

Refereed Conference Paper

This paper was accepted for the conference via a blind refereeing process established by the Conference Planning Committee on behalf of ALEA and AATE

Title

Bridging print and digital texts in the classroom: principles to practice

Author(s)

Kathy Mills

Abstract

Outside of schools, children and youth are frequently participants of online social networking sites, such as FaceBook and MySpace. They are often members of virtual communities, from Club Penguin to Second Life. The recreational sites of the young are centred on multimedia and video gaming cultures. Inside of schools, students are still completing fill-in-the-blank workbooks and ruling margins in their English copy books. The rapidly changing world of technology and the pervasiveness of multimedia and online communication environments have caused educators to rethink literacy teaching and learning. The literacy skills and resources that students bring to school differ markedly from those of students in the past, as they actively participate in digital cultures that are distant from the classroom in time and space. How can teachers bridge the gap between essential print literacies and the digital spaces that many students today inhabit? Seven important principles are given for bridging print and digital forms of communication, with motivating digital activities for engaging students of varied ages in literacies for today and the future.

Keywords

Social networking, virtual communities, multimedia and video gaming cultures, digital cultures, seven principles, bridging print and digital communication.

Author contact information

Dr Kathy Mills
Christian Heritage College and Queensland University of Technology
Education and Humanities and Centre for Innovation in Education
20 Walker Street, Coorparoo, Qld 4151
Ph: 38476575
Email: literacydoctor@optusnet.com.au

Bridging print and digital texts in the classroom: principles to practice

The dichotomy between the print and digital forms of communication is rapidly becoming obsolete. Communication in electronic environments is now central to participation in workplaces, recreational sites, and higher education. Students today will enter a globalised labour market, in which they will have to negotiate a profusion of networked and multimedia communications channels across a broadening range of meaning-making systems (Kalantzis & Cope, 2000; New London Group, 2000). For example, to make a sustainable and meaningful contribution to society as global citizens, students will need to make financial internet transactions, critically evaluate the reliability and authenticity of websites, engage in online social networking, and argue persuasively in synchronous and asynchronous online communication.

This paper provides seven key principles for enhancing literacy learning through new technologies in collaborative, hyperlinked textual environments. Classroom activities that facilitate the literacy outcomes in both print and digital environments are provided to illustrate and apply each main point.

Literacy educators now recognise that the integration of digital forms of communication in the English curriculum and its link with improved outcomes in print literacy is well-supported by research (Bigum & Kenway, 1996; Gee, 2003; Green & Bigum, 2003; Kress, 1997, 2003; Lankshear & Knobel, 2003; Luke, 2000). Qualitative and quantitative studies show improved outcomes for students in phonological awareness (Barker & Torgesen, 1995), decoding strategies (Macaruso & Rodman, 2009), vocabulary recognition (Olson & Wise, 1992), early reading skills (Mioduser, Tur-Kaspa, & Leitner, 2000), spelling (Wise & Olson, 1994), and writing (Gayle & Thompson, 1994; Sullivan & Pratt, 1996; Wade-Stein & Kintsch, 2004).

Additionally, students identified as at risk of school failure demonstrate literate knowledge and responsiveness when multiple sign systems that characterise digital texts are central to the literacy curriculum (Noll, 1998; O' Brian, Springs, & Stith, 2001; O'Brian, 2001; Siegel, 2006; Wilhelm, 1995). Other benefits of digital instruction for literacy learning include increased motivation, attention to literacy tasks, collaboration, self-confidence, and fewer disciplinary referrals (Dickenson, 1986; Morgan, White, Vanayan, & Lasenby, 2002).

The urgent need to integrate electronic environments with literacy teaching and learning was pre-empted by many literacy theorists throughout the 1990s, in the works of Bigum and Green (Bigum, 1997; Bigum & Green, 1993; Green & Bigum, 1993; Green & Bigum, 2003), Burbules (1996), Landow (1992; 1991), Lankshear (1998; 1997; 2000), Leu (1996, 1997), McKenna (1999), Reinking (1997), Snyder (1997, 1999), Sproull (1991), and Strassman (1997). One of the most influential arguments for extending print literacies was by the New London Group (1996), who coined the term "multiliteracies". This was a call for a new literacy pedagogy to respond to the multiplicity of communications channels, and media,

tied to the availability and convergence of new technologies, and increased cultural and linguistic diversity as a consequence of globalisation (New London Group, 1996).

Similarly, the "New Literacy Studies" (NLS) have investigated the innovative and productive potentials of informal literacies in electronic environments that children use outside of schools (Gee, 2003; Hull & Schultz, 2001; Lankshear & Knobel, 2003; Sefton-Green, 2007; Street, 2003). Despite the widespread acknowledgement of the need to merge conventional literacies with new digital forms of communication, literacy programs that bridge print and digital literacies in schools are still in their infancy (Hamilton, 2000).

1. Real world practices, purpose, and audience

A key feature of the new literacies is that they are situated, authentic forms of communication for real world audiences and purposes. For example, participating in virtual communities, contributing to wikis, and navigating hyperlinked web-pages to locate information, apply alphabetic and digital literacies in genuine communication contexts. Cognitive science and sociocultural approaches to literacy learning have demonstrated that students' minds are not simply processors of decontextualised facts. Rather, knowledge is largely situated in sociocultural settings, deeply contextualised in specific domains and practices (Rogoff & Lave, 1990; Wertsch, 1985). This principle has been expressed through a number of theories, such as situated learning advocated by Lave and Wenger (1991), and situated literacies by theorists such as Street (1995), Heath (1999), and Gee (1992). Giving attention to real world textual practices plays a vital role when teachers augment conventional literacy programs with new, digital literacies. See Figure 1.0 for examples of real world textual practices that require new technical proficiencies with digital tools for meaning making.

Examples of real world textual practices

Webcam

Using a webcam is an authentic textual practice because unlike activities such as fill-in-the-blank workbooks, students use language and technology to meaningfully communicate to others. Use a voice over internet protocol (VOIP, e.g. Skype) to communicate in real time with students in a sister school overseas. You will need a digital microphone, a webcam to view a real time image of the speaker, and VOIP software. Negotiate a suitable time to call. Sign in using your user name and password, and test your webcam settings. Students introduce themselves and check that the listener can hear and see them clearly. Remind students to maintain eye contact with the webcam to establish rapport with the viewer. The teacher thanks the listeners and ends the call. Evaluate the session with the students (Mills, 2008a, p.19).

“I’ve been everywhere, man!”

This real world activity enables students to share with a peer the geographical spaces of significance in their lives outside of school. A free virtual map program (e.g. Google Earth) can be used to view satellite imagery, maps, terrain, 3D buildings or even galaxies in the sky. You can explore rich geographical content, save your tour destinations, and share with others. In this activity, students work in pairs to share the places they have travelled locally or beyond. They take turns entering the names of familiar sites, including their own addresses to view their homes and local streets from an aerial perspective (Mills, 2008a, p.50).

Figure 1.0 Examples of Real World Textual Practices

2. Multimodal design

Multimodality is a central feature of textual practices in the digital communications environment. It expresses the complexity and interrelationship of more than one mode of meaning, combining linguistic, visual, auditory, gestural, or spatial modes (New London Group, 2000, p.25-28).

Visual meanings or modes include images, page layouts, screen formats, colours, perspectives, vectors, foregrounding and backgrounding. Audio meanings include music and sound effects. Gestural design involves body language, gestures, kinesics, feelings and behaviour. Spatial design includes the meanings of environmental, architectural, and geographical meanings. Multimodal design differs from independent modes because it interconnects the other modes in dynamic relationships. It is the most significant because it involves the whole body in the process of learning (Kress, 2000b; Luke, 2000a; New London Group, 2000).

Multimodal meaning making involves processes of integration as the reader moves alternately between various modes, which form a network of interlocking resources. Multimodality captures the multifaceted and holistic nature of human expression and perception, while linguistics alone does not embrace the full richness of semiotics (Kress, 2000b).

In schools, verbocentric views of speech and writing (Eco, 1976) have often been privileged over non-linguistic modes. Modes involved in visual arts, movement and music have been left outside dominant theories of communication in education. However, as digital texts become more pervasive, the boundaries of language learning are collapsing, replaced by a multiplicity of hybrid forms of communication (Kress, 2000a, 2000b). Consequently, students are often unprepared for the demanding uses of literacy across multiple modes in society. The multimodality of language in society today necessitates that students learn to shift meanings flexibly between sign systems, combining and switching between modes. See Figure 2.1 for examples of digitally-mediated, multimodal texts that include both conventional and new textual features.

Examples of multimodal design

CD cover design

Designing a music CD cover combines visual, spatial, and linguistic modes of meaning. Students design a CD cover for their real or imagined band using a digital image. In small groups guided by a teacher, students use a digital camera to take a photo that reflects the theme of the band. Explain that camera angles can make objects look powerful (upwards), equal (eye-level) or subordinate (downwards). Alternatively, use suitable existing pictures from a digital file. Demonstrate how to upload images from a camera and insert a photo into a document. Modify the image size to cover the page as a background. Include the band name, album name, and record company logo, giving attention to the spatial layout, font style and size, and using contrasting colours for visibility (Mills, 2008a, p.63).

Digitally recorded interview

A digitally recorded interview combines linguistic and audio modes (writing and speech). Students work in pairs to prepare, rehearse and record a radio interview between a disc jockey and a famous band. Prepare questions that can be answered using information from the Internet. Assist small groups to rehearse and digitally record their interview. Use a digital recording device, such as a laptop with built-in microphone, or microphone connected to the computer. You will also need a simple sound recording program (e.g. Microsoft Sound Recorder). Open the software and use the start and stop buttons to record. If the students experience difficulty maintaining sustained, error-free recording, encourage them to divide the script into several short recordings. The sound files can be later combined and edited in a digital media editing program (e.g. Microsoft Movie Maker). Play the audio recordings to a real audience (Mills, 2008a, p.64).

Figure 2.1 Examples of multimodal design

3. Cross-cultural and sub-cultural practice

The clientele of schools today is increasingly characterised by local diversity and global connectedness. Cultural and linguistic diversity must be seen as a powerful classroom resource for bridging digital and print literacies, not only for marginalised groups, but for the benefit of all. Classrooms are places for the negotiation of cross-cultural differences in language use, such as regional, ethnic or class-based discourses. Similarly, the classroom should create space for a variety of sub-cultural “Englishes” that are reflected in professional, recreational, sporting or peer groups (New London Group, 1996, p. 69). For example, a grommet (expert young surfer), uses terms such as “bomb”, “peak”, “pocket”, “getting barrelled”, and the “green room” (riding inside the wave).

Classroom discourses – that is, appropriate ways of speaking, moving, behaving, thinking, dressing and so forth, in the classroom – are frequently more accessible to children from Anglo-Australian, middle-class backgrounds, because these discourses are congruent with learners’ experiences outside of school (Gee, 2000a). This is because the “social field” of the school – essentially, what is made to count in the institution of schooling – excludes certain students, rather than providing further access to linguistic goods.

There needs to be a “minting process of symbolic recognition” that includes flexibility and negotiation of the rules of cultural exchange (Luke, 2009). For example, by including activities in the literacy curriculum such as digital storytelling, rap music remixing, or creating digital animations, the informal or out-of-school literacies of youth culture can be recognised formally in the “social field” of the school rather than ignored (Bourdieu & Passeron, 1990). Equitable classrooms include enabling spaces, interactional patterns, and practices for the conversion, exchange, and valuation of students’ capital (Luke, 2009).

Undeniably there is a need for schools of the future to make reflexive use of classroom discourses, allowing for the immense variability of different cultural forms of meaning making. Bridging print and digital forms of communication can be an important means to reinstate the agency of all students as engaged and productive learners. See Figure 3.0 for an example of a motivating digital activity that can be used to create space for multiple cross-cultural and sub-cultural identities of students.

Example of cross-cultural and sub-cultural textual practice

Digital scrap booking

Digital scrap booking can enable students to share personal memories captured visually through digital photography – a recreational literacy familiar to many youth in out-of-school contexts. This activity involves recognising how camera angles, colours, and music can create a sense of power. Students use a photo sharing service to mix photos and music with animated scrapbook backgrounds to print or distribute via email. Demonstrate how to choose

and download scrapbook designs that use powerful themes and strong colours (e.g. black, red, and purple). Students take digital photos using camera angles that pan upwards, making the subject appear commanding. They select and add background music to create a sense of victory, and write photo captions about courage, valour and bravery. Students choose balanced spatial layouts, themed backgrounds, and contrasting colours for clarity and aesthetic appeal. Preview the students' designs before distribution (Mills, 2008a, p.38).

Figure 3.0 Example of cross-cultural and sub-cultural textual practice

4. Hyperlinked textual practice

An important consequence of the convergence of digital and print literacies is that electronic environments challenge conventional notions of reading (See: Burbules & Callister, 1996; Green & Bigum, 2003; Landow & Delany, 1991; LoBianco & Freebody, 1997; Luke, 2000a; McKenna et al., 1999; Snyder, 1998). Navigating hypertext – electronically networked text – involves an active and open-ended process of interpreting linked meanings that are diversified to an infinite degree (Burbules & Callister, 1996).

Networked, digital texts do not require the same text mapping skills as those required to read lengthy, linear strings of page-bound print. Author-controlled textual environments, characterised by the arrangement of words in top-down, left-to-right, beginning-to-end tangibility, have changed. Virtual communication uses flexible, reader-controlled, dialogical environments that are open to manipulation. While the non-linear reading of text appeared long before the Internet was accessible, the Internet makes these inter-textual paths more explicit. Furthermore, the physical non-linearity of electronic texts involves increasingly sophisticated navigational skills and search capabilities.

A second characteristic of hyperlinked textual practices is the widened range of digital text types with different generic structures and textual features than time-honoured, written forms. New discourses have arisen that are exclusive to the digital landscape, and the related convergence of linguistic and iconic codes has prompted textual theorists to examine these shifts in meaning making (Kalantzis, Cope, & Fehring, 2002; Lankshear et al., 1997; Mitchell, 1999). Students need to become familiar with new purposes and generic features of these reconfigured, screen-based genres, which are frequently more informal, abbreviated, and interactive (Reinking, 1997; Williams, 2001). See Figure 4.0 for a novel digital activity that draws upon hyperlinked textual practices.

Example of hyperlinked textual practice

E-postcard

This activity requires basic Internet navigation skills to locate a free e-postcard facility on a website, drawing upon non-linear reading of web pages. It highlights the interactive possibilities of electronic communication between sender and receiver. After a school camp or excursion, send e-postcards to buddies in another grade, friends, or family members.

Students select, write and send an e-postcard from a free e-postcard website. They choose a photo of an iconic scene or landmark that they visited from the selection of images. An e-postcard includes:

- recipient's name
- recipient's email address
- personal message
- closing
- sender's email address.

The students and teacher edit the e-postcards before sending them electronically (Mills, 2008a, p.50).

Figure 4.0 Example of hyperlinked textual practice

5. Collaborative practice

Computer mediated communication is producing radically merged and reshaped social practices and interactions (Luke, 2000a). For example, electronic environments allow readers and writers who are physically remote to occupy the same cyberspace in a radical interactivity (Burbules & Callister, 1996). Two-way communication occurs through electronic networks, with hypertext blurring the distinction between reader and author as both become readers of hypertext pathways. Electronic texts are not static, discrete units, but are dynamic and malleable, open to re-authoring multiple times. There is often an abandonment of the single-minded, authorial voice for scholarly texts, which has been supplanted by a multivocal metadiscourse, that is, writing composed by many authors which reflects upon itself (e.g. blogs). There is increased dialogue between author and reader, along with a greater need to acknowledge opposing views (Leu, 1997; Peters & Lankshear, 1995; Reinking, 1997).

A key feature of the new literacies is their “participatory” nature (Lankshear & Knobel, 2006, p.2). For example, when students contribute to an online forum, they engage in an interactive and participatory process of argumentation that that draws upon their collective rather than individual intelligences. Text users must switch between reading and writing, creating rapid interactivity between author and receiver (e.g. internet relay chat) (Mills, 2008b). Expertise and authority are distributed among the participants, rather than located in a single individual. An active sociality is established as an open, fluid, and continuous dialogue, rather than one that is closed, static, and bound. These are distinctive features of the dynamic and interactive social relations in workplaces and global communications environments today (Gee, 2000b). See Figure 5.0 for an example of an activity that constitutes collaborative practice in a networked environment.

Example of collaborative practice

Online chat

Online chat is a highly participatory activity in which the users communicate through threaded written text that switches more rapidly and fluidly between writers and receivers than an email or a text message. In small groups, use online (synchronous) chat to discuss a current and relevant environmental issue. You will need an instant messaging service that allows more than two contributors to the discussion (e.g. a chat room set up by an educational institution). The teacher begins the discussion and prompts the students to continue the thread. Monitor the frequency of responses from each student and ask those who are reluctant to contribute to share their opinion. Encourage students to read and correct their spelling before sending each line of text. When a typing error is sent, a common practice is to send the corrected form of the word flagged with an asterisk. See the list of common abbreviations for online chats (Mills, 2008a, p.110).

Abbreviations for online chat

AFK- Away from keyboard

AT – Anytime

AWHIFY – Are we having fun yet?

B4N – Bye for now

BBS – Be back soon

CUS – See you soon

LOL – Laughing out loud

KK – Ok, Ok

ROFLOL – Rolling on floor laughing out
loud

TYVM – Thank you very much

YW – You're welcome

Figure 5.0 Example of collaborative practice

6. Generative practice

Bridging digital and print literacies involves generative or creative textual practices, rather than simply reproducing sign-making conventions. In other words, authoring multimedia texts involves the transformation and recontextualisation of existing meanings and textual designs to create something new (Cope, 2000; Kress, 2000a; New London Group, 1996; Trimbur, 2001). Generative practice may differ in degrees and types of transformed meanings for different students and for different texts, ranging from close or good reproduction to significant creative change (Kalantzis & Cope, 2000; Mills, 2006a, p.51).

Generative practice is based on the research tradition of cognitive psychology (See: Billet, 1992; Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991). Cognitive theorists suggest that literacy is similar to a set of tools, understood through use and reflection on the cultural context in which it is used. The transfer of knowledge and skills from formal school settings to real world settings and cultural sites is often difficult, and it is common for students to acquire routines and decontextualised knowledge that they are unable to apply. For example, completing fill-in-the-blank spelling or vocabulary worksheets does not enable students to generate original texts. Knowledge becomes inert unless applied to a variety of authentic, natural, or real life functions in a reflective manner.

Creativity demonstrated in the personal transformation of texts is central, as learners reflectively design and apply new literacy practices embedded in their own goals and values. In generative practice, sign-makers not only make new meanings, but remake themselves through their engagement with others. For example, by taking on the situated identities of people engaged in real work, such as producers, filmmakers, authors, and web designers, students may see their own and others' potential for designing with new confidence (Mills, 2006a, p.29-30).

Hybridisation – the mixing of different discursive practices in a text – is a related feature of generative textual practice (Fairclough, 2000). For example, the generic limits of picture books have been extended by including puzzles, riddles, spoonerisms, flaps, pockets and fold-out pages which continually engage the reader through print and visual modes (Bull & Anstey, 2003). The picture book can be merged with the hybrid textual features of electronic, networked sites, transforming the linear reading of the book with simulated hyperlinked pages and icons. These features invoke a non-linear reading of the text with multiple pathways. Bridging digital and print literacies involves students in using and creating texts that are characterised by hybridisation, using original combinations of existing resources for meaning making (Kalantzis & Cope, 2005; Lo Bianco, 2000, p.92; Mills, 2006a, p.34). Similarly, it involves transferring knowledge from one context to another, resulting in generative hybridity, divergence, and originality (Kalantzis & Cope, 2005, Mills, 2006 #982, p.56). See Figure 6.0 for an example of a digital activity that provides opportunity for students to engage in generative practice.

Example of generative practice

Comic building online

Comic building online is a new text type that draws upon the features of conventional, hand-drawn comics. Digital tools enable the user to combine graphics, speech bubbles, and text to create professional and creative comic strips to entertain an audience. Students use a comic creation website to design a witty comic strip that includes animals with human qualities (personification). The comics should communicate an educational message to younger students. Show the students examples of comics that conclude with a twist. Demonstrate how to insert characters, thought bubbles, speech balloons, and text, and modify the size and orientation using the facilities of the website (Mills, 2008a, p.32).

Figure 6.0 Example of generative and creative practice

7. Critical practice

Children today have access to digital texts and from powerful, unrestrained and potentially harmful electronic sources that purport to offer authentic information. This has prompted educators to teach critical literacy skills, such as evaluating and challenging the reliability of information, and identifying who benefits from electronic sites. With the enormous

growth in the volume of textual materials, there is also a requirement for abilities such as critically selecting, interpreting, and reducing relevant information (Mills, 2006a).

Critical theorists have long emphasised the need for the critical reading of texts and their associated social practices, including literacy pedagogy itself (See, for example: Bourdieu, 1994; Freire & Macedo, 1987; Luke, Comber, & Grant, 2003; Luke & Freebody, 1997). However, there is now a heightened educational concern associated with the Internet (Luke, 2000b). Learners need to analyse critically the human intentions and interests, the underlying social, cultural, ideological, political, and value-laden assumptions of designs, and the workings of power. They can be encouraged to consider multiple readings of texts and alternate points of view rather than unlocking or reproducing the “correct meaning” (Kalantzis & Cope, 2005, p.21).

Critical literacy now involves critical engagement and multiple readings of texts that extend beyond written words, such as the spatial, visual, audio, and gestural elements in television programs, movies, billboards, and electronic texts that work synergistically to create meanings. Through the functional analysis of multimodal design elements and their dynamic connections, the deeper meanings of pervasive media can be illuminated. Most importantly, students need to critically analyse the underlying human intentions and interests of the authors and producers which drive the consumption of multimodal texts in children’s everyday world of textual experiences, from book to screen.

Print and digital texts need to be shown to represent particular points of view that silence other voices, and which are open to critique (Muspratt, Luke, & Freebody, 1997). Without critical pedagogy of this kind, comprehension becomes cultural assimilation, bringing readers’ epistemologies into alignment with a corpus of historically valued knowledge. See Figure 7.0 for an example of critical textual practice applied to identifying and evaluating digitally-modified images in the media.

Example of critical textual practice

Photos that lie

The aim of this activity is for students to understand that media images are digitally manipulated and modified to exaggerate what is real. It teaches students to critically evaluate depictions of flawless models that do not depict reality. Demonstrate how to upload and digitally modify an ID photo using imaging software (e.g. Adobe Photoshop). For example, use red-eye reduction, crop the image, modify the colours, and use functions to beautify the image (e.g. paste sections of skin colour over blemishes, whiten teeth and eyes). Students upload their own ID photos and modify them subtly or in exaggerated ways. Discuss the need to evaluate images critically, rather than accepting them as fact (Mills, 2008a, p.87).

Figure 7.0 Example of critical textual practice

Conclusion

Educators now recognise that rapid technological change has created divergences between screen-based texts and books, necessitating new pedagogies to replace exclusively monomodal literacy approaches (See, for example: Luke, 2008; Mills, 2006b; Mills, 2009; New London Group, 2000). Educators cannot simply assume that students are competent in techno-literacy practices because they access video games for pleasure. There is a need for literacy programs to include a wide range of multimodal textual practices, including those associated with digital communications environments that are required for meaningful participation in a changing society (Mills, 2006a). Teachers need to bridge the print-digital divide by utilising the affordances of innovative digital technologies and new literacy pedagogies for the new times.

References

- Barker, T. A., & Torgesen, J. K. (1995). An evaluation of computer-assisted instruction in phonological awareness with below average readers *Journal of Educational Computing Research* 13(1).
- Bigum, C. (1997). Teachers and computers: In control or being controlled. *Australian Journal of Education*, 41(3), 247-261.
- Bigum, C., & Green, B. (1993). Technologising literacy or interrupting the dream of reason. In A. Luke & P. Gilbert (Eds.), *Literacy in Context: Australian Perspectives and Issues* (pp. 4-28). St Leonards, NSW: Allen and Unwin.
- Billet, S. (1992). Towards a theory of workplace learning. *Studies in Continuing Education*, 14(2), 143-155.
- Bourdieu, P. (1994). Social space and symbolic power. In *The polity reader in social theory*. Cambridge, MA: Polity Press.
- Bourdieu, P., & Passeron, J. C. (1990). *Reproduction in education, society and culture* (2nd ed.). Beverley Hills, CA: Sage
- Brown, A., Collins, J., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.
- Bull, G., & Anstey, M. (Eds.). (2003). *The literacy lexicon*. Frenchs Forest, NSW: Pearson Education Australia.
- Burbules, N., & Callister, T. (1996). Knowledge at the cross-roads: Some alternative futures of hypertext learning environments. *Educational Theory*, 46(1), 23-50.
- Cope, B. (2000). Designs for social futures. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 203-234). South Yarra: Macmillan.
- Dickenson, D. (1986). Cooperation, collaboration, and a computer: Integrating a computer into a first-second grade writing program. *Research in the Teaching of English*, 20(4), 357-378.
- Eco, U. (1976). *A theory of semiotics*. Bloomington, IN.

- Fairclough, N. (2000). Multiliteracies and language: Orders of discourse and intertextuality. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 162-181). South Yarra, VIC: Macmillan.
- Freire, P., & Macedo, D. (1987). *Literacy: Reading the word and the world*. Hadley, MA: Bergin and Garvey.
- Gayle, A., & Thompson, A. (1994, April 4-8). *Analysis of the effect of networking on computer-assisted collaborative writing in a fifth grade classroom* Paper presented at the Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Gee, J. (1992). *The social mind: Language, ideology, and social practice*. New York: Bergin and Garvey.
- Gee, J. (2000a). Discourse and sociocultural studies in reading. In M. Kamil, P. Mosenthal, P. Pearson & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 195-208). Mahwah, NJ: Erlbaum.
- Gee, J. (2000b). New people in new worlds: Networks, the new capitalism and schools. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 43-68). South Yarra: Macmillan.
- Gee, J. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave, Macmillan.
- Green, B., & Bigum, C. (1993). Aliens in the classroom. *Australian Journal of Education*, 37(2), 119-141.
- Green, B., & Bigum, C. (2003). Literacy education and the new technologies: Hypermedia or media hype. In G. Bull & M. Anstey (Eds.), *The Literacy Lexicon* (2nd ed., pp. 209-224). Frenchs Forest, NSW: Pearson Education Australia.
- Hamilton, M. (2000). *Sustainable literacies and the ecology of life-long learning*. Paper presented at the Supporting lifelong learning: A global colloquium, July 5-6.
- Heath, S. (1999). Literacy and social practice. In D. Wagner, R. Venezky & B. Street (Eds.), *Literacy: An international handbook* (pp. 102-106). Boulder, California: Westview Press.
- Hull, G., & Schultz, K. (2001). Literacy learning out of school: A review of theory and research. *Review of Educational Research*, 71(4), 575-611.
- Kalantzis, M., & Cope, B. (2000). A multiliteracies pedagogy: A pedagogical supplement. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 239-248). South Yarra, VIC: Macmillan.
- Kalantzis, M., & Cope, B. (Eds.). (2005). *Learning by design*. Melbourne, VIC: Victorian Schools Innovation Commission and Common Ground.
- Kalantzis, M., Cope, B., & Fehring, H. (2002). Multiliteracies: Teaching and learning in the new communications environment. *Primary English Notes*, 133, 1-8.
- Kress, G. (2000a). Design and transformation: New theories of meaning. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 153-161). South Yarra, VIC: Macmillan.

- Kress, G. (2000b). Multimodality. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 182-202). South Yarra, VIC: Macmillan.
- Landow, G. (1992). *Hypertext: The convergence of contemporary critical theory and technology*. Baltimore, USA: Jones Hopkins University Press.
- Landow, G., & Delany, P. (1991). Hypertext, hypermedia and literary studies: The state of the art. In P. Delany & G. Landow (Eds.), *Hypermedia and literary studies* (pp. 3-50). London, England: MIT Press.
- Lankshear, C. (1998). Meanings of literacy in contemporary educational reform proposals. *Educational Theory*, 48(3), 351-372.
- Lankshear, C., Gee, J., Knobel, M., & Searle, C. (1997). *Changing literacies*. Philadelphia: PA: Open University Press.
- Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning*. Philadelphia, PA: Open University Press.
- Lankshear, C., & Knobel, M. (2006, April 11, 2006). *Blogging as participation: The active sociality of a new literacy*. Paper presented at the American Educational Research Association Conference, San Francisco, US.
- Lankshear, C., Snyder, I., & Green, B. (2000). *Teachers and techno-literacy: Managing literacy, technology and learning in schools*. St Leonards: NSW: Allen & Unwin.
- Lave, J., & Wenger, E. (Eds.). (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Leu, D. (1996). Sarah's secret: Social aspects of literacy and learning in a digital information age. *The Reading Teacher*, 50(2), 162.
- Leu, D. (1997). Caity's question: Literacy as deixis on the Internet. *The Reading Teacher*, 51(1), 62.
- Lo Bianco, J. (2000). Multiliteracies and multilingualism. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 92-105). South Yarra, VIC: Macmillan.
- LoBianco, J., & Freebody, P. (1997). *Australian literacies: Informing National policy on literacy education*. Belconnen, ACT: Language Australia.
- Luke, A. (2008). Using Bourdieu to make policy: mobilizing community capital and literacy. In J. Albright & A. Luke (Eds.), *Pierre Bourdieu and literacy education*. Routledge: New York.
- Luke, A. (2009). Race and language as capital in school: A sociological template for language education reform. In R. Kubota & A. Lin (Eds.), *Race, culture and identities in second language education* London: Routledge.
- Luke, A., Comber, B., & Grant, H. (2003). Critical literacies and cultural studies. In M. Anstey & G. Bull (Eds.), *The literacy lexicon* (2nd ed., pp. 15-35). Frenchs Forest: NSW.
- Luke, A., & Freebody, P. (1997). Shaping the social practices of reading. In S. Muspratt, A. Luke & P. Freebody (Eds.), *Constructing critical literacies: Teaching and learning textual practice* (pp. 185-225). Sydney: Allen & Unwin.

- Luke, C. (2000a). Cyber-schooling and technological change. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 69-91). South Yarra, VIC: Macmillan.
- Luke, C. (2000b). Cyber-schooling and technological change: Multiliteracies for new times. *Journal of Adolescent and Adult Literacy*, 43(5), 424-435.
- Macaruso, P., & Rodman, A. (2009). Benefits of computer-assisted instruction for struggling readers in middle school. *European Journal of Special Needs Education*, 24(1), 103-113.
- McKenna, M., Reinking, D., Labbo, L., & Kieffer, R. (1999). The electronic transformation of literacy and its implications for the struggling reader. *Reading and Writing Quarterly*, 15(111-126).
- Mills, K. A. (2006a). *Multiliteracies: A critical ethnography: Pedagogy, power, discourse and access to multiliteracies*. Unpublished PhD thesis, Queensland University of Technology, Brisbane.
- Mills, K. A. (2006b). We've been wastin' a whole million watchin' her doin' her shoes: Situated practice within a pedagogy of multiliteracies. *The Australian Educational Researcher*, 33(3), 13-34.
- Mills, K. A. (2008a). *Deep end teacher guide: Level purple* Flinders Park ERA Publications.
- Mills, K. A. (2008b). *The seven habits of highly effective readers*. Paper presented at the AATE/ALEA National Conference: Stories, places, spaces.
- Mills, K. A. (2009). Multiliteracies: Interrogating competing discourses. *Language and Education*, 23(2).
- Mioduser, D., Tur-Kaspa, H., & Leitner, I. (2000). The learning value of computer-based instruction of early reading skills. *Journal of Computer Assisted Learning*, 16, 54-63.
- Mitchell, R. (1999). Catching literature in the 'net'. *Primary English Teaching Association*(117), 1-8.
- Morgan, J., White, A., Vanayan, M., & Lasenby, J. (2002, April 30 – May 2). *The use of computer technology for literacy intervention: Factors contributing to the use of computer-delivered skills-based literacy software*. Paper presented at the Pan-Canadian Education Research Agenda Symposium: "Information Technology and Learning" Montreal, Quebec.
- Muspratt, S., Luke, A., & Freebody, P. (1997). *Constructing critical literacies: Teaching and learning textual practice*. Allen & Unwin: Melbourne.
- New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-92.
- New London Group. (2000). A pedagogy of multiliteracies: Designing social futures. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 9-38). South Yarra, VIC: Macmillan.
- Noll, E. (1998). Experiencing literacy in and out of school: Case studies of two Indian American youths. *Journal of Literacy Research*, 30, 205-232.

- O' Brian, D., Springs, R., & Stith, D. (2001). Engaging at risk students: Literacy learning in a high-school literacy lab. In E. Moje & D. O'Brian (Eds.), *Constructions of literacy* (pp. 105-123). Mahwah, NJ: Erlbaum.
- O'Brian, D. (2001). "At risk" adolescents: Redefining competence through the multiliteracies of intermediality, visual arts, and representation *Reading Online*, 4(11).
- Olson, R., & Wise, B. (1992). Reading on the computer with orthographic and speech feedback: An overview of the Colorado remediation project *Journal of Reading and Writing*, 4(2), 107-144.
- Peters, M., & Lankshear, C. (1995). Critical literacy and digital texts. *Educational Theory*, 45(4), 51-70.
- Reinking, D. (1997). Me and my hypertext: A multiple digression analysis of technology and literacy. *The Reading Teacher*, 50(8), 626.
- Rogoff, B., & Lave, J. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Cambridge, MA: Harvard University Press.
- Sefton-Green, J. (2007). *Literature review of informal learning with technology outside school*. Bristol: United Kingdom.
- Siegel, M. (2006). Rereading the signs: Multimodal transformations in the field of literacy education. *Language Arts*, 84(1), 65.
- Snyder, I. (1997). *Page to screen: Taking literacy into the electronic era*. London: Routledge.
- Snyder, I. (1998). Beyond the hype: Reassessing hypertext. In I. Snyder (Ed.), *Page to screen: Taking literacy into the electronic era* (pp. 125-141). London: Routledge.
- Snyder, I. (1999). Integrating computers into the literacy curriculum: More difficult than we first imagined. In J. Hancock (Ed.), *Teaching literacy using information technology* (pp. 11-30). Carlton South, VIC: Australian Literacy Education Association.
- Sproull, L., & Kiesler, S. (1991). *Connections: New ways of working in the networked organisation*. Cambridge: MA: MIT Press.
- Strassman, P. (1997). Information systems and literacy. In G. Hawisher & C. Selfe (Eds.), *Literacy, technology and society: Confronting the issues* (pp. 134-141). Upper Saddle River, NJ: Prentice Hall.
- Street, B. (1995). *Social literacies: Critical approaches to literacy in development, ethnography and education*. London: Longman.
- Street, B. (2003). What's "new" in the new literacy studies? Critical approaches to literacy in theory and practice. *Current Issues in Comparative Education*, 5(2), 77-91.
- Sullivan, N., & Pratt, E. (1996). A comparative study of two ESL writing environments: A computer-assisted classroom and a traditional oral classroom. *System*, 24(4), 491-501.
- Trimbur, J. (2001). Review: Multiliteracies: Literacy learning and the design of social futures. *College Composition and Communication*, 52(4), 659.
- Wade-Stein, D., & Kintsch, E. (2004). Summary Street: Interactive computer support for writing. *Cognition and Instruction*, 22(3), 333-362.

- Wertsch, J. (1985). *Culture, communication, and cognition: Vygotskian perspectives*. Cambridge: Cambridge University Press.
- Wilhelm, J. (1995). Reading is seeing: Using visual response to improve the literacy reading of reluctant readers. *Journal of Reading Behaviour*, 27(4), 467-503.
- Williams, M. (2001). Digital guests in your classroom. *Primary English Teaching Association*, 129.
- Wise, B., & Olson, R. (1994). Computer speech and the remediation of reading and spelling problems. *Journal of Special Education Technology*, 12(3), 207-220.