

Digital Media and Learning as an Emerging Field, Part I: How We Got Here

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Introduction

Over the past few years, there has been a rapidly growing interest in digital media and learning; in fact, a new field may be emerging around this interest. Academics from a variety of different disciplines are contributing innovative research and interventions to this potential cross-disciplinary field (see, for example, the edited collections in the John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning: Bennett 2007; Buckingham 2007; Everett 2007; McPherson 2007; Metzger and Flanagin 2007; Salen 2007a). The question I want to ask here is this: How can such work achieve enough commonality for contributors to engage in fruitful collaboration and the accumulation of shared knowledge as part of a new and integrated field of study?

While this will be a key question in this two-part article, other questions must be addressed before I get to it directly. In Part I, I need to first consider what the emerging field of work on digital media and learning is, and how we, from different directions and disciplines, came to this shared interest. Part II will offer a proposal for moving forward in the form of “worked examples.”

Part I: How We Got Here

I want to consider the nature of several other emerged or emerging interdisciplinary fields of study, ones that are closely related to the concerns of the digital media and learning effort. One is the New Literacy Studies (NLS), an endeavor that proposed to study literacy (reading and writing) as a sociocultural achievement rather than a cognitive one. Another is Situated Cognition Studies, a contemporary approach in the Learning Sciences to learning and the mind that

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stresses the importance of experiences in the world to human thinking and problem solving and the ways in which these experiences are mediated by various tools and technologies. Yet another is the New Literacies Studies (not to be confused with New Literacy Studies, described above), an area that studies new “literacies”—new types of “literacy” beyond print literacy—especially new “digital literacies” and literacy practices embedded in contemporary popular culture. Finally, there is New Media Literacy Studies, an area related to an older concern with “media literacy,” where “media literacy” has to do with the ways in which people give meaning to and get meaning from various media.

My own interest in Digital Media and Learning (accepting it, for the moment, as an emerging field of study) came by a route that led from the New Literacy Studies to an interest in video games and learning and thus to the New Literacies Studies. Others took other routes. We have all come from different places to this interest. But are we in the “same place” now? If so, what place is that, exactly? How can we, coming from different disciplines and having taken different routes here, collaborate to define and develop this new place, our shared interest in Digital Media and Learning?

Let me say a word about video games, a field to which I have contributed, and then continue on to what I see as some already-shared themes. After these introductory remarks I will discuss the emerged and emerging fields I mentioned above, and then propose a way to achieve the commonality needed for collaboration and the accumulation of knowledge to strengthen what has been, to date, a vibrant yet nascent field at the intersection of digital media and learning.

In my book *What Video Games Have to Teach Us About Learning and Literacy* (Gee 2003/2007; see also Gee 2005, 2007), I argued that good video games—which are often long, difficult, and complex—incorporate good learning principles in order to be learned and mastered. These principles, I argued, are also found in recent research in the Learning Sciences about how humans learn best (Barab and Dede 2007; Barab and Roth 2006; Bransford, Brown, and Cocking 2000; diSessa 2000; Gee 2004; Hawkins 2005; Sawyer 2006; Wilensky and Reisman 2006).

Video game designers did not acquire these learning principles from the Learning Sciences, nor did the Learning Sciences use video games as a basis for

research. This was convergent development. Video games are largely just problem-solving spaces and if people found them difficult to learn or unengaging, the companies that make them would go out of business. So it is perhaps not surprising that game designers have hit on—and even innovated—many of the learning principles that contemporary research in the Learning Sciences has argued work for deep and effective human learning.

In my book I argued that we should use these principles, with or without games, for learning in and out of school in areas that we value. The work on games and learning has led, however, to more interest in using not only the learning principles, but video games themselves (both commercial entertainment games and so-called “serious games”) in schools and other learning sites (Shaffer 2004, 2005, 2007; Shaffer et al. 2005; Steinkuehler 2006, 2008a, 2008b; Squire 2006, 2007; Squire and Jenkins 2004).

Other people came to the issue of digital media and learning by way of other digital technologies than video games—technologies such as social networking tools, media production tools, information tools like blogs and wikis, or a great many others. However, nearly everyone who has come to this area of study has been impressed by the ways in which popular culture today is using digital tools and other devices to engage in powerful, deep, and complex thinking and learning out of school (Gee 2004, 2007; Ito, in press; Jenkins 2006a, 2006b; Johnson 2005). Popular culture has thus itself become a focus of the new work in this area.

The emerging field of Digital Media and Learning is not just the study of how digital tools can enhance learning. It is also the study of how digital tools and new forms of convergent media, production, and participation, as well as powerful forms of social organization and complexity in popular culture, can teach us how to enhance learning in and out of school and how to transform society and the global world as well.

So in many respects the contemporary interest in digital media and learning needs a better name or label, because we are concerned with more than just new technologies in any narrow sense. A new label would have to incorporate the themes of convergent media, production, participation, fluid group formation, complexity, and popular culture.

I will not offer a new name (for the time being, I will simply abbreviate it as DMAL), precisely because

I want to problematize what it means to talk about Digital Media and Learning as an “emerging field” or to talk about emergent fields at all. And we will see that Digital Media and Learning as an emerging field is related to, in complex ways, a number of other emergent or emerging fields.

I will discuss DMAL as an “emerging field” and consider its potential core contributors or “members” only as people who want to study digital media and learning in the larger context I have tried briefly to delimit above (convergent media, production, participation, complexity, and popular culture). Such people will probably all name their interest differently.

The core issue is this: Do people who recognize my discussion of DMAL—whatever they personally call it—have enough in common to serve as the foundation for collaboration and the joint accumulation of knowledge? How can such a common foundation be built to underwrite collaboration, accumulation of knowledge, and a coherent “field”?

The New Literacy Studies (NLS)

Now I want to take up the question of how we came to our interest in DMAL. I will begin with how I got here, because one of my points is that different people got here in different ways and we need to recognize and learn from these different paths. The different paths people took to an interest are a great strength because of the diversity of ideas and methods they bring to the research and practice. But this diversity can also make issues of commonality, collaboration, and the joint accumulation of shared knowledge problematic. At the same time, our different backgrounds influence and inform each other through our interactions.

I will start with an area that was “emerging” many years ago, an area that has both influenced DMAL and suggests implications for how DMAL can develop as a field. In my book *Social Linguistics and Literacies* (1990/1996/2007) I attempted to name what I then saw as an emerging new field of study. I called this field “the New Literacy Studies”; today it is sometimes just referred to as the “NLS” (Brandt and Clinton 2002; Gee 2000; Hull and Schultz 2001; Pahl and Rowsel 2005, 2006; Prinsloo and Mignonne 1996; Street 1993, 1995, 1997, 2005).

The NLS was originally composed of scholars from linguistics, history, anthropology, rhetoric and composition studies, cultural psychology, education,

and other areas (e.g., Bazerman 1989; Cazden 1988; Cook-Gumperz 1986; Gee 1987; Graff 1979; Heath 1983; Scollon and Scollon 1981; Scribner and Cole 1981; Street 1984; Wertsch 1985). These people certainly saw themselves as related in some sense and, for the most part, they knew each other. But they did not then nor later necessarily agree on what—if anything—made them part of one emerging field. Other people, however, did begin to see them as part of something new beyond their specific disciplines.

The NLS opposed a traditional psychological approach to literacy. Such an approach viewed literacy as a “cognitive phenomenon” and defined it in terms of mental states and mental processing. The “ability to read” and “the ability to write” were treated as things people did inside their heads.

The NLS saw literacy as something people did not do inside their heads but inside *society*. It argued that literacy was not primarily a mental phenomenon, but rather a sociocultural one. Literacy was a social and cultural achievement—it was about ways of participating in social and cultural groups—not just a mental achievement. Thus, literacy needed to be understood and studied in its full range of contexts—not just cognitive, but social, cultural, historical, and institutional, as well.

Traditional psychology saw readers and writers as engaged in mental processes like decoding, retrieving information, comprehension, inferencing, and so forth. The NLS saw readers and writers as engaged in social or cultural *practices*. Written language is used differently in different practices by different social and cultural groups. And, in these practices, written language is never isolated from oral language and action. Rather, within different practices, it is integrated with different ways of using oral language; different ways of acting and interacting; different ways of knowing, valuing, and believing; and, too, often different ways of using various sorts of tools and technologies.

For example, people read and write religious texts in one way, legal ones in another, biology texts in another, and texts in popular culture like video game strategy guides or fan fiction in yet another. People can also read the same text in different ways for different purposes. For example, they can read the Bible as theology, literature, history, or as a self-help guide. They can read a comic book as entertainment, as insider details for expert fans, as cultural critique, or as heroic mythology.

And people don't just read and write these texts. They do things with these texts, things that often involve more than just reading and writing. They do them with other people—people like fundamentalists, lawyers, biologists, manga otaku, gamers, or whatever—people who sometimes (often) make judgments about who are “insiders” and who are not.

So what determines how one reads or writes in a given case? Not just what is in one's head, but rather the conventions, norms, values, and practices of different social and cultural groups: lawyers, gamers, historians, religious groups, and schools, for instance, or larger cultural groups like (certain types of) Native Americans, African-Americans, and/or “middle class” people.

For example, Ron and Suzanne Scollon (1981) argued that some Native American and Canadian groups viewed essays (a prototypical literacy form in school) quite differently than do many Anglo-Americans and Canadians. Athabaskians—the group the Scollons studied in the United States and Canada—have a cultural preference to communicate only in known circumstances with people who are already known.

Essays require the writer to communicate to a “fictional” audience—the assumed general “rational reader,” not someone already known—and thus violate a cultural communicational norm for Athabaskians. To write an essay, for Athabaskians, is to engage in a form of cross-cultural conflict. Essays are not “neutral,” they are socially, historically, and culturally value-laden; indeed, how, when, and why they arose in history is a well-studied phenomenon.

People learn a given way of reading or writing by participating in (or at least coming to understand) the distinctive social and cultural practices of different social and cultural groups. When these groups teach or “apprentice” people to read and write in certain ways, they never stop there. They teach them to act, interact, talk, know, believe, and value in certain ways as well, ways that “go with” how they write and read (Gee 1990/1996/2007).

So, for example, knowing how to write a “game FAQ” (a strategy guide for a video game)—or how to read one—requires that you know how game FAQs are used in the social practices of gamers, practices that involve a lot more than just reading and writing. You need to know how gamers talk about, debate over, and act in regard to such things as “spoilers” and “cheats” and “cheating,” all defined as gamers define them, not just in general terms (Consalvo 2007).

The same thing is true of knowing how to write or read a legal document, a piece of literary criticism, a religious tract, or a memo from the boss. You can come to an appreciation of some texts without actually participating in the practices of the group whose texts they are, but you still have to know how the texts fit into those practices. And you can only be a “central participant” if you have actually participated in and undergone an “apprenticeship” with the group (Lave 1996; Lave and Wenger 1991).

So “literacy” becomes plural: “literacies.” There are many different social and cultural practices that incorporate literacy, so there are many different “literacies” (legal literacy, gamer literacy, country music literacy, academic literacy of many different types). People don't just read and write in general, they read and write specific sorts of texts in specific ways, and these ways are determined by the values and practices of different social and cultural groups.

This is why the NLS often studied not literacy itself, but such things as “activity systems” (Engeström 1987), “Discourses” (Gee 1990/1996/2007), “discourse communities” (Bizzell 1992), “cultures” (Street 1995), “communities of practices (Lave and Wenger 1991; Wenger 1998), “actor-actant networks” (Latour 2005), “collectives” (Latour 2004), “affinity groups” or “affinity spaces” (Gee 2004)—the names differed and there are others—but they are all names for ways in which people socioculturally organize themselves to engage in activities. The moral was: follow the social, cultural, institutional, and historical organizations of people first and then see how literacy is acquired and used in these organizations, along with action, interaction, values, tools, and technologies.

The NLS—thanks to its opposition to traditional cognitive psychology (not to mention its hostility to earlier forms of psychology like behaviorism)—had little or nothing to say about the mind or cognition. It paid attention only to the social, cultural, historical, and institutional contexts of literacy. It had little to say about the individual apart from the individual's “membership” in various social and cultural groups. It thus had little to say about learning as an individual phenomenon. Learning was largely perceived—if it was perceived at all—as changing patterns of participation in “communities of practice” (Lave and Wenger 1991).

In my view, the NLS never fully cohered as a field. While there are now books devoted to it as a unitary phenomenon, there was never any attempt

to translate across the diverse disciplinary languages within which different contributors wrote. We each had our allegiances to different academic micro-communities with our own pattern of citations, for instance. Was this a serious problem? In my view it was; perhaps others would disagree. I believe the NLS made less progress—beyond its initial successes—than it might otherwise have done. The issue is obviously germane to the fate of DMAL.

The NLS has obvious implications for work in DMAL. The NLS argued that print literacy is a technology for giving and getting meaning that has no single effect, but many different ones in different social, institutional, cultural, and historical contexts. So, too, for digital literacy. It is also a technology (made up of many different kinds of tools and associated practices) for giving and getting meaning. These tools, too, were considered by the NLS to have no single effect (good or bad), but many different ones in different social, institutional, cultural, and historical contexts. Just as the NLS wanted to study literacy in terms of larger social organizations, DMAL, too, wants to study digital media in terms of the larger social and learning organizations built around them. I will point out later how the NLS—and the other areas I will survey below—has influenced people in DMAL even when and if they have not read most of the literature in these areas.

Situated Cognition

I pointed out above that the NLS talked little about learning at the level of the individual, largely due to its hostility to psychology. However, in the 1980s psychology itself changed. New movements in “cognitive science” and “the learning sciences” began to argue that the mind is furnished not primarily by abstract concepts, but by records of actual experience (e.g., Barsalou 1999a, 1999b; Churchland and Sejnowski 1992; Clark 1989, 1993, 1997; Damasio 1994; Gee 1992; Glenberg 1997; Kolodner 1993, 2006).

Earlier work in cognitive psychology—often based on a metaphor that saw the human mind as like a computer—argued that memory was severely limited, as it is in a computer (Newell and Simon 1972). This newer work argued that human memory is nearly limitless and that we can and do store almost all our actual experiences in our heads and use these experiences to reason about similar experiences or new ones in the future (Gee 2004; P. S.

Churchland 1986; P. M. Churchland 1989; Churchland and Sejnowski 1992).

This newer work came in many different varieties and constituted a “family” of related but not identical viewpoints. For want of a better name, we might call the family “Situated Cognition Studies” (see also Brown, Collins, and Duguid 1989; Hutchins 1995; Hawkins 2005; Lave and Wenger 1991). These viewpoints all believe that thinking is connected to, and changes across, actual situations and is not usually a process of applying abstract generalizations, definitions, or rules.

Situated Cognition Studies argues that thinking is tied to *people’s experiences of goal-oriented action in the material and social world*. Furthermore, these experiences are stored in the mind/brain not as abstract concepts, but as something like dynamic images tied to perceptions both of the world and of our own bodies, internal states, and feelings (P. S. Churchland 1986; Gee 1992; Damasio 1994). Consider the following quotes, which give the flavor of what it means to say that cognition is situated in embodied experience:

Comprehension is grounded in perceptual simulations that prepare agents for situated action. (Barsalou 1999a, p. 77)

To a particular person, the meaning of an object, event, or sentence is what that person can do with the object, event, or sentence. (Glenberg 1997, p. 3)

Increasing evidence suggests that perceptual simulation is indeed central to comprehension. (Barsalou 1999a, p. 74)

Higher intelligence is not a different kind of process from perceptual intelligence. (Hawkins 2005, p. 96)

Human understanding, then, is not primarily a matter of storing general concepts in the head or applying abstract rules to experience. Rather, humans think, understand, and learn best when they use their prior experiences (so they must have had some) as a guide to prepare themselves for action. I will discuss shortly how they do this.

Work on situated cognition goes beyond the digital computer as a model of the human mind. Rather, it often uses as a model so-called connectionist or parallel

distributed computers (i.e., networked) (P. S. Churchland 1986; P. M. Churchland 1989; Churchland and Sejnowski 1992; Gee 1992; Rumelhart, McClelland, and the PDP Research Group 1986). Connectionist computers look for and store patterns (networks of associations) among elements of input from the world. The argument is that humans—like connectionist computers—look for patterns in the elements of their experiences in the world and, as they have more and more experiences, find deeper and more subtle patterns, patterns that help predict what might happen in the future when they act to accomplish goals.

For example, let's say I ask you to think of a typical bedroom (Gee 1992; Rumelhart, McClelland, and the PDP Research Group 1986). Thanks to your experiences in the world, what you think of may be a room of moderate size with things like a bed, side tables, a dresser, drapes, lamps, pictures, a clock, a carpet, and other things. These things have all been elements in your experiences with bedrooms, elements that you have come to see as a pattern (or network of elements). But say I tell you there is a small refrigerator in the bedroom. Now you may envision a student's bedroom in a dorm (e.g., a smaller room, a bed, a desk, a lamp on the desk, and maybe a mess on the floor). You have formed a different pattern out of the elements of your experience. This example shows how you use elements of your actual experience to think, not a static schema or rule system. Such associations (about bedrooms or anything else) and how you use them change as you gain different experiences. For example, with new experiences, the idea of a bedroom with a refrigerator may trigger an image of a poverty-level hotel room.

You can see the same thing happening if I say, "The coffee spilled, go get a mop" (which elicits an association with coffee as a liquid), versus "The coffee spilled, go get a broom" (which elicits an association with coffee as grains). Compare this also to "The coffee spilled, stack it again" (Clark 1993).

Despite the fact that the NLS had little interest in the mind, there is a natural affinity between Situated Cognition Studies and the NLS. This affinity has, for the most part, not been built on much by either side. Situated Cognition Studies argues that we think through paying attention to elements of our experiences. While this is a claim about the mind, we can ask, "What determines what experiences a person has and how they pay attention to those experiences?"—that is, how do they find patterns in their experiences or what patterns do they pay attention to?

One answer to this question is: What determines what experiences a person has and how they pay attention to the elements of these experiences is their participation in the practices of various social and cultural groups. Related to our interests in DMAL, these practices are mediated by various tools and technologies whether those tools are print or digital media or other tools.

Of course, this was just what the NLS wanted to study. For example, bird-watching clubs and expert bird watchers shape how new bird watchers pay attention to their experience of birds and environments in the field (Gee 1992). And these experiences are mediated in important ways by various tools and technologies such as bird books, scopes, and binoculars. Obviously one experiences a wood duck in a vastly different way when looking at it through a powerful scope than through unaided vision. Furthermore, such technologies allow distinctive social practices to arise that could not otherwise exist (e.g., debating minute distinctions between feathers on gulls that are hard to tell apart).

Thus, a situated view of the mind leads us to social and cultural groups and their tools and technologies. Both Situated Cognition Studies and the NLS point not to the "private mind" but to the world of experience—and that experience is almost always shared in social and cultural groups—as the core of human learning, thinking, problem solving, and literacy (where literacy is defined as getting and giving meanings using written language). This was the argument I made in my book *The Social Mind* (1992) at a time when I was trying to integrate learning into the NLS and to link Situated Cognition Studies and the NLS.

Situated Cognition Studies has cohered as a field, largely due to the shared background of most of its adherents in contemporary psychology. However, as Situated Cognition Studies has become an integral part of the Learning Sciences, a field often found in educational psychology departments, it has begun to encounter more people entering the field trained in areas outside psychology, such as media studies or ethnography (Sawyer 2006).

Situated Cognition Studies and the contemporary Learning Sciences of which it is a part are the basis of the learning theories that inform much work in DMAL—sometimes overtly when this work is done by learning scientists, and sometimes covertly by those from other fields who have picked up the influences

indirectly through interaction with those learning scientists. This is not to say that the learning theories behind various pieces of work are identical (e.g., compare Barab and Roth 2006 and Gee 1992, 2004). There are indeed variations in the midst of commonalities, but there is no need to discuss these variations here. Nonetheless, Situated Cognition Studies, in some guise, is liable to remain the crucial learning theory behind DMAL as (or if, perhaps) it develops into an ever more integrated and coherent field of studies.

The New Literacies Studies

The NLS argued that written language was a technology for giving and getting meaning. Furthermore, what written language meant is a matter determined by the social, cultural, historical, and institutional practices of different groups of people.

The New Literacies Studies simply carries over the NLS argument about written language to new digital technologies. Note that “the New Literacies Studies” is parsed grammatically differently than “the New Literacy Studies.” The NLS was about studying literacy in a new way. The New Literacies Studies is about studying new types of literacy beyond print literacy, especially “digital literacies” and literacy practices embedded in popular culture.

The New Literacies Studies views different digital tools as technologies for giving and getting meaning, just like language (Coiro et al. 2008; Gee 2004, 2007; Kist 2004; Kress 2003; Lankshear 1997; Lankshear and Knobel 2006, 2007). Like the NLS, the New Literacies Studies also argues that the meanings to which these technologies give rise are determined by the social, cultural, historical, and institutional practices of different groups of people. And, as with the NLS, these practices almost always involve more than just using a digital tool—they involve ways of acting, interacting, valuing, believing, and knowing, as well as often using other sorts of tools and technologies, including oral and written language.

Just as the NLS wanted to talk about different literacies in the plural—that is, different ways of using written language within different sorts of sociocultural practices—so, too, the New Literacies Studies wants to talk about different “digital literacies”—that is, different ways of using digital tools within different sorts of sociocultural practices. In this sense, the New Literacies Studies is a natural offshoot of the NLS,

though the two fields do not contain the same people by any means.

The New Literacies Studies has had an important historical relationship with the NLS, from which it partly stems. At the same time as the New Literacies Studies has been emerging as a field, there has emerged as well another area, what we can call the New Media Literacy Studies (NMLS). The NMLS has not had a significant historical relationship with the NLS, at least until recently (thanks to different people meeting each other as they come to DMAL from different places), nor does it in any significant way stem from the NLS. In many ways DMAL is an amalgam of the New Literacies Studies with media literacy and contemporary learning theory (as in Situated Cognition Studies). Each area, though, has influenced different people in DMAL differently and people have brought to the area yet other influences (e.g., game design).

New Media Literacy Studies

The NMLS is an offshoot of a movement that has been around for some time, namely “media literacy” (on NMLS and its relation to traditional media literacy, see, e.g., Beach 2006; Brunner and Tally 1999; Buckingham 2003, 2007; Hobbs 1997, 2007; Jenkins et al. 2006; Warschauer 1998). Both the NMLS and the earlier media literacy are connected in large part to people in the field of communications or related fields, though interest in both has spread well beyond communications.

Media literacy as a field was concerned with how people give meaning to and get meaning from media, that is, things like advertisements, newspapers, television, and film. Of course, giving and getting meaning from media sometimes involves giving and getting meaning from oral and written language—language used in media contexts. Giving and getting meaning from media can, of course, involve giving and getting meaning from images, sounds, and “multimodal texts” (texts that mix images and/or sounds with works) as well.

Media literacy did not want to only study how people give meaning to and get meaning from media, but also intervene in such matters by studying how people can be made more “critical” or “reflective” about the sorts of meanings they give and get from media. People can be “manipulated” by media and can “manipulate” others with media. It is often

relevant to ask whose (vested) interest is served by a given media message and to wonder whether people mistake whose interest such messages really serve. For example, an ad whose message really serves the profit motives of a company can be mistakenly understood by a consumer to be in her or his best interest.

Such an approach also raised issues about the extent to which consumers of media are “dupes” or “savvy.” Some approaches to media literacy tended to stress the ways in which consumers can and sometimes do use media and media messages for their own interests and desires, even in ways that the producers of those messages did not intend (Alvermann, Moon, and Hagood 1999; Lankshear and Knobel 2006). The extent to which such proactive use of media is or is not a politically effective counter to consumerism and the power of profit-seeking businesses is a matter of debate.

The NMLS inherited many of the concerns and issues of media literacy. However, today it is not just media professionals and corporations that can produce and manipulate people with media. Everyday people—former “consumers”—can now produce their own media and compete with professionals and corporations. Thus, the NMLS stresses the ways in which digital tools and media built from them are transforming society and, in particular, popular culture.

At the outset of this article we discussed some of the transformations to which digital tools are giving rise. These transformations are crucial to the NMLS. So let us discuss them once more. First, digital tools are changing the balance of production and consumption in media. It is easier today for everyday people not to just consume media but also to produce it themselves. Everyday people—not only experts and elites—can produce professional-looking movies, newscasts, video games (thanks to “modding”), and many other such products.

Second, digital tools are changing the balance of participation and spectatorship. People are no longer restricted to the role of the spectator. Because they can now produce their own music, news, games, and films, for example, they can participate in what used to be practices reserved for professional or elite musicians, filmmakers, game designers, and journalists.

Third, digital tools are changing the nature of groups, social formations, and power. Prior to our current digital tools, it was hard to start and sustain a group. It usually required an institution, with all its attendant bureaucracy and top-down power. Today,

with social networking sites like Flickr, MySpace, Facebook, and digital devices like mobile phones, it is easier than ever to form and join groups, even for short-term purposes. Often no formal institution is required and groups can organize themselves bottom-up through constant communication and feedback. These quickly formed groups can engage in social, cultural, and political action in a fast, pervasive, and efficient manner. Such groups can readily form and re-form, transforming themselves as circumstances change. In fact, it can sometimes be hard for more traditional groups and institutions to keep up with such flexible group formation.

Fourth, all the above trends are leading to the phenomenon known as “Pro-Ams.” Today young people are using the Internet and other digital tools outside of school to learn and even become experts in a variety of domains. We live in the age of “Pro-Ams”: amateurs who have become experts at whatever they have developed a passion for (Anderson 2006; Gee 2008; Leadbeater and Miller 2004).

Many of these Pro-Ams are young people who use the Internet, communication media, digital tools, and membership in often virtual, sometimes real, communities of practice to develop technical expertise in a plethora of different areas. Some such areas are digital video, video games, digital storytelling, machinima, fan fiction, history and civilization simulations, music, graphic art, political commentary, robotics, anime, and fashion design (e.g., for Sims in *The Sims*). In fact, there are now Pro-Ams in nearly every endeavor the human mind can think of.

These Pro-Ams have passion and go deep rather than wide. At the same time, Pro-Ams are often adept at pooling their skills and knowledge with other Pro-Ams to tackle bigger tasks or to solve larger problems. These are people who don’t necessarily know what everyone else knows, but do know how to collaborate with other Pro-Ams to put knowledge to work to fulfill their intellectual and social passions.

The NMLS thus engages with a new sense of “media literacy.” The emphasis is not just on how people respond to media messages, but also on how they engage proactively in a media world where production, participation, social group formation, and high levels of nonprofessional expertise are prevalent. Issues of being critical and reflective are still paramount, of course, but so are issues of how digital media are and are not changing the balance of power and status in society.

Influence

My summary of emerged and emerging fields relevant to DMAL traces only one trajectory to DMAL, one based around literature in the given areas. Other trajectories would tell the story in different ways. For example, as people from different backgrounds have come to DMAL, they have influenced each other through personal interactions. These interactions—and not just “the literature” in a given area like the NLS—have caused elements of the NLS, the New Literacies Studies, Situated Cognition Studies, and NMLS to circulate even apart from the formal literature.

For example, consider two important papers by Katie Salen (2007b) and Eric Zimmerman (2007), the authors together of a very influential book on game design (Salen and Zimmerman 2003). Both of these illuminating papers deal with video gaming as a “literacy.” They both argue, among other things, that the sorts of meanings gamers give to and get from playing and modifying games involve “systems thinking” and “design thinking” within communities of practice that encourage technologically mediated collaborative problem solving. Such thinking and collaboration are, they argue, particularly important 21st-century skills.

These authors, both innovative game designers, were influenced as much by contact with people from the movements I have discussed—people who had moved to DMAL—as the formal literature in these areas. For example, both Salen and Zimmerman attended a series of Spencer Foundation sponsored meetings (2005–2007) that brought together people from the NLS, the New Literacies Studies, the NMLS, and Situated Cognition Studies with game scholars and game designers (see chapter 10 of Gee 2007 for a report on these meetings). Both Salen and Zimmerman injected into those meetings their own unique approach to game design. They meld all these interests in their (2007) papers.

Further, both Salen (2007b) and Henry Jenkins—the leading NMLS scholar in the world today—in his important white paper (Jenkins et al. 2006) cite the work of the New London Group (1996). The New London Group was a small international group of scholars (I was a member) that wrote a “manifesto” on literacy for “new times.” The manifesto gave rise to the term “multiliteracies,” which was, in reality, something of an amalgam of the NLS, the

New Literacies Studies, and Situated Cognition Studies (and other movements), stressing print literacy as multiple sociocultural practices, new digital literacies, and multimodality (the mixing and integration of print, images, and other modalities) all in terms of our fast-changing global world.

Thus, the emerged and emerging fields I have discussed are relevant both as formal literature and as influences “in the air” as people from different backgrounds meet, interact, and influence each other. If DMAL ever does emerge as an integrated field, these sorts of personal interactions will be as much a part of its history as the formal literature. In fact, the way forward to more commonality, sharing, collaboration, and accumulated knowledge is not, I believe, through reading and citing of more formal literature, but rather through being more overt with each other in DMAL about our assumptions, influences, and approaches. It is to this matter that I will turn in Part II of this article, also in this issue of *IJLM*.

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