Reading by Design: Two Case Studies of Digital Reading Practices

To understand the complexities of reading online, teachers need to understand how the reading of linear print text differs from the reading of digital texts.

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*If students are to become agents of positive change,
They will need an education that is comprehensive
and truly relevant to a digital age.*
—*Stuart Selber, Multiliteracies for a Digital Age*

In a July 27th, 2008, article from *The New York Times*, Motoko Rich claimed, "What is different now...is that spending time on the Web, whether it is looking up something on Google or britneyspears.org, entails engagement with text" (p. A1). With that statement, digital texts entered public debate and were acknowledged as capable of inviting skills that foster literacy. Over the past few years, increasing attention has been paid to digital literacy practices, as well as to how they can be incorporated into literacy teaching and learning (Alvermann, 2006; Buckingham, 2007; Cranny-Francis, 2005; Davies, 2006; Knobel & Lankshear, 2006; Thompson, 2008). Some scholars in the field suggest that digital reading involves a different logic and set of practices governed by multimodality. In this context, multimodality is defined as an understanding of different modes of communication (visual, acoustic, spatial) working together without one being dominant. In this article, we explore how digital reading practices rely on notions of multimodality (Kress, 1997; Kress & Van Leeuwen, 1996, 2001) and design (Cope & Kalantzis, 2000) to appreciate and understand text content.

We study in detail two different learners—one struggling in school, and one who has a passion for digital texts—and build on their particular stories to get an overall picture of literacy teaching and learning. Significant work pertaining to online literacy has already been done (Coiro, 2005; Leu, 2000; McNabb, 2006; Snyder & Beavis, 2004; Wilder & Dressman, 1998). We build on such work in our analysis of two learners in different countries and with different stories.

Using Digital Reading Practices in Literacy Education

There are several issues to grapple with when it comes to online reading practices. The sheer vastness of the Internet is an issue that researchers such as Julie Coiro (2005) acknowledged, wherein middle grade students may make random decisions because of the ubiquitous nature of information on the Web. Other issues to grapple with include how to best incorporate reading practices into a curriculum, how to assess online literacy practices, how to account for equity issues when some students in class do not have online access, and how to safely provide students access to the Internet (for example, our participants were often denied access to certain sites). Past research has shown that online reading creates an environment more focused on the learner (Au, 1997; Kamil, Intrator, & Kim, 2000). Researchers of online reading practices have shown how collaborative learning environments immerse students in a social learning context, without the intimidation of face-to-face contact (McNabb, 2006). The point is to build on the funds of knowledge (Gonzales, Moll, & Amanti, 2005) that our two focus students (Peter and Patty—both pseudonyms) discussed in this study and brought into the classroom by thinking in terms of online learning.

In *Literacy Learning in Networked Classrooms*, Mary McNabb (2006) identified three ways in which the Internet can provide curricular benefits (1) designing Internet-based activities to help meet the diverse needs of students by engaging them through personal interests, (2) customizing teaching–learning cycles in ways that motivate students, and (3) fostering self-directed learning. Case studies featured below fall in line with these curricular benefits. In the first case study, Peter faced a challenging home situation, which compelled him to spend an increasing amount of time online. Through frequency and intensity of use, Peter became proficient in several online skills, such as seeking out information from multiple sources. He also became proficient with the Naruto videogame and developed a deep understanding of online settings and characters. Interestingly, Peter showed very little interest in, or aptitude for, school language arts, suggesting that if Peter's teacher were to adapt the curriculum in line with McNabb's suggestions, Peter might approach classroom learning with a higher level of interest and motivation. This could be accomplished by designing Internet activities pertaining to assigned texts, or by having Peter actively seek out information to engage his fascination with anime.

Digital Reading in This Study

We view digital literacy through a multimodal design lens and focus on work by the New London Group (1996) and scholars such as Carey Jewitt (Jewitt & Kress, 2003) and Gunther Kress (2003). To approach online reading with this mindset, we need to define some terminology pertinent to our case studies. By multimodal, we mean the use of different modes of communication to create an effect, the point being that each mode offers certain potential meanings that another might not offer. For example, Naruto is the story of a teenage ninja in which actions/gestures play as much of a role in meaning as visuals and dialogue do. The point is, these modes work in concert with one another.

The term reading path plays a central role in multimodal theory. Reading path charts a reader's trajectory through a text and it exists as much with printed texts as it does with digital texts. The challenge for online readers lies in the composition of the webpage: Where does the reader first look on the screen and where does that lead him or her? As Kress (2003) noted, the reading path of printed texts is well established, and although you can certainly move around a text, the trajectory is linear. With digital texts, however, the reading path is "to-be-constructed" by the reader (or by the image or nature of the multimodal text; Kress, 2003). When reading online, you do not know where you will end up at the end of the reading event.

Reading by Design

Skills needed to engage multimodal texts require readers to understand the significance of sound and visual narratives as much as written narratives. Kress (2003) described the difference "between designed and displayed text and continuous print as the difference between 'showing' and 'telling'" (p. 152). Peter and Patty understand that online reading allows greater access to different genres of texts and more

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information. For instance, Peter looks up key facts about Naruto by going to Wikipedia and websites about Japanese folklore or websites featuring information about chakra, the mystical source of Naruto's powers. Patty enjoys the number of forms and genres of texts offered within the world of Webkinz, whether it is puzzles, games, shopping, or participating in the kinzchat room with other players. Kress (2006) suggested that as online materials increasingly dominate printed media, there is a need for students to become familiar with, and use, metalanguages that demonstrate a critical awareness and understanding of digital texts. Using multiliteracies and new literacy theories to view adolescent reading practices fosters an understanding and appreciation of the nuances of digital reading.

According to the New London Group (1996), "multiliteracies also creates a different kind of pedagogy, one in which language and other forms of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve various cultural purposes" (p. 64). By dynamic representational resources, the authors mean pedagogy that acknowledges diversity and acumen with different modes of communication within printed and digital texts. A multiliteracies framework provides educators with a way to revisit conceptions of language, to include linguistic modes along with visual modes, acoustic modes, etc. Modes such as visual, aural, gestural, spatial, and linguistic are incorporated into interfaces designed to convey a message to the reader. Readers of digital texts, like Peter and Patty, instinctively know that part of the digital reading process is seeking out information in texts to add to their knowledge in a particular area.

The New London Group (1996) offered the conceptual framework of multimodality to explain how learners access available designs in their appreciation and understanding of texts. Working from the perspective of text designers, students may use available designs in linguistic, gestural, visual, and spatial modes, and in turn redesign it however they see fit to make it more meaningful. This designing process can be described as one that "transforms knowledge by producing new constructions and representations of reality" (p. 76).

The Study

This study documents the literacy interests, motivations, and practices of two middle school literacy learners. In former studies (Burke & Rowsell, 2005; 2006), we interviewed students as they worked online to access what reading practices students invoked in their use and understanding of digital texts. In these studies, we had larger samples with a focus on reading path (Burke & Rowsell, 2005) and multimodal assessment (Burke & Rowsell, 2007). What we found previously is that students use interface design to understand content, and more often than not, they think in terms of redesigning content to improve the meanings of texts. In this study, we broaden our perspective to include a U.S. site and a Canadian site. During the interviews, we asked the following questions:

- Do you have access to a computer?
- What websites do you like?
- What do you like about them?
- What do you not like about them?
- How might you change them if you could?
- How do these sites relate to texts that you study in school?

To explore digital reading practices of the students while working, we used stimulated recall as a way of having participants talk through their actions and movements. To complete the stimulated recall, we asked participants our research questions as they read through a website and audiotaped the dialogue. The recordings were transcribed and compared with our anecdotal notes taken right after each 40-minute session. To conduct this research, we sat beside student participants Peter and Patty as they navigated the sites www.narutocentral.com and www.webkinz.com and recorded their responses to the questions. In addition to the 40-minute interviews, we conducted follow-up interviews to probe unanswered questions.

Further interviews were conducted with participating teachers. In this way, the study used observational data alongside transcribed interview data. Pseudonyms are used to protect the identity of the participants.

Two case studies of digital reading practices are featured in this article. We opted for case studies because of their indicative and representative dimensions—that is, they signal practices inherent to digital reading practices that can be explored in future research. We adopt Anne Haas Dyson and Celia Genishi's (2005) definition of case studies in *On the Case*:

> Any detailed "case" (e.g., a studied teacher's pedagogy, a child's learning history) is just that—a case. It is not the phenomenon itself (e.g., effective teaching, writing development). That phenomenon may look and sound different in different social and cultural circumstances, that is, in different cases. This relationship between a grand phenomenon and mundane particulars suggests key theoretical assumptions of qualitative case studies, particularly those involving production of meaning and its dependence on context. (p. 4)

In our study, the particular situations of both participants and their relationship to their school settings contribute to our analysis of interviews and observational data. Case studies provide a unique picture of the reading practices that offer compelling research evidence. Denscombe (1998) provided a helpful insight into case study research, stating that "the aim is to illuminate the general by looking at the particular" (p. 30). Golby (1994) has made it clear that case studies are not a study of uniqueness, but of particularity. Golby also argued that to understand a "particular" case, connections to other cases need to be made, and an acute awareness of how this understanding is reached is required. In our study, we take an analytic generalization from the data to offer some insight into how we can learn about digital reading practices by interviewing a child while she works online in conjunction with a text analysis of the site.

The analytic framework drew on Kress and Van Leeuwen's (2001) framework of discourse, design, production, and distribution. To analyze online reading, we interpreted the specific learner, taking into consideration their chosen sites and their actions as they explored the sites.

Crossing Contexts: A Dual-Location Study

The first location is a U.S. suburban town in central New Jersey, called Bordertown (pseudonym). The social context of the school largely reflects the characteristics of the town. First of all, most students live in the nearby town center. There is a deep, long-standing schism in the demographics, dividing the rural and long-time suburbanites and the relatively new middle to upper class residents. There has been a rapid growth and a lack of businesses in the town center, which has made taxes skyrocket over the past few years. Parents in the community increasingly demand more from the high school in the face of rising taxes. There is a strong parent community that uses standardized test scores as a basis to compare neighboring towns. As a result, increasing demands tend to be placed on students in the school.

The second location is a Canadian city on the east coast. Not unlike other small cities, Oceanside's (pseudonym) schools are challenged by a lack of regular funding and a population influx from rural and international communities to the urban center, putting extra pressure on both the education system and its educators. This school is known for its use of technology in the teaching process and there is a full-time technology teacher on the staff. The zoning area for this school draws from both private and public housing. It has an active parent community, which has successfully implemented many different school programs among its diverse community, including recycling, sports programs, reading programs, and arts education initiatives.

Participants

Peter

The first participant, Peter, is 14, white, brown haired, and tends to be more independent than his classmates. Peter is a special education student who receives supplementary writing and reading help. Peter's teacher describes Peter's morning routine: "Every morning he approaches me to talk, mostly about Lego Star Wars videogames, Naruto, and Yu-Gi-Oh game cards." According to his teacher, Peter is content to be on his own "with the artifacts that he brings to school: Yu-

Gi-Oh cards and Star Wars Lego figures." Peter is the oldest child in his family.

Jennifer (Rowsell, first author) spoke with Peter at length about his love of Naruto and noted the incredible depth of understanding he had about the topic. Jennifer was impressed with his advanced vocabulary and in-depth appreciation of content in the series and found it difficult to reconcile his poor reading scores with Peter's knowledge and understanding of Naruto's storyline and plot.

Although Peter was particularly talkative about Naruto, he tended to be a loner in the class. He was classified as having special needs, although the teacher admitted that his advanced knowledge and vocabulary of specific topics, such as those pertaining to Naruto, calls this designation into question. The one answer the teacher gave when questioned about Peter's situation pertained to challenges taking place at home at the time of the research study. At that point, he showed little motivation or interest in school, but a keen interest and motivation in digital worlds.

Patty

Unlike Peter, Patty is active in sports, popular with peers, and is the editor of the school's digital yearbook. Her teacher describes her as an energetic 13-year-old, an avid reader, and a straight-A student who comes from an engaging home environment. In her spare time, she likes to care for her five Webkinz pets in the virtual world of Webkinz (www.webkinz.com). Her appreciation for virtual play through the interactivity hosted on the site complements her school ability to actively engage in many activities on many different levels. Mimicking real life, Webkinz activities such as site decorating, virtual shopping, and online

socializing help maintain her interest in the Webkinz virtual world. A closer examination of Patty's designing of her Webkinz site entails an understanding of a number of roles, such as pet owner, shopper, and interior decorator, and the earning of virtual money through games of chance and various jobs, which allows her to care for her five pets.

Two Sites and Their Users
Discourse, Design, Production, and Distribution

To analyze these two websites, we use Kress and Van Leeuwen's (2001) framework as it is set out in *Multimodal Discourse*. Kress and Van Leeuwen discussed four steps required to create multimodal texts: discourse, design, production, and distribution (described in Table 1). In our website analysis, we explore each aspect to analyze Peter and Patty's online reading.

The two websites considered in this study—www.narutocentral.com and www.webkinz.com—align well with both Kress and Van Leeuwen's (2001) framework and the multiliteracies pedagogy (Cope & Kalantzis, 2000) in analyzing and understanding multimodal texts. Each site falls into a specific genre of digital texts; Naruto carries a storyline and can be viewed as a televisual online text or a videogame, and Webkinz is an interactive site where users find an online identity and community through their stuffed animal avatars.

The two multimodal texts contain layers of ideas that offer important information about digital reading practices. The first layer consists of discourses assembled to convey a given message. For example, Naruto is an anime series developed by the artist Masashi

Table 1   The Multimodal Framework

Step	Description
Discourse	Ideas, thoughts, values, and ways of speaking that inform choice of words and content more generally (Gee, 1996)
Design	How discourses materialize in the design
Production	The choices made during the design process
Distribution	How modes materialize in texts as physical features of texts and how they are disseminated

Kishimoto that depicts a world wrapped in history and hierarchies of power. In this setting, the tales of the lead character, Naruto, revolve around his adventures and those of his ninja friends. There are prevailing discourses in the Naruto series, such as ninja history and lore, and more subtle ones, such as globalization, with the presence of modern-day technologies like convenience stores, movies, and contemporary advertisements. The fusion of different regional discourses blurs contextual identifications, although there are obvious ties to Japan.

Figure 1 shows the lead characters with facial expressions that match their personalities in the series. The emblem on their headbands denotes the village to which they belong, and a spiritual thread in the story is the notion of chakra (internal reservoirs of spiritual energy) and the chakra levels they strive to achieve as the story unfolds. Naruto's blond hair aligns him with Western culture and discourses. The point is that discourses materialize in designs. Designs carry modalities, such as exaggerated features tied to Japanese anime and manga. The design carries core elements of the Naruto plot, such as the chakra levels the young ninjas need to earn. Finally, this distribution represents the means by which designs realize discourses. Naruto has been designed in a particular way, interweaving Japanese anime with allusions to Western artifacts and images. Add to this sounds, animation, visuals, and words in dialogue that give Naruto its distinctive character. Kress and Van Leeuwen (2001) maintained that "the design process in the multimodal world involves the selection of discourses and selections of modes through which content-in-discourse will be realized" (p. 64). That is, Kishimoto had a distinct plan for the content of his series, which he realized through his designs distributed by the affordances of image, animation, stylized illustrations, and sound. As a producer of an image, Kishimoto assembled discourses to establish a message that is then conveyed to readers. A more contemporary view of digital reading needs to take greater account of practices involved in making or producing digital texts to understand how we read them (Sheridan-Rabideau & Rowsell, in press).

Figure 1   Naruto Characters in Action Pose

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Peter and Naruto

What Peter loves most about Naruto are the layers in the plot. Characters like Naruto, Sakura, Sasuke, and Kakashi have their own idiosyncrasies, which manifest themselves in their distinct appearances, practices, histories, and characterizations in the series. Naruto, the lead character, grew up without parents or friends, and with little attention. To get attention, Naruto pulls pranks and causes mischief.

Distinguishing features of characters are found in their relationships to ninja lore, a class system, and spirituality that become evident when they enter and exit the human and supernatural worlds. Peter seemed the most interested in spirituality within the storyline, and most of our interview dealt with spirituality and the notion of chakra.

Jennifer: I like these Naruto cards, is that how you say it?

Peter: Yeah. The levels of the ninja are academy, student, and then you get your headband. I look this up on the computer. After undergoing a three-part exam, you are being judged worthy to advance to the rank of Chunin. A Chunin is able to go on solo missions and lead groups. Yeah, and then the Chunin are the elite, the most powerful and highly skilled ninja. A Chunin is also deemed strong enough to train a squad of three Genin.

The conversation goes on for another five minutes, during which we look at a series of Naruto screens. We then get onto the topic of chakra, about which Peter is very passionate:

Jennifer: Do you play it with your friends?

Peter: [ignores my question and instead changes the topic to chakra] Chakra is the energy

Figure 2   Naruto Brandishing a Scroll

needed by ninjas to perform special ninja arts and techniques called *jutsu*. Chakra is generated within the body by combining elements: physical energy that comes from the body's cells, and spiritual and mental energy that is gained through training and meditation.

Peter proceeds to discuss the nuances of each character at length. The dominant discourse in the world of Naruto is ninja history and the layering in of spirituality with the notion of chakra. In terms of design and production as a physical, material manifestation of content in design (the second and third of Kress and Van Leeuwen's [2001] processes of multimodal textual understanding), spirituality blends in with the plotline through forces that surround characters. Figure 2 shows Naruto in a warrior pose, brandishing a scroll like a sword, on which is written Japanese lore and the spiritual guiding principles of Naruto's mission in the series and videogame. The distribution and modal density is obvious in the illustration, with the intensity of Naruto's blue fiery eyes and his whiskers as a reminder of the otherworldly quality of the story—characters in Naruto stand between the human world and an ethereal other world. The emblem sits prominently in his headband as a reminder of his heritage and origin in the Leaf Village.

When Peter reads Naruto, it is the mystical and otherworldly quality that speaks to him. His advanced vocabulary and reading of informational texts entirely relates to gathering more information about ninjas, chakra, and Japanese history. Peter has difficulty comprehending the underlying meanings of texts such as William Golding's *Lord of the Flies*. Although he is uninspired by texts assigned in school, he voraciously reads about Japanese lore online. He admits to being more of a reader than a writer. Peter's teacher says that he can actually read texts when he has to, but that he does not exhibit interest in texts covered in language arts classes.

When Peter discussed the plot of the Naruto TV series and videogame, he demonstrated a deep understanding of characterization and sense of story:

Well, this one was still kind of recent, at the Chunin exams right after the preliminary rounds. [points out

characters] That's Sasuke. He's in pretty bad shape. [reads an example of an episode for me]. "Takashi reaches Sasuke's hospital room just in time to stop Kabuto. His cover blown, Kabuto answers Takashi's question." What does scornful mean?

What is intriguing about Peter's discussion of this Naruto episode is that it shows his pronounced understanding of new literacies and the Naruto world although his vocabulary is lacking, and he is unfamiliar with words such as *scornful* or, later, *inevitable*.

So, what does this case study tell us about digital reading practice? Peter can decode and he understands plot, setting, and characterization. Also, he has an extensive vocabulary when faced with familiar texts. He builds on prior knowledge to understand other, related texts and uses design principles to understand the plot. He identifies discourses that emerge from designs to fill out the meaning of a story. In short, Peter is a capable reader in this setting, yet he continues to underachieve in school reading assignments. Despite his ability to have a complex discussion about characters, levels of play, and chakra within the genre of anime, his skills fall outside a school model of reading and writing.

Patty in the Webkinz World

Patty loves playing in the virtual world of Webkinz, where real-life play with stuffed animals blends into a virtual world, where the animals take on real personalities. On opening the first page of the Webkinz site, we notice how the Ganz Company has designed an opening screen, which introduces numerous discourses for the entrant to the Webkinz world. For example, the login screen has a small portal, which resembles the rabbit hole in Alice's Wonderland. For their main page, the designers of Webkinz have chosen the powerful design of a newspaper, which legitimizes the discourse found within this virtual world through its alignment with a common household media artifact. The daily newspaper labeled *Webkinz Newz* shares the latest bulletins, offers access points to play, and contains other entertainment and advertisements, which connect the virtual world to the real one where Webkinz owners can purchase new pets, clothing, and jewelry. As a result, we see how the design and discourses, such as fashion and shopping, are

extended through the distribution of the site's possible affordances in real life objects, which can then be redesigned to become virtual objects for play.

On the Webkinz main screen, we see how the varying modes, such as graphics, font, and visual representations of the pets, provide available designs for pet owners to construct their understanding of this virtual world. "My Stuff" contains representations of objects, which carry discourses of healthy and active living, home décor, and gaming. Headings such as "Things to Do" offer opportunities for the pet owners to earn Kinzcash (the website currency) through quizzes and games, attend school, or get a job for their virtual pets.

Kress and Van Leeuwen's (2001) four points (discourse, design, production, and distribution) help develop our understanding of the multimodal composition of these sites beyond the obvious technical possibilities. Reading digital texts means that we read the work semiotically and are aware of the affordances offered by the available modes of the site, eventually gaining a greater understanding of the skills needed to comprehend and further immerse ourselves in these sites. Patty shows how a motivated and engaged learner uses these available modes, such as games, design features, and interaction, with other players to formulate new discourses and to recontextualize new understandings (Cope & Kalantzis, 2000). In this discussion, Anne (Burke, second author) and Patty talk about the combination of discourses placed on the site mimicking real-world living, and how these contribute to the socially constructed reality of the pet owner's world.

Patty: Well, there are a lot of games on it, and you have to save up all the Kinzcash. You can go to the W Shop [points with the mouse]; that is where you buy stuff.

Anne: Can you tell me a little about them? [points to the W Shop items for purchase]

Patty: These are new items. Probably once a month they get a new item, like for new room themes or something. Like, you theme your rooms and there is a sale on items.

Anne: And these items are for your Webkinz's house?

Patty: Yeah, and you can sometimes get food, and then if you want the food you just click "add to cart" and then it's added to your total cost.

In this particular exchange we see how the design of the site engages Patty in the reading and understanding of numerous discourses, such as shopping and decorating. The design of the W Shop and descriptors used mimics online shopping systems, such as small price tags with narrative descriptions of the items. Figure 3 shows a screen with a featured item of a cowgirl actor who is described with the phrase "Yee ha! This is one truly talented actor y'all! She'll bring her country charm to all of your shows!" The descriptor is designed to hold authenticity by using dialect common in children's television shows of cowboys and cowgirls. The labels of " + add to cart" and "check out" placed with a visual of a shopping cart are a designed combination of discourses to extend the pet owner's virtual experience of online shopping to those mimicked in artifacts representative of the real world.

We can see by looking at this site that its primary discourse is aimed at the care of the virtual pet. These discourses are enforced by a menu bar with a statistical meter, which measures the heath, happiness, and hunger of your pet. This interactivity is what draws children further into a virtual and very compelling world. Note the discourses on pet ownership and responsibility shared in this interview with Patty.

Anne: He seems very happy.

Patty: Yeah, and you can see how they're doing, how they're feeling.

Anne: Tell me a little about that. That gauge says "happy, health, and hunger," and I'm always really curious about that.

Patty: "Happy" means that they are really happy.

Anne: This is Bananas right? [the webkinz character, Bananas the monkey].

Figure 3   Webkinz W Shop Storefront

Patty: He is 100% happy and is only 91%...he is a bit hungry, so I can feed him.

Anne: How are you going to feed him?

Patty: [excited] Fruit slushy. I'm going to bring it over to him.

Anne: Oh, you bring it over to his little avatar and he goes "ummmm to the Max."

The production of this site shows how differing modes can be articulated and expressed in varying forms, forms which engage the site's readers through many different discourses. For example, the site has interactive frames, which offer trivia games, gaming, cooking shows, and pet beauty pageants. All of these appeal to children as well as the parents who purchase the pets and related items in the real world.

The distribution is a combination of the website and the real world advertising, each of which supports the other's importance to the engaged child. Another way in which the designs are changed is through surveys, for which the site pays participants in Kinzcash. Anne asked Patty what skills she thinks are needed to participate in the website:

> You definitely need to be able to read. You need to be able to use the mouse. I think this is for really all ages. Then you can do surveys and stuff. Usually, if you are younger, you don't do the survey or have your parent do it with you. Say the survey is "What do you think of our trading card challenge game?" I played it a bit and sent in my survey, and I got 50 Kinzcash.

The use of surveys by Ganz, the toy company who created the site, shows how the design of the site attends to distribution by being attuned to its users' reading habits, within particular discourses and through particular designs accommodating the needs of users within their virtual world.

Discussion: Rethinking Reading With the Digital in Mind

With Peter and Patty in mind, it is clear that digital reading not only demands a different set of skills than printed texts do, but also it carries a different set of assumptions and epistemological framings based on how a text is designed and produced. Online reading assumes a natural understanding that complex discourses can materialize in designs and, equally, that modalities distribute messages. Table 2 summarizes what we have observed about digital reading practices.

By analyzing our data through a multimodal lens, we illustrate how online sites invite additional skills when compared with printed texts. Digital media adds new layers, like complex visuals, the dynamism of the storyline, and the related texts and supporting genres that accompany the story. Peter has fluency in his reading of Naruto's world. He plays the videogame intensely, he is articulate about the nuances of the plot, and he extends this interest into other texts and media, such as game cards. Patty enjoys the online world of Webkinz. She has easily grasped the importance of earning Webkinz money, either by virtual work or through games. She has willingly embraced

Table 2   Websites and the Multimodal Framework

Type of Site	Discourses	Design	Product	Distribution
Naruto (Televisual-videogame)	Complicated plotline and conventions of Ninja lore, anime, Japanese Culture	Physical representations of characters and their identity through appearances and emblems	Anime fan sites, comics, telefilm	Narrative that is in form of website
Webkinz (Interactivity)	How to care for a real pet

Shopping, home décor, gaming, school discourses, employment | Provides a virtual world for stuffed toys and their owners | Land populated by stuffed toys accentuated with realism through virtual engagements mimic real world | Website is the virtual means by which the physical world of Webkinz is created |

the responsibility of owning animals, a responsibility quite real to her despite the Webkinz world's online restrictions. Her desire to mimic the actions of a real pet owner, either by making nutritious choices in food or by purchasing items to decorate her Webkinz's rooms, show how virtual texts can provide identities combining virtual and physical spaces for young children.

Kress (2006) discussed how the new communicative engagements of youths show their adeptness at using the semiotics of digital rather than printed texts to guide their understanding. Peter, for instance, has a complex understanding of chakra and the ninja legends carried by and represented in the characters of Naruto, which show how the visual modality helps formulate the narrative for him. In many ways, his ability to align and capture the nuances of the characters of this series through the visual modalities designed by Kishimoto has prepared him well for the sort of digital reading which is more representative of contemporary literacies. Contemporary literacies are necessarary for different genres of texts such as graphic stories (Schwartz & Rubenstein-Ávila, 2006), televisual texts (Buckingham, 2007), videogames (Gee, 2003), and social networking (Rowsell, 2009).

Patty's use of the visual, gestural, spatial, aural, and linguistic modes on the interactive Webkinz site makes her reading experience more real for her. Her use of these modalities shows how she can cross the boundaries of childhood to spaces simulating the lives of pet-owning adults, through virtual responsibilities imitating the freedom of choice representative of adult worlds. In many ways, virtual realities such as Naruto and Webkinz provide a platform for reading where the desire for the real experience guides the virtual play within each of these interactions. Watching students like Peter or Patty, it is clear that the use of language is experienced in truly dynamic forms, resulting in reading processes that are recontextualized, reworked, and reimagined to achieve their "own cultural purposes" (New London Group, 1996). By *dynamic forms*, we mean a proficiency with an interpretation of visuals and semiotics more generally, and an understanding of allusions to hybrid texts for characterization and identity. Mediation of characters is found as much through dialogue as through visual grammars. The

reading of images and texts shows an experience that falls outside the realm of present teaching pedagogies. Patty equated her care and understanding of her pets at home to caring for her pet within the provided discourses of the Webkinz world.

For Peter, the extension of Naruto in its many forms is how he has come to understand the complexities of anime. Students' privileging of image points to shifting epistemologies about how images can be used to convey discourses. It also suggests that the materiality of the interface is as important to reading comprehension as the discourses within the site. Peter's connections to the designs, which are realized in the texts, are paramount to his constructed understanding of the world of Naruto. Patty likes how she can hold a physical representative of her pet in her real world and can interact with it in a virtual setting, mimicking the discourses of real adults and pet owners. Ganz's production of this site has aided Patty in having an experience that is real in the contexts and understandings of an adult world, yet framed with the modalities of a child's world of play. In this study, the learning engagements within digital texts for both participants were essentially just as concerned with the choices and organization of the material as with the actual content of the site.

The distribution represents the manner in which modalities embody meanings in the design and content of texts. Kishimoto's choice of characters, creation of storylines, and philosophical and spiritual overtones challenge readers to build on previous forms of anime to gain new understandings. Peter's experience of reading Naruto reveals sophisticated reading practices, such as an understanding of past and present storylines, and different textual representations, such as comic books and websites. Patty's awareness of the distribution of Webkinz trading cards, charms, pet clothing, pet carriers, and bookmarks shows how ubiquitous these products have become, and how they are capable of influencing the reading worlds of adolescents.

In this article, we discussed how two specific websites, based on the anime character Naruto and the virtual pets of Webkinz, have become central literacy sites for two adolescents. Our findings suggest that the reading skills used by students to bring meaning to their digital practices are much more intricate

than might be thought, and often include both a comprehension of design, and a personal engagement with the sites. This can lead to complex expressions of how language is represented and communicated. Digital texts offer many ways for readers to experience the reading process.

To understand the complexities of reading online, teachers need to understand how the reading of linear print text forms differs from the reading of digital texts. Digital texts depend more readily on the design and representation of language and thus require a semiotic understanding on the part of the reader. Online reading trajectories offer multiple genres and cross-genres, often extended through the creator's distribution of the site—for example, as might be found in the complex back story behind Naruto, or in the many layers of interaction on the Webkinz site. This means that reading content online requires a repertoire of skills, from interpreting visual clues, to mastering the nuances of subtext, to following ideas in a nonlinear fashion, to decoding of simple reading. Furthermore, adolescents need a critical awareness of the semiotics of language, (i.e., language as design), which is essential to the critical understanding of the composition and production of digital texts.

Understanding the digital reading practices of youth is quite complex. The average English teacher is still teaching reading using traditional texts, the printed word as found in a standard text, and applying this to the reading of digital texts. When one comes to understand the design inherent in digital texts, one comes closer to bridging this gap between the digital realm of literacy and the traditional. More importantly, without this understanding, educators are only scratching the surface of their students' learning capacities.

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