Literacy and Technology: Integrating Technology with Small Group, Peer-led Discussions of Literature

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Abstract
This review examines research of computer-mediated small group discussion of literature. The goal of this review is to explore several instructional formats for integrating print-based and new literacies skills. First, the theoretical foundations for the shift from teacher-led to student led discussion are outlined. Research exploring ways in which technology has been infused into several common elements of literature discussion groups are presented next. Benefits and challenges of such integration are highlighted and suggestions for future research are presented.

Keywords: Subjects: Educational Technology; Adolescent Literature; Computer-Mediated Discussion; Collaborative Learning, Discussion Groups

Introduction
The purpose of this article is to provide a review of the literature concerning integration of literacy and technology in the context of small group, peer-led literature study. First, an overview of key studies outlining the rationale for moving from teacher-led to peer-led discussions will be presented and the theoretical foundations for such a shift will be put forth. Next, the literature describing the common key principles and components of several peer-led literature study structures (literature circles, book clubs, etc.) will be presented alongside their benefits and challenges. Third, current practices and applications of the integration of technology with these structures will be examined in light of the emergent theory of the new literacies. Suggestions for further research will be discussed.

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Peer-Led Discussion of Literature

A variety of terms and structures have been used when referring to peer-led discussion of literature. Eeds and Wells (1989) introduced the concept of grand conversations to describe their proposed goal of the discussion of literature. They called for a departure from teacher-led interactions that followed a pattern of teacher initiation, student response, and teacher evaluations, otherwise known as IRE, toward small, student-directed literature study groups. Several scholars and practitioners put forth different terms and models to promote similar structures of organization to use in pursuit of these grand conversations. Short and Pierce (1990) and Daniels (2002) call such groups literature circles. Wiencek and O'Flahavan (1994) use the term conversational discussion group while Raphael and McMahon (1994) call their literature discussion groups book clubs. At the heart of each is a belief that peer discussion holds a central and valuable place in literacy development (Almasi, O'Flahavan & Arya, 2001). This belief is supported by and rooted in Vgotsky's (1978) theory of social development which regards teaching and learning as interactive and social in nature and highlights the role of talk in sharing knowledge and constructing meaning. Such practices are also consistent with Rosenblatt's (1976) transactional theory of literacy that suggests meaning resides not in a text, but in the reader and how the reader interprets it.

Though there are a number of differences between these various literature study groups, at their core they share a number of key principles and practices:

1. Small discussion groups are organized around (student) chosen texts.
2. Written or drawn notes guide reading and discussion.
3. Discussion groups meet, where the students lead and the teacher serves as facilitator.
4. Readers share learning with a wider audience.

There is a large body of research focusing on the benefits of peer discussion of literature. Research supports the idea that small-group, student-directed discussions of literature can increase comprehension, engagement, and critical thinking skills (Almasi, 1995; Eeds & Wells, 1989; Klinger, Vaugh, & Schumm, 1998). Short (1997) noted that literature circles promote positive attitude toward reading as well as an increased ability to read critically.

Peer-discussion of literature is not without its challenges. Larson (2008) asked a group of pre-service teachers about their perceived challenges of traditional peer-led discussion groups. Findings included shy students feeling uncomfortable sharing, students goofing around and getting off topic, and students who come to the discussions unprepared. Wolsey (2004) adds that students may have a tendency to do what they think the teacher wants, rather than focus on what they are interested in discussing. Daniels (2002) suggests that a major challenge to successfully instituting practices rooted in reader response theory is increased pressure to gear curriculum towards isolated knowledge and skills that can be evaluated using standardized tests.

New Definitions of Literacy – New Classroom Practices

Though much of the research concerning the lopsided ratio of teacher to student talk was conducted over twenty years ago, recent researchers have observed the same skewed ratio in today’s classrooms and have suggested that the accountability movement and its increased pressure on the curriculum has resulted in classrooms where students are given even less of a voice (Grisham & Wolsey, 2006). Adding to these pressures already acutely felt by classroom teachers is the “changing literacy landscape” created as new technologies, particularly those clustered around the Internet, rapidly emerged and became a central part
of our lives (Reinking, 1998; Leu, Kinzer, Coiro, & Cammack, 2004). In addition to the traditional print-based literacies, today’s teachers are now tasked with exposing students to, and supporting students in, their use of new literacies practices including the “skills, strategies and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives,” (Leu et al., 2004, para. 9.)

According to the International Reading Association (2009), to be considered fully literate, students “must become proficient in the new literacies of 21st-century technologies” (para. 1). However, many teachers feel overwhelmed already by the task of teaching traditional print-based skills and believe they lack the time and resources to teach additional digital literacy skills (Hutchison & Reinking, 2010). It becomes important, therefore, for teachers to find ways to use the time and resources currently available to them to simultaneously teach both print-based and digital literacy skills. Several researchers have explored ways in which these new literacies might be “intertwined with tried-and-true literacy practices” (Larson, 2008, p.122). Classroom teachers are using a variety of formats and technologies, many of them loosely structured as some form of a technology-enhanced peer-led discussion group.

Although a review of literature found no current studies discussing the integration of technology within all the components of a literature discussion group outlined above, some have addressed each issue separately.

Text Selection

A review of the literature uncovered few examples of studies in which electronic books or online texts were used. Most of the studies read involved students using traditional printed texts. One exception was Larson (2008) who used electronic books while instituting what she refers to as an Electronic Reading Workshop. Students read electronic books from computer screens in order to exploit their user-friendly editing tools which allow the reader to highlight text, cross words out, insert “sticky notes” or attach files, and make audio recordings (Larson, 2008). The study produced mixed results. Pre-service teachers participating in the study rated the experience as a positive one overall, but all 22 participants still favored reading traditional print books. Some noted that reading on the computer felt restricting and time-consuming.

Preparing for Discussion

Larson (2009) had fifth grade students prepare for literature discussion by keeping electronic response journals in a word-processing program. Students were given approximately 30 minutes to read and respond in their electronic journals. In a similar study 22 pre-service teachers also kept electronic response journals prior to holding small group discussions in both synchronous and asynchronous formats. Carico and Logan (2004) paired up university students taking an adolescent literature course with 8th grade students and had them exchange emails about common texts prior to meeting with others online with other pairs from the same group to discuss their responses in a synchronous chat-room like setting. Students in Simpson’s (2010) study completed “rap sheets” (scaffolded worksheets) prior to composing emails to be sent to an online moderator who would share the information with other classes reading the same book.

Student-led Discussion of Text

Asynchronous Formats. Threaded discussion groups are a common element to several studies exploring the integration of technology and student-led discussion of text (Beeghly, 2005; Bowers-Campbell, 2011; Grisham & Wolsey, 2006; Moreillon, Hunt, & Ewing, 2009; Simpson, 2010; Walker, 2010). An electronic threaded discussion group is a group of people who
exchange messages about topics of common interest” (Grisham & Wolsey, 2006, p. 651). A string of postings on the same topic is referred to as a thread. Because these discussions happen asynchronously, individual readers have the time to reflect on the text that they’ve read, as well as other student responses, before constructing their own response without worrying about being interrupted by other group members (Wolsey, 2004). As Grisham and Wolsey (2006) note, “Asynchronous communications are interactive, like discussions, but thoughtful, like written discourse.

Sometimes referred to as bulletin boards, threaded discussion groups have been used as a platform to discuss literature in several studies. Beehgly (2005) used threaded discussions groups available on Blackboard (a course software management system provided by the university for instructors’ use) in an effort to enhance conversations in their courses about books, meet the needs of individual students, and foster classroom community. In other cases the threaded discussion groups were one component of a larger technology piece. For example, Moreillon, Hunt, & Ewing (2009) instructed students to include a threaded discussion group as one element of the wikis they created to organize, discuss and present their responses to texts. Students were to reflect on their reading, discuss it with others in groups via a threaded discussion board, and then use additional web 2.0 tools to construct and publish their understandings of the elements of literature with respect to each title.

Social networking websites such as Facebook and Goodreads have also been used to host discussions of literature (Stewart, 2009; Walker, 2010).

**Synchronous Formats.** Real-time, online chats are another format for electronic discussion being explored by several researchers (Carico & Loagan, 2004; Day & Kroon, 2010; Larson, 2008; Scharber, 2009; Stewart, 2009). Discussion groups can meet in an online chat-room and exchange ideas simultaneously, similar to a face-to-face conversation but without the need to actually be in the same physical place.

There are a number of platforms which provide opportunities for students to engage in online, real-time chats. Some, like Facebook, were designed as social networking sites. Carico and Logan (2004) utilized a MOO (Multi-user, Object-Oriented environment), which is an online, text-based environment where multiple members can “meet” at the same time. Moodle (www.moodle.org) is an open-source classroom management software that includes forms for both threaded discussions and online chats and can be used to host an online book club (Scharber, 2009).

**Blended Formats.** A review of the literature identified several studies that incorporated both asynchronous and synchronous formats in their discussions of literature (Larson, 2008; Scharber, 2009; Simpson, 2010; Stewart, 2009), some of which included alternating rounds of traditional and technology-enhanced discussion groups (Day & Kroon, 201;). Day and Kroon planned and organized three rounds of literature circles along with three rounds of face-to-face meetings. They used Think Quest, a website designed for school use which includes a forum for threaded discussions. Interestingly, students in this study used threaded discussions in real-time to discuss novels. (Kroon & Day, 2010). Simpson (2010) studied a group of students engaging in a “book rap” which involved individually completing a series of scaffolded worksheets to prepare for in-class discussions with their teachers and peers before creating a shared or individual email message to be sent to an online moderator. This moderator would then make all the emails available to be read by students in other classrooms participating in the same “rap.”

**Sharing learning with a wider audience**

Students participating in traditional face-to-face small group literature discussions organized around a common text often participate in some sort of literature extension project at the
end of the discussion group. These extension projects offer another opportunity for teachers to integrate technology into their traditional literacy practices. A review of the literature identified a number of studies that included a technology-based project (Day & Kroon, 2010; Larson, 2008; Moreillon, Hung, & Ewing, 2009). Larson (2008) reports that students worked collaboratively to create multi-media literature extension projects which reflected their personal interests and incorporated a variety of technological components including PowerPoint slides, hyperlinks to Internet resources, sounds, digital photography, scanned documents, and voice recordings. Day and Kroon (2009) instructed students to consider color, symbols, tone, images, photographs, music, videos, movement, and powerful quotes and words to describe their novels in completing these projects.

Benefits of Integrating Technology and Peer-Led Discussion

Ability to connect to readers outside the classroom

Participating in technology-enhanced discussions of literature provides students the opportunity to connect with readers from outside the classroom, the school, the state, and even the country. Stewart (2009) points out that online literature circles allow students who are not in the same class or on the same schedule to have the experience of interacting with other students in a forum centered on their reading. Castek, Bevans-Mangelson, and Goldstone (2006) suggest further that online book clubs could be composed of students and classrooms from around the world, exposing students to other cultures as well as other ideas. Anderson and Elloumi (2004) suggest that this ability to gain perspectives and responses to literary texts from peers located in another time and place adds an essential layer to the individual students’ learning.

Provides written discussion transcripts for analysis by students and/or teachers

Transcripts of threaded discussions or online chats can be saved and/or printed and offer teachers and students an opportunity to reflect and analyze their discussions. Larson (2008) found that although initial threaded discussions were stilted and disjointed, once students were provided printed transcript summaries of the discussion sessions and asked to evaluate them, discussions showed a marked improvement. Another useful feature of many message boards is their ability to track statistics on students’ use. Teachers can access information about the number and length of posts of individual students, for example, and use this data to motivate or guide students towards writing more effective posts (Larson, 2009). Moreillon, Hunt, & Ewing (2009) also commented on the benefits of being able to access a history of the activities of group members. They found that one benefit of using wikis is their “history” function which allows teachers (and other group members) to see exactly who is participating, what their contributions are, and when they made them. This allows both teachers and participants to gain a sense of who is “pulling their weight” and give them the opportunity to assert pressure in order to engage reluctant members.

Engagement/Motivation

A number of scholars cite increased engagement and motivation as key benefits of integrating technology and peer-led discussion of literature (Carico & Logan, 2004; Day & Kroon, 2010; Larson, 2008; Moreillon, Hunt, & Ewing, 2009). In describing their work with using wikis, Moreillon, Hunt, & Ewing (2009) state that boosting students’ motivation and engagement as well as deepening comprehension were central to their work. Day and Kroon (2010) found that their students’ excitement and motivation to participate in online book clubs was sustained throughout the entire school year over several texts and rounds of discussion.
**Giving voice to marginalized students**

Online discussion, whether asynchronous as in threaded discussions or synchronous, as in online chats, provides opportunities for participation by all students, some of whom might feel reluctant to participate in face-to-face discussions. Larson (2009) suggests that conducting discussion groups using an asynchronous threaded discussion on a message board may help students who are shy, are struggling readers, or are linguistically diverse, as they these groups may hesitate to contribute in a traditional format but are likely to benefit from being able to take more time to formulate and post responses.

Asynchronous discussions provide all group members an opportunity to be heard without being interrupted. (Grisham & Wolsey, 2006). In online chats, text can be entered simultaneously and everyone who can use a keyboard has an equal chance to be heard (Carico & Logan, 2004). Kroon and Day (2010) found that students who were not regular contributors to classroom discussions actively participated in online discussions.

**Develops new literacies skills**

Technology-enhanced discussion of literature provide ample opportunities for students to develop a number of new literacies skills such as the ability to decode color, icons, and images (Grisham and Wolsey, 2006; Scharber, 2009), the chance to experiment with hyperlinks, digital documents, photographs, video files, and music and voice recordings (Larson, 2005; Scharber, 2009) and their effects on communication. As Norton-Meier (2004) points out, participants in chat rooms (or other asynchronous forms of computer-mediate discussion) experiment and play with creating icons, shortened sentences and invented spellings, but must also show an understanding of the conventions of language or risk losing their message. Moreillon, Hunt, and Ewing (2009) found that using wikis to support literature discussion afforded them the opportunity to teach lessons about netiquette, elements of design, and fair use to improve their students’ ability to successfully and ethically communicate in a digital environment. Literature discussion groups also provide a safe environment for what is, for many young learners, their first exposure to chatting (Scharber, 2009).

**Fosters classroom community and social interaction**

Results of numerous studies support the belief that online literature discussions have the potential to build a sense of community and foster social interaction. (Beeghly, 2005; Carico & Logan, 2004; Grisham and Wolsey, 2006; Larson, 2008; Larson, 2009; Moreillon, Hunt, & Ewing, 2009; Wolsey, 2004). Students in Larson's (2008) study found that a threaded discussion group provided a safe environment for group members to get to know each other and also share their thoughts about the book. Fifth graders in Larson’s (2009) study indicated that they valued replies from their classmates by thanking students for replying to their prompts, and giving praise to peers who posted interesting ideas or new viewpoints. They also asked for clarification from each other when vague or confusing prompts and replies were posted. Moreillon, Hunt, & Ewing (2009) found that using wikis to create a multimedia archive of the individual and shared meanings created around common texts provided opportunities for community-building and collaborative partnerships that will be essential in a 21st century participatory culture.

**Gives students time to think before responding**

Asynchronous forms of online literature discussion, in particular, offer students the “luxury of time” in reflecting about and responding to literature and to the ideas of others (Beeghly, 2005). Larson (2009) found that students carefully read the posts of their classmates and thought about the opinions presented before submitting replies which not only included
evidence of responding deeply to the literature but also of a careful consideration of multiple perspectives. Beeghly (2005) notes that the format of an online, asynchronous conversation provides students with time to think before responding, time to gather and organize their thoughts, and time to voice those thoughts fully without interruption.

**Improves Learning**

The integration of Information Communication Technologies (ICTs) with traditional literacy practices provides opportunities for knowledge sharing between students (Schraber, 2009), and studies support the belief that online discussions improve students’ communication skills (Carico & Logan, 2004; Larson, 2008; Schraber, 2009). Carico and Logan, 2004 found students who participated in online chats showed evidence of making personal connections to literature, reflecting on the content of what is read, and reflecting on reading strategies. Online book discussions have also been shown to improve critical thinking skills (Grisham & Thomas, 2006, Simpson, 2010). Simpson (2010) measured students’ developing critical awareness through increased use of meta-language in blended face-to-face and online collaboration and found students made gains in critical thinking skills and suggests that such a blended environment could support students with a range of abilities.

**Challenges of Integrating Technology and Peer-Led Discussion**

**Hard to interpret tone**

When conversations are written rather than spoken, the lack of body language and facial expressions can cause some difficulties in interpreting tone of voice (Larson, 2008). Students often mediate this problem through the use of emoticons and other “chat-room” language. Initially teachers in the Larson (2009) study initially gave directions that only standard English was to be used in the online discussions, but after further reflection decided that the students’ use of invented spellings, symbols, emoticons, and other “chat-room” language ultimately enhanced the conversations by adding voice and expression. They pointed out that students’ face-to-face discussion of literature often uses informal language, hand gestures, body language, and facial expressions and came to believe that these same “tools” ought to be available in online communications. Grisham & Wolsey (2006), Leu et al., (2004) and Norton-Meier (2004) all support the idea that the strategic use of symbols and icons as well as the placement of text and images play a part in communicating a message in online environment.

**Issues of speed**

The speed at which online discussions take place proved to be a challenge for participants in several studies. Day and Kroon (2010) note that online conversations occur faster than face-to-face ones because multiple discussion threads around the same book can occur at the same time. Some students found it difficult to determine which messages connected and which didn’t. Both typing speed and reading speed proved to be a challenge for some learners (Day & Kroon, 2010).

**May be distracting initially**

The novelty of using computers and webpages to discuss literature, while motivating for many students, can also be distracting. Day and Kroon (2010) found that students initially fixated on the entertaining aspects of working on computers and engaged in several off task behaviors, and their reading responses remained at a very surface level. Addressing the issue with the students, analyzing sections of discussion transcripts, and working together to brainstorm solutions helped to get students back on track. Grisham & Wolsey (2006) noted that students initially spent a lot of time formatting their messages, but become more
engaged in the discussion themselves as the year proceeded and formatting concerns consumed less and less of their time.

Issues of access

Larson (2008) found that issues of access to a computer and/or an internet connection when not at school was a concern for some students, suggesting that scheduling issues and time management are important to consider when implementing activities that occur online.

Discussion

Summary of main findings

Research supports the idea that small-group, student-directed discussions of literature can increase comprehension, engagement, and critical thinking skills (Almasi, 1995; Eeds & Wells, 1989; Klinger, Vaugh, & Schumm, 1998). According to the International Reading Association (2009), to be considered fully literate, students “must become proficient in the new literacies of 21st-century technologies” (para. 1). Because many teachers feel overwhelmed already by the task of teaching traditional print-based skills and believe they lack the time and resources to teach additional digital literacy skills, it becomes important to find ways to use the time and resources currently available to them to simultaneously teach both print-based and digital literacy skills. Several researchers have explored ways in which these new literacies might be “intertwined with tried-and-true literacy practices” (Larson, 2008, p.122). Classrooms are using a variety of formats and technologies; many of them loosely structured as some form of a technology-enhanced peer-led discussion group. Some have integrated technology into the process of selecting and reading texts (Larson, 2008), some have utilized technology as a means of preparing for literature discussions (Carico & Logan, 2004; Larson, 2009; Simpson, 2010), others have utilized technology to mediate the discussions themselves using an asynchronous format (Beeghly, 2005; Bowers-Campbell, 2011; Grisham & Wolsey, 2006; Moreillon, Hunt, & Ewing, 2009; Simpson, 2010; Walker, 2010), a synchronous format (Carico & Loagan, 2004; Day & Kroon, 2010; Larson, 2008; Scharber, 2009; Stewart, 2009), or some combination (Larson, 2008; Scharber, 2009, Simpson, 2010; Stewart, 2009). Still others have used technology to develop powerful multi-media projects as a way of extending the discussions and sharing knowledge with a wider audience (Day & Kroon, 2010; Larson, 2008; Moreillon, Hung, & Ewing, 2009).

These studies support the belief that technology-enhanced, small-group, peer-led discussions of literature have the potential to connect students to readers outside the classroom (Anderson & Elloumi, 2004; Castek, Bevans-Mangelson, & Goldstone, 2006; Stewart, 2009), provide written records of classroom discussion which can be analyzed by teachers and students (Larson, 2008; Larson, 2009; Moreillon, Hunt, & Ewing, 2009), increase motivation and engagement (Carico & Logan, 2004; Day & Kroon, 2010; Larson, 2008; Moreillon, Hunt, & Ewing, 2009), give voice to marginalized students (Carico & Logan, 2004; Grisham & Wolsey, 2006; Kroon & Day, 2010; Larson, 2009), develop new literacies skills (Grisham & Wolsey, 2006; Larson 2008; Moreillon, Hunt, & Ewing, 2009; Scharber, 2009) foster classroom community and social interaction (Beeghly, 2005; Carico & Logan, 2004; Grisham and Wolsey, 2006; Larson, 2008; Larson, 2009; Moreillon, Hunt, & Ewing, 2009; Wolsey, 2004), meet individual needs by providing time to think (Beeghly, 2005; Larson 2009), and improve student learning (Carico & Logan, 2004; Grisham & Wolsey, 2006; Larson, 2008; Schraber, 2009; Simpson, 2010). These studies also point out several challenges to consider when implementing such practices including the difficulty of interpreting tone online (Larson, 2008; Larson, 2009), the ways in which reading and typing speed can affect performance (Day & Kroon, 2010), the distractions that can result from the novelty of using computers and webpages and issues of access (Day & Kroon, 2010; Grisham & Wolsey, 2006).
Suggestions for Further Research

In-depth examination of the quality of the computer-mediated discussions is recommended. Many of the studies documented in the literature provide a brief look at the overall structure of a technology-enhanced literature discussion group, but few focus on the quality of the discussions themselves. What do these conversations reveal about the ways students collaboratively construct meaning?

A comparative study of a traditional peer-led discussion group and a technology-enhanced discussion group should be conducted. Though a number of studies discussed in the review of literature explore similarities between face-to-face and online discussion of literature, few were structured in ways that allowed the two to be directly compared. To learn more about the effects of integrating technology into a small group, peer-led discussion of literature, a comparative study between the two formats should be conducted. How do these two different contexts affect the way students respond to literature and collaboratively construct meaning?

Needs of individual students as they relate to learning in an online environment must be considered. Numerous studies described computer-mediated discussion of literature as social and collaborative. Leu et al (2004) suggests that as the new literacies become dependent on social learning strategies, teachers must be aware that socially skilled learners will likely have an advantage over more independent learners. How is the experience of discussing literature online different for learners with different learning styles?

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References


