10

REAL-LIFE MEANING IN SECOND LIFE ART

Palmyre Pierroux

There are powerful, optimistic discourses concerning the extent to which young people are "digital natives," mastering a broad array of digital tools, craving interactivity, and communicating in fundamentally changed ways (see e.g., Prensky, 2006; Tapscott, 1998). Research nonetheless suggests that the "Net generation" may be far less technology literate than such scenarios presume, and there is an acknowledged need for studies that take into account the realities of everyday environments in order to understand the impact of technology on youth culture in general, and on young people's learning in particular (Buckingham, 2008). Such studies are particularly important for learning research because of tensions between the enabling and open character of new social network technologies on the one hand, and traditionally authoritative and closed knowledge practice traditions in learning institutions like schools and museums on the other (Lankshear & Knobel, 2006).

These tensions are apparent in the frequent dismay of teachers over the extent to which the activity of producing and sharing content in personal social networks has made its way into computer use in Norwegian classrooms. In upper-secondary schools in Norway, students may work on written assignments using books and laptops while searching Wikipedia, listening to music on iPods, trawling YouTube and Facebook, formatting images, downloading assessment criteria from an LMS, chatting on MSN, and text messaging on mobile phones.

On class field trips some of these technologies—mobile phones—move physically with teens from the classroom into other settings that are markedly not digital, including art museums. The potential of mobile and ubiquitous technologies to support learning within and across settings is thus a trend explored in education research. Museum education departments, for example, are increasingly seeking ways of integrating technologies into learning activities for young people based on the knowledge that identity, social production, and personal technologies are uniquely coupled in the multiple literacies, or *multiliteracies*, of youth culture (Paris & Mercer, 2002; Schwartz & Burnette, 2004).

In this chapter, I explore the notion of multiple literacies in the context of young people's (17- and 18-year-olds) pedagogical use of mobile and social technologies in encounters with contemporary art. However, my concern is not with the particular features of these technologies or their considered impact on institutional learning settings. Rather, I consider ways in which technologies—in conjunction with other semiotic tools and systems—mediate meaning-making, specifically on art museum field trips. The empirical material for my analysis of the role of multiple literacies for meaning-making is taken from a 3-week pilot study of *Gidder* (Groups in Digital Dialogues), a wiki-based learning environment designed for mobile use by curators, teachers, and high school students on art museum field trips. I first present a case that follows students as they use the learning environment *Gidder* to interpret a work of art across classroom and museum settings. I contrast this case with data from another student group that chooses to interpret a different work of art, namely a video installation made in a virtual world called Second Life. The usefulness of multiple literacies as analytic concept is explored in considering how discourse, disciplinary concepts, online games, mobile phones, and a wiki-based learning environment mediate meaning-making and engagement with contemporary artworks in these two data sets.

The chapter is organized as follows. I first present the perspective on literacy and meaning-making that frames this research. I describe the design of the study and the methods used in collecting, preparing, and analyzing empirical material, and I analyze students' discourse, interactions, and text production in two settings—the art museum and the classroom. I conclude with a discussion of contemporary art as a discipline or knowledge domain, and the significance of multiple literacies as a perspective for analyzing meaning-making in art.

MEDIATION, MEANING-MAKING, AND MULTIPLE LITERACIES

Notions of literacy have broadened from a language studies focus on the advancement of skill and competence in reading and writing to encompass the changing, multiple literacies entangled in acting in different cultural contexts, including multimodal digital environments (Gee, 1990; Group, 1996; Lankshear, Gee, Knobel, & Searle, 1997). *Multiliteracies* is a term coined by New London Group (1996) to describe how people master changes in language, modes of text production, and interpretation in contemporary media. As opposed to a discrete skill or competency associated with a curriculum subject or digital media (Tyner, 1998), notions of multiple literacies reflect scholarly attempts to link processes of learning, instruction, and identity construction with the mastery of new media as they are perceived and sensed in activity in different contexts (Gee, 1990; Gentikow, 2006; Jewitt, 2008; Roth, 2006; Østerud, chap. 9, this volume). As people engage in different social and cultural arenas, media and semiotic resources in the surroundings are drawn upon and mastered *in situ,* as "literacy events" (Barton, Hamilton, & Ivanic, 2000). From this perspective, literacy becomes a "potential for action," and a social site for meaning-making that is "intrinsically collective, contingent, and emergent" (Roth, 2006, p. 279).

This notion of multiple literacies as the potential to act, participate, and make meaning *in situ* may be likened to a sociocultural perspective on human development and meaning-making as *mediated* by semiotic tools and cultural artifacts. Mediation is a concept in sociocultural perspectives that stems from psychologist Vygotsky's (1978) aim to counter behaviorism's stimulus–response model of cognitive development. Vygotsky proposed the concept "mediated activity" when identifying sign use as key to social and biological development. This concept of mediation takes up Hegel's claim that human beings by nature are in a mutually constitutive relationship to objects and other human beings that is mediated by tools, both physical and mental (Hegel, 1979; Marková, 1994). From a sociocultural perspective this means that in order to understand how humans think, develop, and relate to the world we need to pay attention to how semiotic systems and tools are used and adopted in human activity, through interactions and discourse in specific surroundings.

Following Wertsch (1998), the sociocultural term *meaning-making* is used in this chapter rather than learning or Vygotsky's (1978) "internalization." This is because it is less loaded, as Wertsch (1998) notes, but also because meaning-making stresses the affective and mediating role of semiotic resources in human development and *identity*, "a process of personal formation that occurs via cultural resources enacted in a social context" (Holland, Lachiotte, Skinner, & Cain, 1998, pp. 281-282). Meaning-making is thus linked to mastering the semiotic and social language of art but also entails a personal engagement and agency in the meanings that are put forth, in the process of appropriating or "'buying into' an existing set of linguistic terms and categories" and making them one's own (Wertsch, 1998, p. 55).

BRIDGING MEANING-MAKING ACROSS SETTINGS

From a pedagogical perspective, both museum and classroom settings may be considered multimodal, social sites in which ideas, interpretations, and judgments about art are tested for relevance and coherence (Wells, 1999). What are some of the differences in how meaning-making is conceived and practiced in these respective settings? Although there is a long history of collaboration between the institutions, it only is in recent years that research has identified some of the unique and distinct characteristics of "free-choice" learning in museums and begun to articulate how these conditions differ from more formalized learning activities in schools (Falk & Dierking, 1997; Griffin, 2004; Pierroux, 2005). Museum field trips fall somewhere in between what are generally referred to as formal and informal learning settings, as they often are strongly mediated through such institutionalized tools as teachers, museum guides, worksheets, exhibition design, and curriculum (Bamberger & Tal, 2006). However, as argued elsewhere, the significance of institutional praxes for meaning-making on museum field trips needs to be framed as an empirical as well as theoretical problem in museum learning research (Pierroux, 2010).

In high school, students with art as a "major" subject typically are beginning a process of appropriating theory into their identities as people who make and know something about art. Lectures on art history are included in the curriculum, and students are expected to be able to use disciplinary concepts in analyses of expressions in art and design (Hardy, 2006). This means appropriating critical ways of looking, concepts, and a professional language (Bakhtin, 1986) to articulate associations, reflections, and emotions engendered in encounters with art. Curators often support teachers in preparing for and following up on museum visits by means of pre- and post-visit materials and activities that correspond to age, grade level, theme, and discipline. Museum field trips, videoconferencing and distance learning, and Web-based activities are among the many means of bridging and integrating classroom learning with art encounters in museums (Griffin, 2004; Hubard, 2006; Mathewson-Mitchell, 2007; Newman, Falco, Silverman, & Barbanell, 2007).

It is in this context that new mobile and social networking technologies are being explored in museum outreach programs and in schools. The highly motivated engagement on the part of young people to participate in, contribute to, and collaborate on Web-based communities "anywhere, anytime" is representative of a new mindset, according to Lankshear and Knobel (2006). This mindset has emerged with *enabling* technologies and aligns with, for example, museum visitors' motivations to document, manage, and share experiences on a museum's Web site or social networking sites like YouTube, Flickr, Facebook and MySpace.[1] However, as social and personal technologies appropriated by young people increasingly enter learning settings in museums and schools, literacy tensions emerge, for example, between subjective, participatory, and playful approaches to new media on the one hand and the individual assessment and critical analysis traditions in schools on the other (Buckingham, 2003). Furthermore, Buckingham cautions that "it would be quite false to pretend that young people are already competent users of these new media … the majority of young people are far from being autonomous 'cyber kids'" (p. 176). Some of these tensions are explored in the following empirical analysis of high school students' critical interpretations of contemporary artworks.

RESEARCH DESIGN AND METHODS

The challenge of how to design tasks, mobile phone applications, and social technologies that can support a better integration of museum experiences into pre- and post-visit classroom activities and high school students' meaning-making is the focus of the *Gidder* project at InterMedia, University of Oslo. The data presented in this chapter are taken from empirical material that is part of a larger data corpus. The collected data comprises approximately 30 hours of videotape recorded with two cameras in classroom and museum settings, fieldnotes, wiki and blog texts, and 2 hours of recorded semi-structured interviews with curator, teachers, and students. The participants in the study are a curator from the Astrup Fearnley Museum of Modern Art in Oslo, one high school teacher, and 30 students specializing in art, using both digital and traditional media (see Fig. 10.1).

The pilot was designed as an intervention in the existing practices of the school and museum, respectively, to investigate how tasks and technologies can be designed to better integrate the reflections and experiences that students have in encounters with art in museums into classroom practices, including text productions and oral presentations.[2] The main technologies are students' own mobile phones and a Web site (wiki-based) that contains a mobile blog feature. Entries to the blog are made either by writing on a computer or by "texting" short messages and multimedia messages from a mobile phone.[3] The *Gidder* learning environment was developed by a team of programmers, education scientists, and interaction designers at InterMedia's lab and with the participation of the museum curator, the teacher, and six students from the participating high school (Pierroux, 2009).

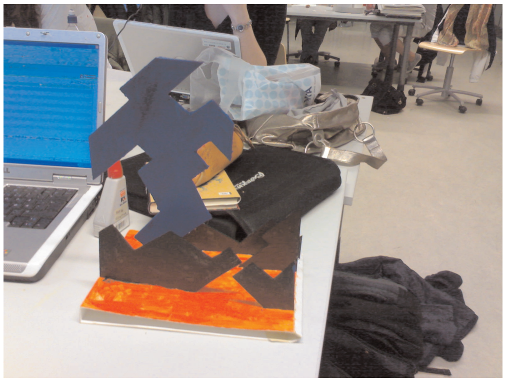


Figure 10.1. High school art students master digital and traditional media in the classroom.

Research in the *Gidder* project follows several strands and is grounded in ethnographic methods. Data presented in this chapter were selected and analyzed using interaction analysis (Jordan & Henderson, 1995), after reviewing approximately 4 hours of videotape, fieldnotes, student texts, blog entries, and phone logs. The selection of the units of analysis was made based on the potential of the data to convey a rich description of the students' activities and interactions in exploring the research question: How are multiple literacies and multimodal resources made relevant in the students' meaning-making processes?

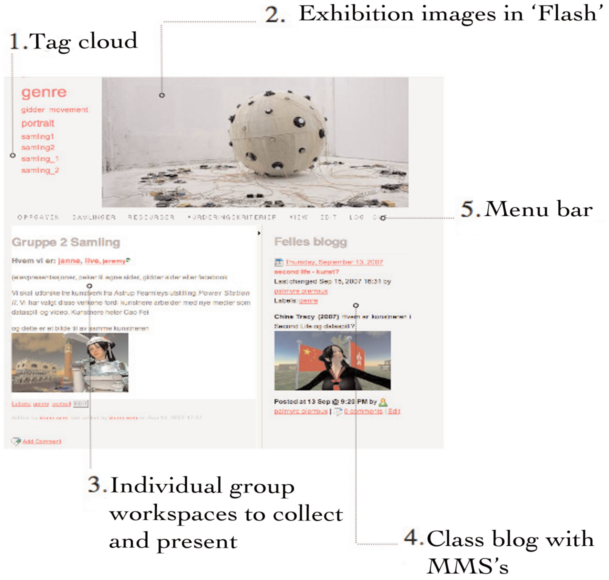
TASK AND TECHNOLOGIES

The task for the students was developed in consultation with the participating teacher and incorporates aspects of the Norwegian national curriculum for high school art majors,[4] findings from an ethnographic study of existing classroom and field trip practices, and characteristics of pre- and post-visit activities that museums typically employ in their work with schools. According to the curriculum, students at this level are expected to be able to (a) use disciplinary terminology in conversation, discussion, and presentation of art; (b) recognize forms, materials, and images from different cultures in our own times; (c) examine, interpret, and use information from texts and images to increase understanding of the discipline; and (d) use information and communication technology in work with layout, presentation, and documentation.

In the study, the students worked in groups of two and three to prepare and present to the class interpretations of artworks from an exhibition of contemporary Chinese art at the Astrup Fearnley Museum of Modern Art, a prominent, privately owned contemporary art museum in Oslo. First, in the classroom 1 week prior to the museum visit, the students looked through the *Gidder* wiki, discussing images and information provided by the curator about the artworks in the exhibition. Each group selected three works that they found interesting, and wrote briefly about these works in their group's own space in the wiki. They "labeled" the content they produced according to its main idea or concept, which then appeared in a tag cloud (see Fig. 10.2). By clicking on labels in the tag cloud, students can view, compare, and discuss how other students use concepts, ideas, and descriptions in relation to specific content in their blog entries.

In addition to a database of images and information provided by the curator, resources in the wiki include a description of the task, instructions for using the wiki, links to relevant Web sites, assessment criteria from the teacher, and collective contributions to the wiki, accessible through the tag cloud and class blog.

Second, at the museum the following week, the students used their own mobile phones to document their reflections and collect more information about the works they had selected beforehand. They wrote text, took pictures, recorded interviews with each other and the museum hosts,


1. Tag cloud
2. Exhibition images in 'Flash'
5. Menu bar
3. Individual group workspaces to collect and present
4. Class blog with MMS's
genre
gidder movement
portrait
samling1
samling2
samling_1
samling_2
OPPGAVEN
SAMLINGER
RESSURSER
VURDERINGSKRITERIER
VIEW
EDIT
LOG OUT
Gruppe 2 Samling
Felles blogg
Add Comment

Hvem vi er: janne, live, jeremy

(elevpresentasjoner, peker til egne sider, gidder sider eller facebook

Vi skal utforske tre kunstverk fra Astrup Fearnleys utstilling *Power Station II*. Vi har valgt disse verkene fordi kunstnere arbeider med nye medier som dataspill og video. Kunstnere heter Cao Fei

og dette er et bilde til av samme kunstneren

Labels: genre portrait

Thursday, September 13, 2007
second life - kunst?
Last changed Sep 15, 2007 16:31 by palmyre pierroux
Labels: genre

China Tracy (2007) Hvem er kunstneren i Second Life og dataspill?

Posted at 13 Sep @ 9:20 PM by palmyre pierroux | 0 comments | Edit

Figure 10.2. **Main features in first *Gidder* prototype.**

and made video recordings, and texted this material to the class blog as short and multimedia messages. Students also tagged their messages using labels of their own or those provided by the teacher and curator.

Finally, back in the classroom the following week, the students used the wiki resources and information in the blog, which now included video and audio recordings, text, and images from the entire class, to collaboratively produce a text in their group space explaining their selection, and analyzing and interpreting the selected works. Finally, the groups made oral presentations of their respective collections on the following day to the class, the researchers, and the curator. In the following sections, I present and analyze data from observations of two different groups of students as they participated in these classroom and museum activities.

CASE 1

Pre-Visit Classroom Activity

In the first case, videorecordings were made of a group of three students as they worked in both classroom and museum settings. They first collaborated in the classroom, both face to face and individually in the wiki, to select works prior to the museum visit. They divided the labor of reading information and writing brief texts in their group wiki to describe the works they were interested in. Artist Xue Tao's work titled *Rope Coil* (Fig. 10.3) is one of the works they select from the database of images provided by the curator. The students read English texts that the curator had provided about this work, and they translated and incorporated this infor-

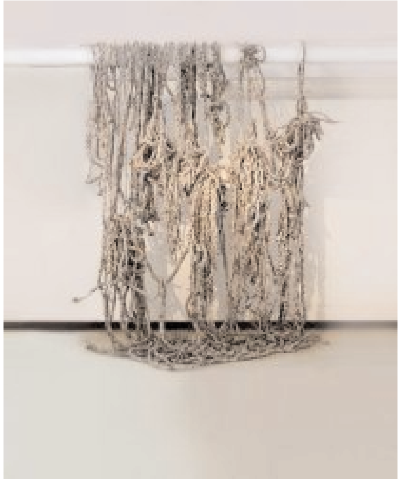


Figure 10.3. Xue Tao, Rope Coil, 2006. (Newspaper and latex. Courtesy of the artist and Contrasts Gallery, Beijing)

mation into their Norwegian text in their group wiki space. This included, among other information, how the artist used newspaper, a worthless material, as a means of exploring how art objects become valuable or interesting.

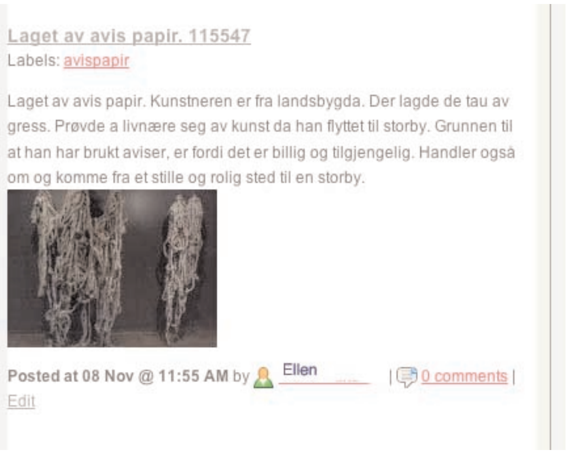
Excerpt From Pre-Visit Text

> In Norway we have in modern times become more accustomed to how art can be beautiful and valuable independent of what kind of material is used. In China on the other hand there has been a longer tradition of using more expensive materials like gold and silver than in Norway. Therefore it can be more difficult for Chinese people to see the value in an artwork made of such a simple material as newspaper.[5]

The students also refer to the curator's text when writing that newspaper perhaps symbolizes the increasingly important role of media in Chinese society. They contribute their own reflections, suggesting that the chaos and disorder of the rope may "perhaps have something to do with the rapid changes and developments in China."

Museum Visit

At the museum, group members are active in using their mobile phones to interview and record each other about works of art, and to send these audio recordings and other media to the blog. One of the two girls in the group, Ellen,[6] asks the museum host standing nearby about the *Rope Coil*



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Labels: avispapir

Laget av avis papir. Kunstneren er fra landsbygda. Der lagde de tau av gress. Prøvde a livnære seg av kunst da han flyttet til storby. Grunnen til at han har brukt aviser, er fordi det er billig og tilgjengelig. Handler også om og komme fra et stille og rolig sted til en storby.

Posted at 08 Nov @ 11:55 AM by Ellen | 0 comments | Edit

Figure 10.4. Blog entry sent by mobile phone during museum visit.

work (see Fig. 10.3), and during this conversation new information emerges that was not provided by the curator in the wiki. Ellen uses her mobile phone to take notes as the guide talks, and sends the text with a picture to the blog (Fig. 10.4).

Post-Visit Classroom

The new information, which has been documented as a blog entry, becomes added as a paragraph at the end of the pre-visit text.

Excerpt From Post-Visit Text

> On Thursday, Nov. 9, we visited Astrup Fearnley Museum, and we got to ask some questions about Xue Tao's artwork. Xue Tao came from a small village in China, where he had the hobby of making rope and other objects from grass. When he moved to a big city he tried to support himself as an artist, which was not easy. The reason he uses newspaper in his art is because it was cheap and accessible. The artwork is about moving from a quiet and still place to a large noisy city. He has kept his hobby but the grass is now replaced by newspaper. The grass symbolizes the village while the newspaper is a picture of the city. The many knots convey his sense of his confusion and frustration from this period when he moved.

Analysis of Case 1

In this data, Ellen uses the information blogged from the museum visit to supplement the group's pre-visit interpretation. Although the wiki allows easy editing, this post-visit text is incorporated as a blog-like supplement at the end of the original text, which was based mainly on curator information and the group's observations of digital images of the artwork. Although the *pre-visit text* frames an understanding of the artist's use of material from the curator's art history perspective of "challenging modern concepts of value in art," the *post-visit text* points to the pragmatic and symbolic use of newspaper as closely linked with the artist's experience in moving from small village to large city. Furthermore, their initial tentative interpretation of the chaos and disorder of the rope as "perhaps have something to do with the rapid changes and developments in China" is now interpreted as conveying "his sense of his confusion and frustration from this period when he moved."

CASE 2

The second set of data investigate a group of students' first meeting with an artwork in the museum, and their interpreting work in the classroom the next week. The artwork is *I Mirror* by Chinese artist Cao Fei, one of many younger artists who use digital technology in works that comment, mirror, and reflect on contemporary life, including the ways in which technology shapes new social networks, interactions, and collective practices. China Tracy is the name of the artist's avatar in Second Life (SL), which is a multiuser online three-dimensional (3D) virtual environment that is populated by avatars. SL was first made available in 2003 and is today inhabited by more than 1 million casual and heavy players, or "residents," who purchase and develop property, establish businesses, host events, participate in groups and communities with similar interests, shop, and have relationships.[7] There are many activities to explore in the virtual world by teleporting to different places, where meeting people is as simple as clicking on another avatar and viewing their profile.

For the exhibition in Oslo, Cao Fei produced a video by editing her avatar China Tracy's experiences into a *machinima* documentary. Machinima (muh-sheen-eh-mah) is filmmaking within a real-time, 3D virtual environment, often using 3D video-game technologies.[8] This filmmaking genre is one of many innovations in digital technologies and platforms connected with SL. The video is presented in a mirrored plexiglass pavilion that the artist designed especially for the exhibition (see Fig. 10.5). Visitors are invited to remove their shoes, enter, and be seated on pillows while watching the film. There is a soundtrack and occasionally text (subtitles)

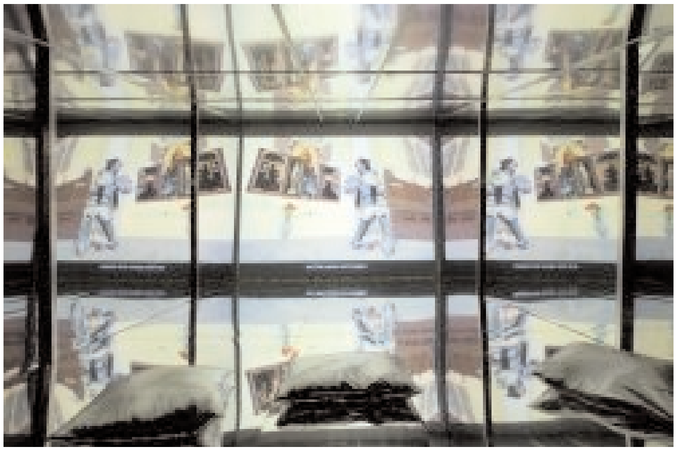

Figure 10.5. Cao Fei, *I Mirror, 2007* (Video installation, Variable dimensions. Courtesy of Courtesy of Vitamincreativespace, Guangzhou)

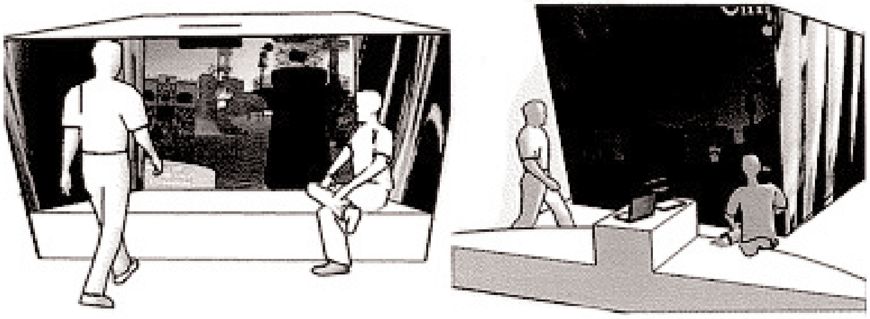

Figure 10.6. Cao Fei, *I Mirror*, Installation drawings (Courtesy Astrup Fearnley Museum)

with the characters' conversations in the digital life world. It also is possible to walk around the pavilion and see into the room from outside of the structure, and to view the film as it is projected onto the screen at the rear (see Fig. 10.6). In this outside space there is built-in seating and two laptops where visitors can also log onto SL with their own characters.

Museum Visit

We follow a group of three students, Terri, Brian, and Mary, who see and hear the video shortly after arriving at the museum. This is not an artwork they had selected beforehand, but they climb into the pavilion and settle onto pillows at the front of the darkened space, facing the main screen (Fig. 10.7). A soundtrack plays a dreamy kind of music and computer animated figures move about in a predominantly dark blue space. The characters' movements are slow, and text in English and Chinese occasionally types its way across the lower part of the film. This running text at the bottom of the screen includes references to RL and SL. The three students quickly agree that they can "pick this artwork instead" for the assignment. The group talks aloud with other students in this shared, social space, taking pictures and recording the video on their mobile phones, and chatting in Norwegian.[9]

Brian and Terri watch the film and, after some discussion, agree that this must be The Sims, and that the text at the bottom of the screen marked "SL" stands for Sims Life.[10] After watching the film with other students in the pavilion for several minutes in complete silence, Terri comments aloud that "art today really seems different," and the group voices immediate agreement. Terri pauses, then continues, "but maybe art has always seemed different to people at the time?"

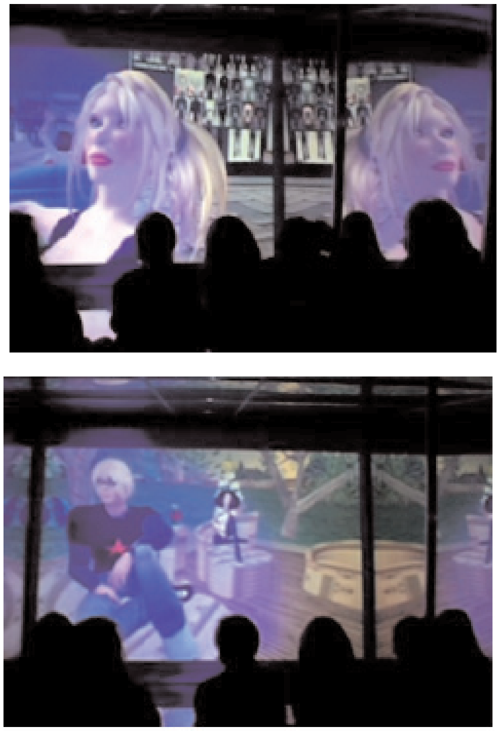

Figure 10.7. A and B: Students seated inside mirrored pavilion.

The group sits for a few more minutes, watching the film and taking pictures of the film and themselves, and then Brian suggests that they leave. The group leaves the pavilion and on seeing the computers at the back, investigates whether there is connection between playing the computer game on the laptops in the seating area and the actions in the film they have just seen. Soon another group moves into the space and reads “Second Life” and “Real Life” aloud from an information sheet mounted on a stand near the pavilion. Brian and Mary pick up on this “answer” to their question about the meaning of SL, and excitedly share the information with Terri, who acknowledges it quietly before leading her group into other parts of the exhibition.

Post-Visit Classroom Activity

In the classroom the following week, Mary, Brian, and Terri are seated together at a table with their respective laptops, working on their interpretation of *I Mirror* to be presented in written and oral form the next day.

There are three other students also seated and working at the table, and the classroom is typically noisy as discussion takes place across the table. Terri is concentrating on the new challenge of designing and formatting their wiki space for the presentation of their work. Since simultaneous editing of wiki pages is not possible, Mary and Brian set to work writing text in a *Word* document on Brian's laptop, which will be pasted into the wiki space once Terri's design is done. Mary has her laptop open to the wiki, but at Brian's urging she shifts her focus to writing the text with him, oriented toward his screen (Fig. 10.8).

Terri, who has been an active leader of the group's activities so far, establishes a clear division of labor. Her own role will be to design the form of their presentation in the wiki, and although seated next to Brian and Mary, she clearly indicates through her gestures, talk, and activity that she is not participating in their work to develop the content. As Brian prepares to type he indicates that Mary should begin to dictate. Mary begins to say what "the film" is about, but she immediately corrects herself, saying that it is not a film but a game, or rather "a film of a game," specifically an Internet game. Terri, listening on, laughs at Mary's confusion and jokingly proposes *gilm* (game-film) as a new genre. Next Brian proposes The Sims as the game genre, bringing discussion from the museum visit into this activity, and Mary somewhat distractedly concurs "like Sims." It is clear that Brian is not happy with the way the interpretation is developing. He points out that what they have written is "really bad," and that even though it is an oral presentation they still have to produce a written text. Mary agrees, but says that this can be more like "keywords."

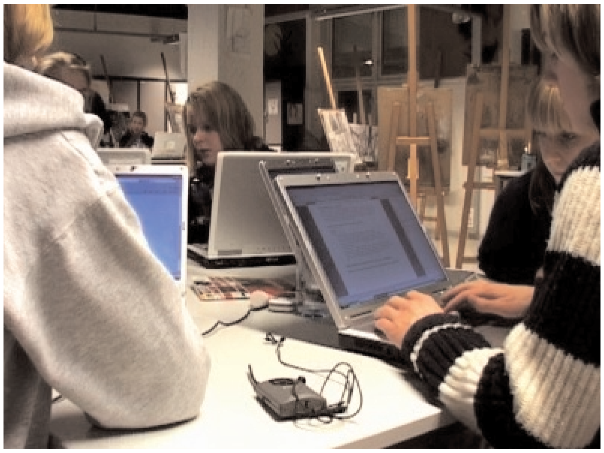

Figure 10.8. Terri, Brian, and Mary working in class after museum visit.

1. Brian: (…) OK, we'll just keep writing and fix it up later. The film starts with (looks over at Mary) that you choose a city and then continue by building houses?
2. Mary: But we have to get in this thing with SL and RL, which is, like, *Second Life*?
3. Brian: (looks at Mary) Yeah. (looks back at screen) We have "first you choose a city and then begin to build a house." Or is it people?
4. Mary: Yeah, make people, and in the first film there is only one person. But, that's only because … first there was only one person. But there was actually more than one person already there.
5. Brian: Yeah
6. Mary: But does that mean that, like, there's only one who's controlling …? (laughs) You know what I mean?
7. Brian: Yeah, I know what you mean. (pause)
8. Mary: Yeah. OK. We don't have to think about that.

Brian and Mary continue to work alone for 45 minutes on the interpretation without accessing any of the resources available in the wiki, online, or in the textbook. The following excerpt is taken from the text produced by the students during this classroom activity.

Excerpt From Post-Visit Text

> It is a film of a game, like *Sims*, where two people talk together. The film starts by choosing a city and building a house, first there is only one person, but after some time there are more. It works like a factory, where one produces people. In the film you saw two parallel worlds, the one was real life and the other was *Second Life*. As mentioned, there was only one person in the beginning, a Chinese girl. Real life was her genuine life, where she was unhappy and lonely, while *Second Life* was more like a dream world, where she was happy and had found the love of her life. *Second Life* was her life in the game.

Analysis

In the classroom, labor was divided to allow Terri to work with the wiki presentation. Brian describes the beginning of *the film* by referring to The Sims, and how one begins by building houses. In line 2, Mary points out that they need to explain SL and RL in the film, which she thinks means Second Life. Brian agrees, but continues to focus on how one plays The

Sims. This causes confusion for the students because in The Sims computer game the player can to a large extent control the environment and how it grows and is populated. Mary points out that there are differences between The Sims and the "SL/RL thing" and in line 7 Brian accepts the problem but has no further contribution to solve the problem. In line 8 Mary acknowledges that there are complexities here that they cannot master and concludes that these are not relevant to their interpretation task.

In the text produced by Brian and Mary we see The Sims reference that the students wrestled with in both museum and classroom. The interpretation first concentrates on explaining how the game "works," which is done by referring to computer game features from The Sims, not SL. It then describes the film of a lonely Chinese girl, and her Second Life, which was a dream world, also in the film. In other words, the students seem to understand *the film* as depicting two parallel worlds, one in which the teenage character China Tracy is more or less herself, lonely in Real Life (RL). The other scenes in the film with a more fantasy-like character, such as ballroom dancing with a stranger, are seen as depicting China Tracy's dream of escaping this loneliness and living a Second Life (SL). This is the students' interpretation of what RL/SL means in the film. In summary, the students are concerned with describing the film as a game, the characters in the game, the way the film and the room made them feel, and the motivations of lonely people who play the game as the message of the film.

DISCUSSION OF CASES

The two cases illustrate the significance of young people's multiple literacies for their approaches to (a) solving school tasks using different information types and resources; (b) mastering the social and mobile technologies designed in *Gidder*; and (c) mastering and appropriating concepts in contemporary art. In Case 1, the data allows us to trace relations between resources and literacies that are made relevant in the students' interpreting work. This group prepared for the museum visit by navigating through the curator's texts and images in the wiki, discussing and choosing three artworks, reading information in English about each of them, and then translating a summary of the main points into Norwegian in their group space in the wiki. At the museum, they observed and reflected on the artworks, collaboratively and purposefully used the different modes available in their phones to gather audio, visual, textual, and video information, and they interviewed each other as well as the museum hosts while standing directly in front of the art. New multimodal information was inscribed first into the class blog, then into the group's wiki text and oral presentation during the post-visit classroom activity. These multiple literacies—performing collaborative school tasks, mastering wiki and mobile phone technologies, and appropriating terms, concepts, and the language of contemporary art as a knowledge domain—are enacted in a meaning-making process that spans classroom and museum settings. The students identify *in situ* specific resources that are relevant for their purposes, and the learning environment integrates this multimodal information into a trajectory of activities that mediate meaning-making.

In Case 2, the concept *multiple literacies* may be used analytically in relation to the activities in at least three respects. First, there is a literacy problem in terms of mastering a new digital presentation tool, the wiki, resulting in an unproductive division of labor back in the classroom. This breakdown disrupts the potential for a collaborative meaning-making process as Terri effectively removes herself from her group's discussion. In their primary focus on solving the task, literacy in schoolwork may be seen as strongly mediating their meaning-making activity. Second, a literacy problem related to SL and computer games must be solved before the students can critically reflect on the video installation "as art." Although the students' text mentions the intentions of game players to escape problems in the real world, the intentions of the real-life *artist* have no place in the students' meaning-making, neither as the avatar China Tracy in SL nor as the maker of an artwork that uses the virtual world as an artistic medium. Therefore, without intervention from the teacher or other resources to develop their literacies in art, computer games, and wiki technology, the artwork and real-life artist remain indistinguishable for the students from China Tracy and her dream world, both of which remain moored in the virtual world of *gilm*.

CONTEMPORARY ART AS A DISCIPLINARY DOMAIN

How may we understand the students' meaning-making in relation to contemporary art as a knowledge domain? Often regarded as social sites for informal learning, art museums are valued for the experience of authentic artefacts and artworks, and for the opportunity to engage with exhibitions based on personal interest. In art museums, older works are often displayed chronologically, in recognizable canons that are linked to historical representational practices. Canon derives etymologically from both the Latin "rule" and from the Greek "measuring rod," and is defined as an established principle that forms the basis for judgment, as a standard or criterion. Accordingly, the teaching of canons, whether in language, scientific concepts, or in art, has been a main aim of literacy pedagogy (see Roth, 2006; Østerud, chap. 9, this volume).

Modern artworks in permanent collections also may be mounted to convey different canons in artistic expressions and concepts. However, central to the Western narrative of modern art history is the ways in which artists specifically challenged and scrutinized concepts of art and its canons, beginning with Duchamp and the historical avant-garde in the early 20th century. In modern and postmodern art history, then, the equating of mastering art canons with literacy was brought into question. As de Duve (1996) explains, Foucault (1972) showed how canonization transpires and is made apparent through a series of enunciation modes, as the statement "this is art" is repeated, acknowledged, recorded, institutionalized, and presented as the given.

This has led to a situation in contemporary art in which literacy entails a penetrating and critical type of discourse, as *praxis* that is both cognitive and a mode of action (Wartofsky, 1979), interrogating the quality of claims of a work's status as art, accounting for the principles, conventions—and breaks in conventions—according to which judgments of "art" are made, and developing arguments for interpretation and criticism. Curators working in art museums are main producers of this critical discourse through research and the *writing of texts*, drawing on concepts and analytical approaches from new art history, aesthetics, and art criticism, among other disciplines.

However, although professional art discourse certainly shapes narratives and frames meaning in museum exhibitions, it is not the only literacy relevant for visitors' meaning-making. In museum research literature, the concept of multiple literacies is taken up to extend the semiotic primacy given texts and "the visual" to include a multitude of sensory and semiotic modes that communicate meaning (Leinhardt, Crowley, & Knutson, 2002; Mathewson-Mitchell, 2007). These multimodal resources, borrowing from Kress and van Leeuwen (2001), include the selection, mounting, and semiotic content of the actual artworks; the spatial organization of the museum and exhibition architecture; the colors, lighting, and materials used in the exhibition design; conversations with museum hosts, friends, and family; physical gestures and interactions of other visitors in the space; labels, brochures, and diverse texts; audio tours; and information rooms with films, books, and digital resources on computers and other interfaces. The data analyzed in this chapter demonstrate the ways in which such semiotic complexity enters into students' interpretations and their work to master concepts in contemporary art.

ART AND REAL-LIFE MEANING

In this chapter I explored from a sociocultural perspective the notion of multiple literacies in an analysis of high school students' meaning-making in encounters with contemporary art, as mediated by social and mobile technologies, among other semiotic resources. In the first case we see that student's interpretations of art historical information garnered from texts and through discourse, is developed in sequence with specific technology features that scaffold and mediate the students' meaning-making. Curatorial perspectives about the artwork are first accessed, discussed, and documented in the classroom using the wiki. Discourse in the museum and images of the physical artwork are then recorded using mobile phones, and these combined activities, experiences, and artifacts mediate the interpretations produced by the students' for their school task. From a perspective on art as a knowledge domain, then, the students not only master "art" as a school subject but also convey a sense of the process in which they appropriate the meaning of this artwork, developing through this trajectory new knowledge about the artist's background and intention that becomes relevant to their interpretation.

In contrast to this "success" data, the second case illustrates how breakdowns in meaning-making can occur on many levels, institutional as well as individual and social. School tasks, new technologies, teachers, divisions of labor, social interaction, semiotic resources, and literacies all are potentially relevant for productive engagement with a knowledge domain. Paradoxically, video recordings from the museum show these students deeply and conceptually engaged with the SL artwork and "real-life meaning" when Terri says "art today seems really different … but maybe it's always seemed different to people at the time?" This critical meta-level reflection at the museum is the very stuff of contemporary art as a disciplinary domain. As mentioned, interrogating the quality of claims of a work's status as art becomes the basis for arguments for interpretation and criticism; it is through this process that meaning in art is not only mastered but "made one's own." Yet this reflection remains undocumented by the students and is not taken up in the interpretation process as Terri, Brian, and Mary instead turn their attention to mastering new representations and tasks in the school setting.

The study of activities as they unfold in natural settings thus makes apparent how institutional features are intertwined with the literacies, tasks, and situated resources—including specific technological features—on which students' draw in their meaning-making. Analysis of interactional data and multimodal texts describes the complex and essential relations between the inscription of resources and patterns of participation in the respective settings of art museum and school and their potential to mediate the development of a deeper understanding of contemporary art as a disciplinary domain. A sociocultural perspective on human discourse and interaction within and across space and time also allows insight into mediated meaning-making processes and their relation to more general concepts of literacy and culture. It is the potential for acting, negotiating and making sense of a complexity of artifacts, media, and disciplinary knowledge that describes the notion of multiple literacies and its significance for human and cultural development.

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NOTES

1. See for example, http://newmedia.walkerart.org/aoc/index.wac, http://modblog.tate.org.uk/, http://www.ookl.org.uk/web/whatisthis.php.
2. Ethnographic studies, co-design workshops, and interviews were conducted in connection with the design process.
3. MMS: Multimedia Message Service. All students received 100 Norwegian crowns (approximately $15) at the beginning of the pilot to cover their phone expenses.
4. *Studiespesialisering med formgivingsfag* (Art Major), see http://udir.no/templates/udir/tm_Programomr%C3%A5de.aspx?id=2101&poid=246173.
5. Author's translation from Norwegian.
6. Pseudonyms are used throughout.
7. For a discussion on how Second Life users are tallied see http://secondlife.reuters.com/stories/2008/01/31/data-shows-growing-divide-between-casual-and-heavy-sl-users/.
8. See http://www.machinima.org/machinima-faq.html.
9. All talk and text is translated into English by the author.
10. In Norway, The Sims is popular with younger children and teens as a stand-alone computer game played at home, but the game has, through several iterations, also been an online virtual world since 2002, with similar aesthetics and features as Second Life. The Sims Online was closed down February 27, 2008.

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