

Literacy Implications of Online Fan Debates

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Online debates about digital media can be quite intricate and, somewhat surprisingly, involve complex theory development. Through a discourse analysis of discussions on the topic of the chronology of The Legend of Zelda games, the co-construction of knowledge in gamer communities is illustrated in detail. The use of evidence, argumentation moves, and theory construction is highlighted, along with conclusions drawn about the use of online tools and collaboration in the development of chronology theories. The study of online environments is advocated as a way to understand how a form of “narrative remixing” occurs as a design practice and as a literacy practice.

In recent years, we have seen an increase in the variety of online discussions around digital media. Be they fan theories about television series such as *Lost* or debates around games such as *The Legend of Zelda* series, fans have engaged in complex forms of argumentation, reasoning, and the construction of elaborate theories pertaining to the stories in these media. Digital media provide important and increasingly pervasive venues for studying literacy practices, and serve as locations in which to understand the ways that some aspects of popular culture may afford learning in informal contexts. In this paper, I argue for attention to be given to the productive online discussions around certain new media, and I will illustrate the ways that these discussions have implications for understanding literacy and learning “in the wild” (Hutchins, 1995).

In the past decade, a number of fan-driven approaches have arisen to modify, extend, and debate the content of games and other media. Fan fiction writers organize into groups that have virtually “professionalized” their writing (Black, 2005), *Yu-Gi-Oh* players use and interpret highly technical language on game cards and websites that is as complex as the language in any academic domain (Gee, 2004a), fantasy sports players engage in forms of “competitive fandom” in which they complement learning about the dynamics of a sport with learning how to play a game (Halverson & Halverson, 2007), and players of *World of Warcraft* augment their gameplay by building and using models which measure and assess elements of the game in highly statistical terms (Steinkuehler, 2006a, 2006b; Steinkuehler & Duncan, in review). Contemporary popular culture tends to stress active *production* and not just consumption, leading to expertise which is earned within digital communities and not via professional forms of certification.

Internet message boards (or forums) have served as common loci for these sorts of discussions, with spirited debate, complex problem-solving, and argumentation between participants a hallmark of many online debates. The content of these forum discussions ranges widely — as widely as the number of games, television shows, movies, and other media which are discussed on the Internet. The realm of videogames may provide one of the most interesting areas of study, however, given the dominance of the medium in popular youth culture, its multimodal nature (often involving text, images, sound, and motion), and the role of the player as an active participant in the unveiling of games’ narratives. Determining how and why players

of certain videogames participate in online discussions about them may shed light on the ways that these particular digital media shape practices which sometimes cross into the realm of academic argumentation (Duncan & Gee, in press), or informal science literacy (Steinkuehler & Duncan, in review).

In this paper, I will discuss the literacy implications of one case of theory production within online fan discussions: Arguments over the issue of narrative and chronology in *The Legend of Zelda* series of videogames. Through an analysis of the unique nature of the *Zelda* case, I argue that we can better determine how informal, computer-mediated discussions around games might illuminate the ways that a form of “narrative remixing” is enacted in online spaces, along with its literacy implications.

Literacy and Digital Media

Recognizing that the many-faceted activities that comprise modern media “fandom” can contain complex intellectual activity has long been a interest of media scholars such as Jenkins (1992, 2006), and many now view exploring how these activities relate to learning and literacy to be a key concern. In particular, Lankshear & Knobel (2006) emphasized the collaborative nature of writing practices in many online environments, Black (2005) described the productive nature of fan fiction authorship, Gee (2004a, 2004b) has argued for online environments around videogames as “affinity spaces,” Leander & Lovvorn (2006) applied Latour’s Actor Network Theory (Latour, 1987) to understanding gaming cultures, and Steinkuehler (2007) and Steinkuehler & Duncan (in review) have mapped literacy practices in and around massively-multiplayer online games. Through analyses of a wide range of new media and the ways that everyday participants interact with them, scholars of learning and literacy have begun to map out the landscape of informal literacy practices in digital popular culture.

Specifically, in a discussion of videogames and literacy, Squire (2005) described and categorized a number of the literacy implications for this particular medium, ranging from the interactive nature of many videogame “texts” to the understanding of videogame cultures as “affinity spaces” (Gee, 2004a). Squire focused, in part, on the literacy practices within “gamer communities” and the work to be done in understanding the ways that literacies are enacted socially among gamers. Squire’s emphasis for understanding these communities was in writing and discussion, arguing that “studies of gamer communities suggest the importance of not just focusing on games, but looking at gamer *discourse* to understand emerging digital literacies” (Squire, in press, Game communities section, para. 3). To understand how learners enact literacies in and around digital media, Squire believed it was critical to explicate the ways that discourse is employed to negotiate meaning and argue positions.

Therefore, a fine-grained analysis of exactly *how* knowledge is constructed within these environments is needed. By focusing on the discursive forms and moves in a particular exchange, we may be able to glean insights in order to guide instruction and the formation of educational interventions based on empirical work. The central method for this paper will thus be discourse analytic (Gee, 2005), with an emphasis on showing how meaning is negotiated in online forums via argumentation and the negotiation of meaning. In particular, since connections to informal scientific reasoning and other academic pursuits are often of interest, I will first describe the ways that particular “everyday” argumentation moves have impact upon both the knowledge

being constructed and, consequently, the *theories* being shaped in the discussions around the popular *The Legend of Zelda* series of videogames.

***Zelda* and Forums**

The Legend of Zelda is the collective name for a series of fourteen (at the time of this writing) games published by Nintendo for its gaming consoles (starting with *The Legend of Zelda* for the Nintendo Entertainment System in 1985/1986 through the current Wii and Nintendo DS games, *Twilight Princess* and *Phantom Hourglass*, released respectively in 2006 and 2007). In each of the games, the player controls a young, blonde, male character (named Link) who is enlisted to save the fantasy kingdom of Hyrule (and its princess, Zelda) from a number of evils, typically involving the series' major villain, Ganon (sometimes Ganondorf). Each of these games involves solving puzzles as well as combating virtual enemies in order to achieve the game's goals. Through the process of playing each game, new narrative is uncovered — either through gameplay itself or through the use of “cut scenes,” which cinematically provide narrative exposition within the game.

Though there are many common elements to the different *Zelda* games, there are significant differences in timeframe and characters. For instance, the 2002/2003 game *The Wind Waker* appears to be set several hundred years after other games in the series, yet it is unclear exactly which games' events precede it in the overall storyline of the games (if there is one). Additionally, while each game tends to have similar characters (including Link, Zelda, and Ganon), some characters appear to have distinctly different histories from the similarly-named characters in other games, calling into question whether or not they are the same characters as in other *Zelda* games, descendants of the characters from earlier games, or just new similarly-named instantiations in a recurring legend. Complicating matters further, *Ocarina of Time* explicitly involved time travel as a part of the story and, as a consequence, featured a bifurcation of timelines within the game — in *Ocarina*, Link is brought forward to the future (to battle Ganon in a Hyrule in which Link was absent), then later returned to his youth, essentially creating two chronologies within the game (one in which Link fights Ganon as a young adult, and one in which he given the reward of being able to relive his childhood).

There has been very little clear information from Nintendo and the games' developers as to whether or not all of the *Zelda* games should be viewed as one large story, different versions of a common “legend,” multiple storylines/timelines, or something else entirely. The “texts” of the games themselves are often ambiguous on these issues (other than a few games, such as *Majora's Mask* and *Phantom Hourglass*, which are explicit sequels to other *Zelda* games). In the face of these inconsistencies and narrative gaps, some fans have taken it as a task to determine how the many narrative elements of the *Zelda* games relate to one another, and to try to construct coherent overarching timelines for the entire series of games. Does *The Wind Waker* take place before or after the original *The Legend of Zelda* game? Is the Link in *A Link to the Past* the same as the Link in *Majora's Mask*? Does *Ocarina of Time* imply that there are multiple timelines, and some games belong in one timeline versus another?

Questions such as these fuel spirited online discussions for some fans of the *Zelda* games, and provide an opportunity for fans to argue and develop their own narratives from the elements provided by the games' designers. These discussions are not in any way a necessary part of playing the *Zelda* games, but some fans have still viewed this activity as an engaging activity worthy of prolonged debate. We may not completely understand what motivates some fans to

view it as their task to determine the “correct” organization of the *Zelda* timeline, but their activities and discourse practices nevertheless illustrate the complex ways argumentation and reasoning can occur in online communities.

On the Nintendo NSider online forums (<http://forums.nintendo.com>), the topics of timelines and *Zelda* chronology have been popular for several years — a series of three linked threads was started in 2004 and has continued through the time of this paper’s writing. In this set of three connected discussion threads, several dozen posters (individuals) have written over 16,000 posts (contributions; some containing hundreds of words) to three discussion threads (topics) dealing with *Zelda* timelines. Participants have proposed intricate theories of chronologies for the entire *Zelda* series, critiqued others’ proposals, provided evidence and counter-evidence to support their claims, and iterated theories as new games have been released. These discussions make extensive reference to many elements of popular culture beyond the fourteen Nintendo games themselves, including the *Zelda* comic book series, animated television series, obscure BS *Zelda* and Philips CD-i games, and other media.

This is certainly an atypical discussion topic for gamer forums — few other threads on the Nintendo forums were as voluminous and developed. I present the *Zelda* timeline discussions as worth investigating in terms of the protracted and intricate kinds of debates that have occurred in these threads, as well as for the degree of involvement by some of the posters. Excerpts from these threads will be presented, not to illustrate what “everyday” gamers often partake in when discussing games online, but to highlight a potential form of high-level discourse that can arise out of engagement with certain forms of digital media. I contend that there has been significant intellectual activity put forth toward the discussion of *Zelda* timelines, and first seek to uncover the process of how meaning is made in this environment.

Negotiating Meaning Through Argumentation

Typical posts to the *Zelda* timeline threads dealt with posters’ proposals of timeline organizations, and then the subsequent defense of their interpretations. For instance, in the earliest days of the first timeline forum thread, many posts were simply proposals for timeline organizations, such as this one from a poster named SEGA42¹ in September, 2004 (with SEGA42’s acronyms decoded in the brackets):

Here is my timeline on the games:

FS [*Four Swords*]
OoT [*Ocarina of Time*]
MM [*Majora’s Mask*]
TWW [*The Wind Waker*]
FSA [*Four Swords Adventures*]
TLoZ [*The Legend of Zelda*]
TAoL [*The Adventure of Link*]
ALttP [*A Link to the Past*]
OoS/OoA [*Oracle of Seasons* and *Oracle of Ages*]
LA [*Link’s Awakening*]

I’m too lazy to explain it right now (), but I’ve thought over it a lot, and I find only one flaw: the geography of FSA. Its Hyrule matches

¹ “SEGA42” is a pseudonym, as will be the case for all forum posters referenced in this paper.

perfectly with the Hyrule of ALttP, yet TLoZ and T AoL do not. I'm working on it...>>

SEGA42's timeline theory only included eleven games, since it was written before the release of subsequent games *The Minish Cap*, *Twilight Princess*, and *Phantom Hourglass*. The organization of the games into an intelligible timeline was a goal of many participants in this thread, and some, like SEGA42, started off by proposing their organization of the games, then opening it up for the rest of the forum to probe for flaws.

Note that SEGA42 is frank about the tentative nature of his or her proposal (regardless of how much he or she has "thought it over"). By flagging that his or her chronological ordering of the games was incomplete ("I'm working on it" followed by a frustrated emoticon), as well as identifying a specific issue that may be problematic for this timeline ("geography of FSA," or the way the land of Hyrule is depicted in the game *Four Swords Adventures*), SEGA42 indicated to the forum's readers that this is a work in progress. In other words, SEGA42 proposed a *theory* of the games' narrative organization, and opened up this to further debate. These sorts of posts were typical for the *Zelda* timeline discussion threads, and often served as seeds for more detailed discussions to follow upon.

Yet, simply describing a theory of the games' chronology does not a discussion make, and it is the explicit exchange and negotiation in these threads that illustrates the way argumentation played a role in the making of meaning. In an earlier series of posts between two participants (GAMEFAN#1 and SGM2) in June, 2004, we can see how the negotiation of the meaning of a single word can have significant import on the kinds of timeline theories employed by participants in these threads.

I have parsed the following example into five stanzas, each corresponding to a post on the forum, with each successive idea presented within each stanza as a separate line, for reference purposes:

Stanza 1 (GAMEFAN#1):

- 1-Okay, you remember that the first time when OOT Link pulled the Master Sword from the pedestal.
- 2-Seven years later, he grew up.
- 3-Then Sheik appeared to Link
- 4-and said he really does look like the Hero of Time.
- 5-So... How did Sheik know how the Hero of Time is supposed to look like?
- 6-That implied that there was another Link before OOT who became the Hero of Time.
- 7-That means OOT Link is the second Hero of Time.

Stanza 2 (GAMEFAN#1):

- 1-Also, when Navi first saw the Master Sword,
- 2-she said it was the legendary blade.
- 3-So, what made it legendary in the first place?
- 4-Unless another Link used it before OOT
- 5-and that Link is the first Hero of Time.

Stanza 3 (SGM2):

- 1-I am not saying there was not another hero before the game
- 2-but it could of become legendary just because it was created by the sages
- 3-and that it repels evil.

Stanza 4 (GAMEFAN#1):

- 1-First off, it is not legendary if it hasn't done anything significant yet.
- 2-For example: I forged a knife.
- 3-Does that make that knife legendary right after I forged it?
- 4-No, of course not.

Stanza 5 (SGM2):

- 1-If you later do something famous
- 2-that knife will become the legendary knife of GAMEFAN#1.
- 3-The sages created the blade.
- 4-They are also the protectors of the triforce.
- 5-It would be legendary just by being created by them.

The debate continued, but for the sake of this analysis, I will only examine these first five stanzas. A central concern was the strength of the arguments GAMEFAN#1 proposed regarding the necessity of a character named Link predating another character named Link (the player's character) within the game *Ocarina of Time* ("OOT" to the posters): First, that Link in *Ocarina* was recognized by a non-player character ("the Sheik") as the "Hero of Time" (Stanza 1, lines 3-4), implying that there must have been an earlier Link. Second, that the character "Navi" referred to Link's Master Sword in *Ocarina* as "legendary" (Stanza 2, line 2), indicating that the Master Sword (a weapon in the game) must have been used by a previous, "legendary" Link. It is the latter case — the interpretation of "legendary" — that is of most interest.

As the exchange continued (Stanza 3), a direct challenge to the initial interpretation of "legendary" was proposed, defended by the original poster (in Stanza 4), then revised once again by SGM2 (in Stanza 5). A progression of evidence was marshaled to GAMEFAN#1's argument (Stanzas 1 and 2), followed by a reinterpretation of the data by SGM2 (Stanza 3). Next, a (rather weak) thought experiment was posited (Stanza 4), followed by an additional critique (Stanza 5). GAMEFAN#1 proposed a meaning of "legendary" which implied one organization of the games' narrative, while SGM2 countered with alternatives.

Stepping back for a moment, we can see that the meaning of the term "legendary" is of central importance in this excerpt. Meanings are proposed for the term and subsequently debated (first that "legendary" refers to the actions of a hypothesized earlier Link in the games' narrative, then attributed to the provenance of a sword within the game). But more than this, the meaning of several conceptions of the games' chronology actively hinged upon the debated meaning: If "legendary" referred to a previous Link's actions (as proposed by GAMEFAN#1), then this would entail an organization of *Zelda* chronology in which *Ocarina* was placed early in the timeline (perhaps like SEGA42's above). However, if "legendary" referred to the influence of the sages (as SGM2 proposed), then *Ocarina* would not necessarily need to be an earlier game. The collaborative, negotiated interpretation of a single piece of evidence can have a great deal of impact in these debates, driving the adoption of radically different theoretical stances.

For instance, GAMEFAN#1's theory relied (at least initially) upon an interpretation of a piece of evidence which would necessarily imply earlier events (that the sword was used by an earlier "Hero of Time," thus *Ocarina* was a later game). However, SGM2's reinterpretation of the term "legendary" — that "legendariness" was a property of the sages and inherited by the sword's creators — implied a theory without the same chronology implications. The meaning of this word (taken from text presented in the game) is treated as evidence by both posters, re-appropriated for a different purpose than the game designers apparently intended, and used to

shape the development of creative interpretations of *Ocarina*'s relationship to other games in the series.

This brief example illustrates that, in typical posts to these forums, participants engaged with the narrative of each game, while also theorizing and “remixing” the games’ overarching narrative. Though the content of the debate is of a relatively obscure nature, the *form* of the debate mirrors aspects of scientific and academic discourse — the postulation of evidence in service of the development of a theory, a challenge to the meaning of the evidence, adjustments to the initial theory, and so forth. Though the topic of discussion is about the organization of narrative across several videogames, one form of literacy evinced by this case seems to involve adopting elements of discourse used in academic settings. That is, the argumentation found in *Zelda* timeline debates is, in form, similar to the kinds of discourse privileged in institutions of higher learning, and other venues which have typically been seen as distant from the common perception of “gamer communities.”

Yet, while it seems clear that argumentation and theory-construction occur in this informal learning context, what motivates players to engage in such discourse? By focusing on the reasons for these threads’ existence, we can see the ways that fans’ manipulation of narrative also illustrates sophisticated literacy practices.

Narrative Remixing as Design

The forms of argumentation in the timeline threads are, by and large, representative of the forms of argumentation we see in discussions within other gamer communities. Proposals are forwarded, critiqued, modified, iterated, and so forth, until a conclusive solution is derived to whatever the problem is at hand or the participants in the discussion move on to other topics. For example, Steinkuehler & Duncan (in review) illustrated that, for some *World of Warcraft* players, arguments were a means to uncover ways to improve one’s gameplay, be it by formulating new ways to configure one’s characters, or by attempting to uncover the mathematical relationships between game mechanics. The goals of many of Steinkuehler & Duncan’s *World of Warcraft* forum participants were apparently play-oriented and instrumental, driven by a desire to improve one’s performance in the game or configure the game to appeal to one’s personal play style.

Yet, in the *Zelda* case, while the forms of discourse are similar, we find ourselves pondering a very different kind of reason for participating in the discussions. For these *Zelda* fans, argumentation serves a less clear purpose than improving gameplay or customizing a game to fit one’s personal style, since the construction of cross-game narratives has no consequence for how one plays a particular *Zelda* game. Why would fans of these games engage in elaborate debates around the games’ narratives? To address this question, it is worth again highlighting that different kinds of “texts” are involved in the activity of developing a fan-created *Zelda* chronology.

In the *Zelda* debates, several kinds of narrative elements were appropriated from the games as evidence in the forwarding of timeline theories. These include (but are not limited to):

- Dialogue within a game (e.g., what did Midna specifically say in *Twilight Princess*?)
- Existence and naming of characters (e.g., is the villain named Ganon, Ganondorf, or both in a particular game?)

- Existence and placement of objects within a game (e.g., where is the Master Sword found?)
- Geography within a game (e.g., is Hyrule a “barren wilderness” or a “close-knit kingdom”?)
- Information from game manuals (e.g., the print materials for *The Adventure of Link*)
- Relational game marketing (e.g., *Phantom Hourglass* was an explicit sequel to *The Wind Waker*).
- Game designer intentions (e.g., interviews with Shigeru Miyamoto or Eiji Aonuma)
- Game mechanics and game design (e.g., is the game rendered as 2-D or 3-D?)

That is, the set of narrative elements utilized by fans in these threads incorporates textual, graphical, and gameplay elements, often crossing across games and other media related to *Zelda*. The *intertextual* nature of these debates points to an interesting set of practices — the way that fan-constructed timelines feature the “remixing” of narrative elements to yield new, overarching narrative constructions.

I call this activity “narrative remixing” to highlight the appropriation of elements of narrative from a variety of sources (and a variety of media), which is then “remixed” or recombined into new forms through the process of discussion in the forums. That is, participants in these debates constructed elaborate theories of the games’ chronologies, generating new chronologies (and, sometimes new *narratives*) out of the pieces of narrative gleaned from the *Zelda* games (and other media). In this way, one might view the activities of the *Zelda* forum participants as collaboratively making a new narrative “mosaic” of out bits of narrative originally taken from the games’ designers. Problem-solving and argumentation play a significant role in this activity, but primarily at the level of justification and modification of theories; a participant’s motivation for proposing a timeline on a public forum in the first place seems to speak to a deeper desire to create new fan-based artifacts around *Zelda*.

I distinguish this activity from fan fiction in one significant way — while there is certainly online discussion involved in the creation of fan fiction, for these *Zelda* debates, the process of argumentation using story elements from a variety of game-related sources is central to what it means to be “literate” in these *Zelda* fan discussions. Questioning the legitimacy of a source of evidence, as in the “legendary” example above, is less a task of refining an aesthetic sense of a timeline and more a collaborative problem-solving task to uncover the sense of, for example, which meaning of “legendary” works best with the other appropriated elements of narrative. The development of timeline theories which have justifiable, internal consistency is negotiated with other participants who have adopted stances encouraging this sort of discourse (e.g., “And critique me that is the only way any one wil ever get this riht is to be critiqued!”, a poorly-typed but laudable sentiment from poster LINK-FAN-242 in November, 2004). This stance appears to have been a prerequisite to meaningful participation in them.

The nature of these debates leads to viewing the *Zelda* forums as a form of “online workshop” for the co-construction of novel narratives around the *Zelda* series. Through the process of online argumentation, informal communities of gamers *iterated* timeline proposals, modifying and re-proposing them in the face of criticisms. Thus, we may look at the *Zelda* timeline discussions as collaborative *design* activities of a sort — the co-construction of knowledge in these threads involves fans of the game taking elements of narrative from multiple texts, crafting theories, justifying them, facing critique from other participants, and iterating new designs, all in the service of the construction of an intertextual meta-narrative for the games. The

creative act of developing new timeline theories is not just idle argumentation, but the deliberate construction of artifacts in a fan community through negotiation and debate.

Conclusions

The process by which *Zelda* chronologies are socially constructed matches much of what Latour and Woolgar (1979/1986) argued vis-à-vis scientific knowledge. Knowledge is necessarily situated, and “the particular branch of philosophy — epistemology — which holds that the only source of knowledge are ideas of reason intrinsic to the mind, is an area whose total extinction is overdue” (Latour & Woolgar, 1979/1986, pg. 280). The implication of studying collaborative knowledge construction necessarily means studying knowledge outside the individual’s mind, and thus within a network of negotiations, evidence, tools, and other people, as can also be seen in the *Zelda* forums.

The *Zelda* chronology debates are illustrative of potential literacy practices occurring in online gaming communities. In particular, this analysis shows that these kinds of “affinity spaces” (Gee, 2004a) are productive environments in which actants (human and non-human) co-create knowledge. The concept of “narrative remixing” in particular is one which may have utility in understanding the ways fans manipulate popular media. The example of *Zelda* chronology debates represents a unique case of “fan design” which is neither “fan fiction” as it has traditionally been studied, nor goal-directed online discussions aimed at improving one’s gameplay. Narrative itself is creatively “remixed” in these cases, in a fashion in which participants employ discourse practices such as argumentation, negotiating evidence, and developing theories, but toward goals which appear to be fan-motivated, informal design activities. This approach to “narrative remixing” implies that knowledge construction cannot be considered in this context without acknowledging that the fan debates are oriented toward the collaborative, iterative construction of artifacts (in the form of timelines).

Design activities of this sort support both established literacy goals (e.g., the critical reading and evaluation of texts), as well as so-called “21st century skills” (Partnership for 21st Century Skills, 2008). Given the significant body of narrative elements to reconcile (not focusing entirely on one text, but across many of them), players have the room to question the legitimacy of some of those texts, debate the meaning of them, and design their own reconfigurations of them. The *Zelda* games do not afford such activities within gameplay (e.g., configuration of one’s character’s appearance or abilities, a la *World of Warcraft*), leaving participants to interact creatively with the game at a meta-narrative level. That they have taken up this activity using a game series which does not encourage such kinds of interaction within the confines of the game environment hints that some gamers have a strong desire to engage in these sorts of design-based activities, and will create environments to do so when they are not provided them within a game. Again, it is apparent that production (and not simple consumption) is a hallmark of interaction with contemporary digital media, and that this may support concomitant literacy practices.

This case clearly needs further study, in several specific directions. Developing a better understanding of the processes (social and cognitive) by which meaning is negotiated by these groups, as well as mapping the social networks of these informal learning environments may be useful in better understanding how knowledge and artifacts are constructed in gamer communities. In terms of pedagogy, determining what kinds of design practices and design principles evolve from informal contexts such as the *Zelda* forums may be useful in both

contrasting structured instructional environments with what occurs in informal, fan-driven contexts, as well as providing the potential seeds for design-based educational interventions. Identifying that informal literacy practices exist in fan uses of digital media is only the first step; better understanding the mechanics of collaborative knowledge construction and design, as well as how to harness these literacy practices for learning are necessary tasks for the future.

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