, no, at the Pool Party!" Taking this invitation to heart, Isabel started paying attention to Cole's activities of shopping for Projectiles, expressing wonderment about the various types of projectiles for sale: "Mudball, Red Paintball, Chocolate?" Several minutes later, after both watching Cole throw projectiles at others and being the intended recipient of a projectile herself, Isabel did her own shopping for projectiles for the very first time. With projectiles in her satchel and some knowledge of how to throw them, Isabel faced the social dilemma of deciding who her target should be, made evident in her question: "Who am I supposed to be throwing this at?" Cole directed her to throw at a friend in the club that Isabel initially started to do when she said, "No I'm doing this at somebody else," outrightly differentiating her activity from his. One interpretation of this is that having achieved some confidence in her ability to throw and in at least one social use of throwing (i.e., a playful throwing war with club friends), Isabel decided to pursue a different social purpose in her own activity of throwing projectiles. From chat records we can tell that she initiated a friendship with a Whyvillian through projectile throwing. Though she did not actually succeed in throwing a projectile that day, visible in the incorrect spelling and/or syntax displayed in chat records, Isabel did experiment with and learn different social navigation strategies through her efforts.

Interestingly enough, from chat records we can see that Isabel followed up on her learning in the club setting across various spaces. First, she asked questions of non-club members in Whyville to solidify her understanding of the mechanics of throwing. Then she proceeded to apply them back with Cole while they were in their separate homes but in a shared virtual space on Whyville. Isabel hit Cole with a projectile, resulting in a short and friendly throwing war between them, and from that time threw projectiles at both club members and Whyvillians, trying out several social uses of projectile throwing to navigate relationships, some successful and some not.

Community-Wide: Different Social Purposes in Throwing

As Isabel's case demonstrates, there is more to learn about the insider knowledge of throwing projectiles than simply the game mechanics of knowing how to throw them. One must consider who to throw at, what to throw at them, and what purpose one is aiming for in throwing. As Goodwin (2006) argues, children's play is a space in which they negotiate relationships of inclusion and exclusion. As a first step of laying out what different purposes club members might have for throwing projectiles at different people, we created a typology of throws

(differentiating primarily between inclusive and exclusive purposes, and also between throws at club members (known in the 'real'/physical world) and throws at Whyvillians.

Cole:	Four pies, four mudballs, four –	*Cole shops for projectiles, listing different kinds for different purposes.*
Isabel:	No wait, go down? No get, um, *((pointing at projectiles on the screen))*	
Cole:	I need to get one pair of flowers for my girlfriend, a kiss for my girlfriend. Oh I already have some hearts.	
Isabel:	**Purple paintball, mudball, red paintball. Chocolate?**	*Isabel engages in exploring available projectiles*
.....	.....	.....
Cole:	I splatted the person behind you. I tried to splat you but I splatted the person behind you. Throw pie *((typing))* Webster where are you? '	*Cole throws something at Isabel but misses.*
	Yoda ((typing Webster's username)) Webster - go inside the mall to the food court!	*After watching the projectile battle, Isabel decides to get some projectiles of her own.*
Isabel:	**Okay I want to get something.**	
.....	.....[*Isabel goes to Projectile Shoppe*].....	.....
Isabel:	How you spell throw again? T-h- *((looking over at Finn's screen))* T-h-r. *((goes to her own screen))*	*After watching Cole throw projectiles at club members, Isabel asks for help on Mechanics of throwing.*
.....	.....	.....
Isabel:	**Who am I supposed to be throwing this at?**	*Isabel asks for Social instruction on who to throw at.*
Cole:	Boom. Pied you with your own pie. Bluwave, okay?	*Cole tells her to throw at a club member.*
Isabel:	Okay. Well no wait. what's her name?	
Cole:	Bluwave.	
Isabel:	**No I'm doing this at somebody else.**	*Isabel determines to do her own thing.*

Figure 2. Isabel Learns to Throw.

Two practices of inclusion with club members (we never observed practices of exclusion using projectiles between club members) include throwing as a way to show attention to a club friend or as part of a throwing war (similar to a snowball fight, as in the example of Isabel and Cole above). Inclusive throws to Whyvillians could include similar purposes with the addition of using projectiles to initiate a friendship (some basic level of camaraderie or friendship was already taken for granted in the club). In addition there are throws using symbolic objects such as hearts and kisses to members of the same or the opposite gender. Exclusive purposes of throwing projectiles include throwing things at avatars that visibly stood out, such as observed incidents of club members throwing at avatars who dressed like a ketchup bottle or carrot – standing out because they did not have the standard face with eyes, nose, hair, etc. In addition, as we described earlier with the Whyvillian who offended Ulani, projectiles can be thrown in retaliation for an offense or insult.

We can apply our typology of different social purposes of throwing to our chat analysis of club members' throws. Broadly speaking, after identifying every time a club member correctly threw a projectile, we divided members' throws into four mutually exclusive categories identifiable in chat. We can think of throws to club members, discernable by the inclusion of a club/school friend's name in the throw command, as generally inclusive and either a show of attention or part of a throwing war (or possibly flirting or gender/homophobic play though we have not observed many incidences of these so far). We divided throws to Whyvillians into three categories: throws with gendered objects (including only hearts or kisses), throws to Whyvillians by name, and throws in a direction/degree. While each of these types of throws could be part of multiple social purposes, they are observable by the words used and easily counted. We divided each club member's throws into these four categories, calculated percentages to look for preferences, and color-coded general preferences among club members in terms of where the highest percentage of throws lay. Light colored boxes show either a strong preference for throwing to club members or for throwing across all four categories. Dark colored boxes show a strong preference for throwing to Whyvillians by name or throwing by degree. We can interpret the latter type of throw as slightly less targeted than throwing by name. If someone threw a projectile at 85 degrees and it hit someone, that person would not necessarily be able to tell whether the throw was directly targeted at him or her or whether the direction was randomly chosen.

Looking at the progression of learning displayed on Table 2 as a whole, two weeks stand out as having the most number of youth learning to throw, Week 4 and Week 7. One reason why four youth may have started throwing projectiles during Week 4 is that Cole (who learned during Week 3) was a significant social mover in the after school club and often yelled out to the entire room for people to meet him at a specific location in Whyville where he would then throw projectiles at them. This likely made projectile throwing more public to the club where it became a common activity, at least for the boys. The main reason why projectile throwing doubled during Week 7 probably has to do with a club-wide incident that occurred mid-week. While four girls were hanging out on Saturn, a Whyvillian insulted one of the girls, Ulani, who broadcasted this insult to the club. Within seconds, most of the club members present made their way to Saturn and started throwing projectiles at the offender until he left the planet. Several members were so incensed that they organized a search party to go from space to space on Whyville so they could continue to pursue the offender. We see evidence for the influence of this club-wide incident in conversations about it that occurred for the next few days and in girls' increased participation in throwing wars in the club.

One of the observations we can make about throwing projectiles is the agency with which all club members experimented with it as a social practice. We see evidence for this in Table 2 where we laid out the tweens' different types of throws and where we can see preferences for certain types of throwing among some of the tweens. While almost all club members tried out the practice of throwing projectiles, they differed in their adoption of the practice. For instance, Cole tried out every major form of throwing projectiles (to club members, to Whyvillians, by degree, with hearts and kisses) but demonstrated a strong preference for only throwing projectiles to club members. In contrast, while Briana also tried out every way of throwing projectiles, she had a decided preference for throwing by degrees (sometimes in the Zero Gravity Game) and rarely threw to club members on Whyville. Finally, one group of girls tried out projectile throwing once or twice (Jill, Ulani, Marissa) or not at all (Molly and Paige) and never pursued throwing as a regular practice on Whyville. However, despite their decisions not to throw projectiles, they still defined themselves in relation to the practice by occasionally inviting club members to throw things at them.

When Goodwin (1985) referred to the continuation between play and everyday experience, her focus was on bridging two worlds in which kids are participants just as we sought to understand the continuation between online and offline play. Connective ethnography helped us to integrate both the virtual and real spaces in our analysis and understand the dynamics in the larger context of the gaming club. Yet our particular application of connective ethnography illustrates how a combination and integration of qualitative and quantitative methods allowed us to provide a more comprehensive account of interactions and learning. Using tracking data enabled us to narrow in on a specific practice (throwing projectiles) and trace how the use of it was both shared and yet differentially practiced among club members. More than traditional participant observation, the tracking data allowed us to see club members in multiple online spaces (in Whyville) while in a shared physical space (i.e., the club) as well as peek into virtual activity while in different physical spaces (i.e., in Whyville while in a classroom, home or elsewhere).

Our analysis also revealed other aspects of importance to the field, in particular what concerns the private and public side of play facilitated in virtual worlds. One of our initial observations of the club based on coding of field notes was that the boys primarily threw projectiles while the girls avoided this practice until after the "incident" with Ulani that we described. Yet looking through the tracking data we found that several girls were among the first and most frequent projectile throwers in the club. Similarly, while boys often made quite a show about flirting with members of the opposite sex on Whyville through throwing hearts and kisses, at least two girls tried out this practice, though they certainly did not make it known to the club. This points to a potential difference in public versus private play in the club and on Whyville. One area we have yet to analyze is how club members "articulate" difference" (Goodwin, 2006, p. 241) through projectile throwing. We have evidence that club members did this by throwing projectiles at avatars who stood out as newbies or as different looking (e.g., as a bottle of ketchup instead of a face with with eyes, nose, and hair). To us it is fascinating that this practice, which shares the same syntactic command, can be used in so many different ways: to establish inclusion or exclusion, difference or commonality.

Table 2. Frequency of typing "throw" in chat and frequency of types of throws

Username	Name	First time Throwing	*Jan 4-9*	*Jan 10-16*	*Jan 17-23*	*Jan 24-30*	*Jan 31-Feb 6*	*Feb 7-13*	*Feb 14-20*	*Feb 21-27*	*Feb 28-Mar 3*	*Total throwing*	*# throws @ friends @ School*	*# hearts, kisses @ non-School*	*# @ non-school (not hearts…)*	*# @ degrees (180, 0, 90)*
fairi60	Kaitlyn	*pre-club*	-	-	1	4	0	0	0	0	0	5	0	0	20% (1)	80% (4)
whskr29	Briana	Jan. 6	28	51	19	29	14	0	75	46	1	263	1% (2)	1% (2)	25% (65)	73% (193)
bluwave	Zoe	Jan. 13		4	2	8	19	8	0	5	3	49	41% (20)	0	49% (24)	10% (5)
raybeams	Blake	Jan. 14		29	37	17	28	11	46	5	11	184	26% (48)	4% (7)	50% (92)	20% (37)
leo95	Cole	Jan. 20			8	39	7	0	34	0	0	88	83% (73)	3% (2)	8% (7)	6% (5)
zink	Bryce	Jan. 20			12	7	2	13	0	0	0	34	21% (7)	0	79% (27)	0
sirius	Scott	Jan. 20			2	0	74	44	41	35	11	207	7% (15)	3% (6)	51% (106)	39% (81)
stngray09	Trevor	Jan. 24				10	12	0	16	25	0	63	36% (23)	5% (3)	59% (37)	0
WOW4	Gabe	Jan. 24				2	0	0	0	11	0	13	69% (9)	0	31% (4)	0
ivy06	Isabel	Jan. 28				17	1	0	15	9	7	49	29% (14)	18% (9)	41% (20)	12% (6)
funster	Paul	Jan. 28				1	0	79	33	42	36	191	15% (29)	0	10% (18)	75% (144)
masher47	Aiden	Feb. 1					4	0	34	38	13	79	46% (36)	11% (9)	43% (34)	0
betelguice	Paolo	Feb. 1					48	46	83	26	6	209	29% (61)	1% (2)	69% (144)	1% (2)
vulcan61	Brad	Feb. 2					26	32	17	11	20	106	8% (9)	20% (22)	32% (34)	40% (44)
Peachy5	Leslie	Feb. 10						1	7	0	0	8	62% (5)	0	38% (3)	0
sharky404	Kyle	Feb. 14							38	6	0	44	91% (40)	9% (4)	0	0
amarylys	Jill	Feb. 18							1	0	0	1	100% (1)	0	0	0
Violet5	Ulani	Feb. 18							1	0	0	1	100% (1)	0	0	0
lucky7	Marissa	Feb. 18							2	0	0	2	100% (2)	0	0	0
bluswirls93	Molly	*never*								-	-	-	-	-	-	-
bloofer	Paige	*never*								-	-	-	-	-	-	-
Total throw frequency			28	84	81	134	235	234	435	259	108	1,596	25% (395)	4% (64)	38% (615)	33% (321)

Conclusion

As Leander and McKim (2003) point out, virtual spaces are now everyday spaces in the lives of many youth, yet we know little of how they use these spaces to negotiate identities and ways of being in them, much less how the interaction between multiple social spaces (both virtual and 'real') influences these ways of being. Our study of how one (and yet many) social practice on Whyville, throwing projectiles, was learned and adapted by tweens in an after school club provides one inroad to understanding how tweens learn to socially navigate a virtual space. Further, unique access to an expansive set of tracking and chat data allowed us to go beyond other forms of connective ethnography, to trace throwing projectiles by a group of tweens across times and spaces, something not easily done through more traditional forms of ethnography.

Endnotes

(1)The only exception is the Zero Gravity Game where throwing by degree instructions are written out. However, only one club member played this game (Briana).

(2) All names of club players and their screen identities are pseudonyms.

References

Beavis, C., Nixon, H., & Atkinson, S. (2005). LAN cafes: Cafes, places of gathering, or sites if informal teaching and learning? *Education, Communication, Information, 5*(1), 41-60.

Ching, C. C., & Kafai, Y. B. (in press). Peer pedagogy: Student collaboration and reflection in a learning through design project. *Teachers College Press*.

Fields, D. A. & Kafai, Y. B. (2007). Tracing insider knowledge across time and spaces: A connective ethnography in a teen online game world. In C. Chinn, G. Erkins, and S. Puntambekar, (Eds.) *Proceedings of the Eighth Conference of Computer Supported Collaborative Learning*, New Brunswick, NJ, 196-205.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York, NY: Palgrave Macmillan.

Geertz, C. (1973). *The interpretation of cultures: Selected essays.* New York: Basic Books.

Goodwin, M. H. (1985). The serious side of jump rope: Conversational practices and social organization in the frame of play. *Journal of American Folklore, 98*(389), 315-330.

Goodwin, M. H. (2006). *Hidden lives of girls: Games of stance, status and exclusion.* Oxford: Blackwell Publishing.

Hine, C. (2000). *Virtual ethnography*. London: Sage Publications.

Jenkins, H. (1998). Complete freedom of movement: Videogames as gendered playspaces. In J. Cassell & H. Jenkins (Eds.), *From Barbie to Mortal Kombat: Perspectives on gender and computer games* (pp. 323-356). Cambridge, MA: MIT Press.

Kafai & Giang (2007). Virtual playgrounds. In T. Willoughby & E. Wood (Eds.), *Children's Learning in a Digital World* (pp. 196-217). Oxford: Blackwell Publishing.

Kaiser Family Foundation (2005). *Generation M: Media in the Lives of 8-18 year olds*. Washington, DC: March 9. Available online at http://www.kff.org/entmedia/entmedia030905pkg.cfm (access September 2006).

Lave, J. & Wenger, E. (1991) Situated learning: Legitimate peripheral participation. Cambridge, England: Cambridge University Press.

Leander, K. (in press). Toward a connective ethnography of online/offline literacy networks. To appear in D. Leu, J. Cairo, M. Knobel, & C. Lankshear (Eds*.) Handbook of research on new literacies*. Mahwah, NJ: Erlbaum.

Leander, K. M., & McKim, K. K. (2003). Tracing the everyday 'sitings' of adolescents on the internet: A strategic adaptation of ethnography across online and offline spaces. *Education, Communication, Information, 3*(2), 211-240.

Lin, H. (in press). A cultural geography of gaming experiences in homes, cybercafés and dormitories. In Y. B. Kafai, C. Heeter, J. Denner & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat*. Cambridge: MIT Press.

Piaget, J. & Inhelder, B. (1969). *The Psychology of the child.* New York: Basic Books.

Steinkuehler, C. A. (2006). Massively multiplayer online video gaming as participation in a discourse. *Mind, Culture, and Activity, 13*(1), 38-52.

Stevens, R., Satwicz, T., & McCarthy, L. (in press). In game, in room, in world: Reconnecting video game play to the rest of kids' lives. In K. Salen (Ed.), *Ecology of games: MacArthur Foundation series on digital media and learning*. Cambridge, MA: The MIT Press.

Swalwell, M. (2003). Multi-player computer gaming: 'Better than playing (PC Games). *Reconstruction: Studies in Contemporary Culture 3(4)* Retrieved September 1, 2006, from http://reconstruction.eserver.org/034/swalwell.htm

Taylor, T. L. (2006). *Play between worlds*. Cambridge: MIT Press

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.