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Multiple Visions of Multimedia Literacy: Emerging Areas of Synthesis

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Screen activity is a central fact of life for American children and teens, with children ages 8 to 18 spending an average of eight hours per day using media, including television, videogames, the Internet, newspapers, magazines, films, radio, recorded music, and books (Kaiser Family Foundation, 1999). Even American babies and toddlers spend two or more hours per day using media (Kaiser Family Foundation, 2003a). In contemporary society, with rapid changes taking place in the way that information is created and distributed, children and young people need to be able to find, select, comprehend, and evaluate information and entertainment messages. While educators rightly emphasize the development of language competencies, it is also valuable for students to learn to use symbol systems, including images, sound and music, as a means of self-expression and communication, as these are now an integral part of contemporary life. While educational technologists have privileged interactive computing, online synchronous and asynchronous communication as focal issues (Fouts, 2000; Oppenheimer, 2003), consumption of popular culture and mass media messages is still the central leisure activity for Americans, Europeans, and an increasingly large number of people around the world. Mass media messages provide most people with their primary source of information about the world (Kubey & Csikszentmihalyi, 1990) and the use of media messages—particularly popular music, film and television—continues to be a primary component of adolescent social interaction (Lenhart, Rainie & Lewis, 2001) and socialization (Calvert, 1998). Adolescents' interest in mass media and popular culture may drive much of their electronic reading and writing (using Web sites and interactive online communication experiences), particularly for youth from high-poverty communities (Monroe, 2004). As a result, literacy educators are recognizing the need to respond to the changing array of media technologies and resources used in the world outside the classroom in order to make education more responsive to the needs of learners in the 21st century (Flood, Heath & Lapp, 1997).

As a result, more and more scholars and educators are using terms such as *visual literacy, media literacy, critical literacy, information literacy* and *technology literacy* to expand the concept of literacy so that visual, electronic, and digital forms of expression and communication are included as objects of study and analysis. Academic scholars in the fields of literary theory, cultural studies, history, psychology, library and information science, medicine and public health, linguistics, rhetoric, communication and media studies have become increasingly interested in how people comprehend, interpret, critically analyze and compose texts of various kinds. Literacy educators no longer "own" the concept of literacy. Questions about the processes of literacy

are being interrogated by many different scholars using a variety of theoretical and disciplinary lenses. Each year, a growing number of K–12 educators are using technologies to bring students access to online newspapers, magazine articles, audio programs, narrative films and television documentaries, blogs, and other multimedia resources to help students build critical thinking, communication, creativity and collaborative problem-solving skills (Hobbs, 2004). They are involving students in creating their own messages using visual, electronic and digital media tools. Stakeholders also include business leaders, youth development specialists, federal and state education officials, parents, community activists and artists who have voiced their ideas about issues related to the uses of media and technology in literacy education. Like the parable of the blind man and the elephant, each stakeholder group approaches the topic of *multiliteracy* from different perspectives, and as a result, there are numerous, differentially nuanced visions of what these skills encompass (Tyner, 1998).

This paper reviews the disciplinary traditions and key concepts of some of the new literacies and examines the consensus (and disjunctures) that are beginning to emerge among diverse stakeholders and scholars as some key ideas are beginning to circulate in a range of disciplines. A model that synthesizes this literature is created in order to support the work of scholars interested in investigating how teachers translate the "big ideas" of multiliteracies into classroom practice and to support the development of measures to assess students' learning. This paper then reviews the small, but growing, body of evidence about the uses of film, video, newspapers, and computers as tools for literacy learning and identifies research opportunities for future interdisciplinary scholarship focused on understanding how multimedia and popular culture texts can be used as tools to support literacy development among K–12 learners.

DISCIPLINARY FRAMEWORKS SHAPE PRIORITIES FOR THE NEW LITERACIES

Throughout the 20th century, calls to expand the concept of literacy have arisen from a number of scholars from different disciplinary and intellectual backgrounds, including media studies, technology education, literary studies, library and information sciences, education, cultural studies, and the visual arts. By and large, the discourse between these scholarly fields has been limited, and only a few scholars have served as intermediaries and translators, framing ideas across multiple fields (Kellner, 1995; Tyner, 1998). Increased access to scholarship online has probably been a contributing factor in the growth of border crossing and cross-disciplinary or interdisciplinary work in literacy education.

Visual Literacy. Based on nearly 100 years of work by cognitive psychologists, artists, literary scholars, graphic designers, art historians, and philosophers on the psychology of vision, aesthetics, and spatial intelligence (see reviews in Gregory, 1970), academics and K–12 classroom teachers in both arts and humanities fields have long incorporated visual materials into the classroom in order to demonstrate how factors like selection, framing, composition, sequence, and aesthetic dimensions of images influence viewers' interpretations and emotional responses. While critics identify longstanding questions about the coherence and viability of assertions about the value of visual literacy made by practitioners and scholars (Avgirinou & Ericson, 1997), visual literacy education aims to demonstrate how genres, codes, conventions and formats shape perceptual and interpretive processes. Scholars with interests in visual literacy have examined how images are comprehended and interpreted, how language and images interact in the meaning-making process (Worth & Gross, 1981), how exposure to visual images affects general cognitive and intellectual development (Messaris, 1994), and how semiotic and aesthetic dimensions

of images can be examined and appreciated (Eco, 1979; Natharius, 2004). In comparing the differences in emphasis among various multiliteracies, it is clear that visual literacy privileges the "reading" process of "viewing and interpreting" images more than the "composing" process of creating and constructing images (Tyner, 1998).

Learning about the visual conventions of images gives viewers a foundation for heightened conscious appreciation of artistry and the ability to recognize the manipulative uses and ideological implications of visual images (Messaris, 1994). A fundamental dimension of teaching visual literacy is the emphasis on distinguishing between pictures and reality, as naïve viewers imagine that images produced by photographic media are simple mechanical records of actuality with high levels of correspondence and fidelity (Griffin & Schwartz, 1997). The problem of "representation" has been articulated by film scholars throughout the 20th century (see Nichols, 1992 for review). Texts are only representations of reality, but scholars have been intrigued by the ways in which people process visual texts as if they were veridical experience (Messaris, 1994). While in elementary and secondary educational practice a focus on the aesthetics of images has its locus in visual arts education, there is a tradition of exploring visual literacy in language arts, particularly in film (or film and literature) courses often offered as electives in U.S. and European high schools. Concepts including realism, truthfulness, accuracy, bias, objectivity, and stereotyping have shaped classroom activity not only in English language arts, but also in social studies, science, and even health education (Aufderheide, 1993).

Information Literacy. Information literacy has been defined as a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use it (American Library Association, 2000). At the heart of it, information literacy emphasizes the need for careful selection, retrieval and choice-making in response to the abundant information available in the workplace, at school, and in all aspects of personal decision-making, especially in the areas of citizenship and health. Deriving from the influential *A Nation at Risk* report in 1983, a coalition of 65 national organizations founded the National Forum on Information Literacy which was highly influential in outlining the role of the library and information resources in the development of K–12 and higher education (Plotnick, 1999).

Information literacy education emphasizes the critical thinking, meta-cognitive, and procedural knowledge used to locate information in specific domains, fields, and contexts. A prime emphasis is placed on recognizing message quality, authenticity and credibility. Personal and contextual factors activate or suppress people's evaluative stance towards information, and scholars have examined the conditions under which people are likely to critically assess information or accept information at face value (see Fitzgerald, 1999 for review).

Critics have claimed that information literacy does not emphasize the ways in which meaning is constructed through interpretation (Lankshear, Snyder & Green, 2000). Among some K–12 practitioners, information literacy may be defined more narrowly as mere skills, as in the process of locating information using library classification systems and Boolean search strategies, using checklist-type criteria to evaluate Web-based source materials, and avoiding plagiarism through correct citation of source materials (Dibble, 2004). Critics perceive that information literacy appears to emphasize the simple acquisition of "facts" to be sought and used to make a case for an argument, without the recognition that information and knowledge are the products of cultural practices that exist within the context of economic and political relations (Kapitzke, 2003). But since the process of finding, using and handling information is always context-specific, it is never only just a routine application of a particular set of operations. In line with this perspective, some scholars see information literacy as more broadly and more closely akin to processes involved in reading. For example, information literacy scholars have studied the personal responses of eighth grade social studies students after viewing a film (Vandergrift, 1987) and examined how college

freshmen activated critical thinking skills in their interpretations of magazine articles about science (Manuel, 2002). Dissatisfied with the focus on information and eager to connect the critical thinking tradition of information literacy with newer forms of online communication, Gilster (1998) has coined the term *digital literacy* as the ability to understand, evaluate, and integrate information in multiple formats. Even more broadly, Lloyd (2003, 90) has rejected information as a set of skills, describing it instead as a meta-competency, where individuals are able to "recognize the nature of their need for information, actively navigating cognitive and environmental barriers, and accommodating and assimilating information as they create new knowledge."

Media Literacy. Media literacy education in the United States has been deeply influenced by the work of British, Canadian and Australian educators and scholars who have developed a significant body of writing about instructional practices that engage children and young people in critically analyzing mass media messages and popular culture (see Alvarado & Boyd-Barrett, 1991 for review). This approach is theoretically aligned with communication scholarship in audience reception studies, which emerged from mid–20th century research in the fields of literary studies, cultural studies, and media effects. Scholars have used concepts including uses and gratifications, spectatorship, resistant and oppositional reading of media texts, conceptualizations of active and passive audiences, fan culture and interpretive communities, and screen theory (see Brooker & Jermyn, 2003 for an identification of central texts and scholars). Positioned in the 1970s as a response to television's supposed deleterious impact on childhood socialization, and originally labeled "critical viewing skills" (Brown, 1991), educators and scholars have broadened the focus to emphasize an expanded conceptualization of literacy as the ability to access, analyze, evaluate, and communicate messages in a wide variety of forms (Aufderheide, 1993). As used here, the term *critical* refers to the recognition that visual and electronic messages are constructed texts that present particular, distinctive points of view as a result of the economic, political and social contexts in which they circulate. In this view, critical readers and viewers are aware of the "constructedness" of media messages and explore who produces texts, their motives and purposes for communication and expression, and the role of media institutions, economics, and ideology in the construction and dissemination of cultural messages (Brunner & Tally, 1998; Buckingham & Sefton-Green, 1994). A "generic" focus is evident among media literacy educators, as media literacy educators emphasize specific ways of reading messages in the genres of print and television news media, advertising, non-fiction television, and narrative film. Issues including advertising and materialism, media violence, the First Amendment and freedom of expression, and the representation of gender and race in the media are also featured in curriculum for secondary students. This reflects the enduring traditions of media literacy which have been associated with questions whether to conceptualize the audience as innocent victim, active text reader, hedonistic pleasure-seeker, or political dupe (McLuhan, 1964).

Media literacy education is often defined by its emphasis on pedagogy: it stresses a more active, student-centered, participatory style that emphasizes inquiry and learning by doing (Buckingham, 2003). Rather than emphasize teachers as providers of knowledge, media literacy pedagogy stresses 1) the process of inquiry, with critical questions guiding the process of message analysis and 2) situated action learning, based on the work of Freire and Macedo (1987), which emphasizes the cycle of awareness, analysis, reflection, action and experience in a community context that is responsive to the needs of individuals, particularly as they relate to social inequalities and political injustices. Media literacy educators emphasize the centrality of "composition" using media tools and technologies and advocate for moving media production away from its historically vocational track in secondary education to align it more closely within English education. Media literacy practices involve students in actively creating messages using publishing software, digital cameras, video, and other media. Recently, the National Council of Teachers of

English (NCTE) approved a resolution stating that they will 1) encourage preservice, in-service, and staff development programs that will focus on new literacies, multimedia composition, and a broadened concept of literacy 2) encourage research and develop models of district, school, and classroom policies that would promote multimedia composition, and 3) encourage integrating multimedia composition in English language arts curriculum and teacher education, and in refining related standards at local, state, and national levels (NCTE, 2003). As yet, however, there is little evidence to know the extent to which increasing access to low-cost, home video, editing software, and Web publication tools have affected instructional practices in secondary English education. But more than 40 states in the U.S. have included media literacy outcomes in their state education frameworks (Kubey & Baker, 2001), which reflects the gradual perceptual changes among educational leaders concerning the value of these skills for life in a media-rich and technology-saturated society.

Critical Literacy. Arising from traditions established by work in semiotics and cultural studies, literacy scholars have begun to define reading as not just extracting meaning from text, but the process of constructing meaning through interaction and involvement. "Meaning," in this view, is understood in the context of social, historic and power relations, not just the product of the author's intentions (Kellner, 1995; Cervetti, Pardales, & Damico, 2001). For these scholars and practitioners, "texts" are any form of symbolic expression used in the communication of meaning (Barthes, 1972). As used by critical literacy scholars, the term *critical* refers to the recognition of oppression and exploitation as embedded in texts and textual activity; critical literacy is a component of the struggle for a better society, with an explicit ideological focus on issues of inequity as related to race, gender, class, and sexual orientation (Kellner, 1995). Critical literacy education emphasizes that identity and power relations are always part of the process of composing and interpreting texts, and that these processes occur in a socio-culturally and historically-bound framework.

Connected to Freire and Macedo's (1987) exploration of reading within a sociocultural context, critical literacy scholars and educators examine and understand how various texts, including pictures, icons, and electronic messages (as forms of symbolic expression) are used to influence, persuade, and control people. Critical literacy emphasizes that literacy cannot be understood as just "cracking the code" or "analyzing the author's intentions" but must be understood as an embodiment of social and political relationships. This perspective foregrounds sociocultural factors within a framework of power relations, incorporating within literacy practices an understanding of the identity of the participants, how the activity is defined or executed, the timing of the activity, where it occurs, and why participants are motivated to perform the activity (Rand Reading Study Group, 2004). At the same time, these scholars emphasize the importance of not just reading texts critically, but understanding how people can control their experience of the world through constructing messages as part of transforming society (Gee, 1996). A central component of critical literacy pedagogy is its focus on examining multiple perspectives and points of view, often through juxtaposing diverse materials, including photos, videos and artifacts of popular culture (Luke, 1997; McLaughlin & DeVogel, 2004) and exploring themes related to power, identity, pleasure, and transgression (Alvermann, Moon & Hagood, 1999).

A MODEL FOR SYNTHESIZING EMERGING
CONSENSUS IN MULTILITERACIES

Led by the rapidly changing communications media in contemporary society, scholars and practitioners are working as fast as possible to re-conceptualize literacy in ways that reflect emerging

perspectives on the communicative competencies required for life in the 21st century. As Tyner (2004, 373) notes, each of the new literacies described above is "provisional, speculative and distinguished by the subtle ideological and professional differences of its various constituents." At the present time, it is unclear whether various terms for new literacies will continue to multiply as a result of increased attention from diverse interest groups, or whether they will slowly decline as consensus gradually emerges among scholars, educators, and policy makers. But an array of similar terms for distinctive concepts and ideas has real-world implications for educational practice, as Cervetti, Pardales and Damico (2001) pointed out in explaining how the distinctions between *critical reading* and *critical literacy* were confusing to practitioners and policy makers. There is a risk that misunderstandings of the multiple formulations of these new literacies could twist and warp how these concepts are understood by the public and by policy makers.

Fortunately, the emerging consensus among these different perspectives is obvious and considerable: all of the proponents reflect an appreciation that visual, electronic, and digital media are reshaping the knowledge, skills and competencies required for full participation in contemporary society, and all view these abilities as fundamentally tied to the intellectual and social practices known as literacy (New London Group, 1996). Multiliteracies proponents recognize that the acquisition and development of these competencies will require changes to the K–12 learning environment, including significant changes in teacher preservice and in-service education, design of learning experiences, access to tools, resources and materials, and techniques of classroom management (Buckingham, 2003; Film Education Working Group, 1999). And one can find scholars and practitioners in each of these new literacies who frame these concepts within a social, political, and economic context, a stance which recognizes literacy as a form of social power which enables fuller control over the circulation of messages and meanings in society (Giroux & Simon, 1989; Luke, 1997).

What tenets or principles do the practitioners and scholars advocating new literacies share? Adapting a typology developed by the Film Education Working Group (1999) which identified broad categories of inquiry focusing on authors, audiences, messages, language, values, and representation, Table 2.1 presents a synthesis of the key conceptual tenets or working principles that are emphasized in the work of media literacy, visual literacy, critical literacy, and information literacy scholars and practitioners from the United Kingdom, Canada, and the United States, whose work has been briefly described above. The key ideas from all four multiliteracies are collapsed into three broad categories: AA (authors and audiences), MM (messages and meanings), and RR (representations and reality). These three categories cut across print, visual, electronic and digital forms and genres and represent a simplified way to express the key dimensions of multiliteracies education in a framework that may be resonant and useful to K–12 classroom practitioners.

This model may also support research on staff development and the development of new methods and tools for assessing student learning. In my work with practitioners of information literacy, media literacy, visual literacy and critical literacy in elementary and secondary schools, I have found teachers' perceptions of their own goals and aims to be critically implicated in the shape of the curricular choices they make in the classroom (Hobbs, 1998b; 1994). Among teachers, there is a wide range of motivations and beliefs concerning multiliteracies that leads to a proliferation of instructional methods and approaches to classroom practice. As a result, it is difficult to recognize "best practices" in new literacies. By synthesizing the key ideas of multiliteracies into three broad categories, it may be easier to describe instructors' objectives and goals with more precision and identify the types of overt and covert instructional aims and priorities now extant among practitioners in K–12 settings. For example, use of this model may enable researchers to observe and document differences between teachers' stated aims and their instructional prac-

TABLE 2.1
A Model for Integrating the Conceptual Tenets of Multimedia Literacies

Themes	Tenets	Sources
AA	AUDIENCES	
AUTHORS AND AUDIENCES	AA1. Consumers of texts make selections and choices of texts to meet various needs and gratify different desires.	**I**
	AA2. Consumers of texts are defined, targeted, and conceptualized by producers of texts.	**M**, **C**, V, I
	AUTHORS	
	AA3. Texts are consciously created by authors and involve the coordination of different types of labor.	**M**, **C**, V, I
	AA4. Texts are often produced and distributed for power, gain and profit; economic and political factors shape the content and format of texts.	**M**, **C**, V, I
MM	MESSAGES	
MESSAGES AND MEANINGS	MM1. Texts use a variety of combinations of symbol systems (language, image, sound, music) and delivery systems (print, visual, electronic) and employ genres, codes, and conventions that can be identified and classified.	**M**, **C**, V, I
	MEANINGS	
	MM2. Individuals and social groups select, use, interpret, and respond to texts by using their unique life experiences, prior knowledge, and social positions.	**M**, **C**, V
	MM3. People's interpretation of texts influence aspects of decision-making, attitude formation, world view, and behavior.	**M**, **C**, V, I
RR		
REPRESENTATIONS AND REALITY	RR1. Texts reflect the ideologies and world views of their authors, and as a result, they selectively omit information and have distinctive points of view.	**M**, **C**, **V**, I
	RR2. Texts use techniques that affect people's perceptions of social reality.	M, C, **V**, **I**
	RR3. Texts can be examined in relationship to people's different understandings about social reality within various political, social, and economic contexts.	M, **C**, V

Support for this tenet found in Visual literacy (V), Media literacy (M), Information literacy (I), and Critical literacy (C). Bolded letters represent a major conceptual focus.

tices, a phenomenon described as ubiquitous by Hart and Suss (2002) in their cross-national case studies of teachers of adolescents. Future research might explore how these three broad conceptual tenets may help characterize the changes in students' growth that may result from learning opportunities with print, visual, electronic, and digital media in (and out of) the classroom.

What do the new literacies have in common? How are they different? These new literacies have as a central focus the development of students' engagement with texts and their concern for the meaning-making process, the constructed process of authorship, and questions about how texts represent social realities. They differ in their relative emphasis on the reader, the text, and the socio-historical and political contexts in which interpretations take place. For example, media literacy emphasizes an understanding of the processes involved in "constructing texts" and conceptualizes the audience as a construction designed within a particular economic framework. Information literacy emphasizes the process of "selection and choice" of texts as a component of the meaning-making process. By contrast, critical literacy emphasizes the constructed nature of "meaning," recognizing that meaning-making occurs as individuals interact with texts and make sense of other readers' interpretations in relation to their own social positions and lived experiences of the world. Visual literacy emphasizes the "aesthetic and rhetorical" functions of images, examining how people make connections between the visual texts they encounter and their own experience of reality, examining media texts for their plausibility and correspondence with other media representations.

The disjunctures among these new literacies reflect important differences in emphasis, pedagogy, and ideology. While media literacy, critical literacy and technology literacy emphasize the connection between reading and writing, this is less emphasized in visual literacy and information literacy, which are both primarily centered on the process of accessing, reading, and using texts. There is a disjuncture between multiliteracies regarding the appropriate message genres deserving attention, from those include or emphasize popular culture (media literacy, visual literacy, cultural literacy) and those which focus primarily on informational messages (information literacy). This disjuncture reflects well-entrenched arguments in English language arts education, as Robert Scholes (1998, 145) articulates when he proposes replacing the canon of literary texts with a canon of methods of critical analysis (including theory, history, production, and consumption) that enable a reader to read all kinds of texts in all kinds of media, including entertainment and popular culture, while opposite arguments are made by E. D. Hirsch (1987), who calls for a focus on core literacy and historical texts so that students can acquire the world knowledge they need to be culturally literate.

Another disjuncture concerns fundamental conceptualizations of teaching and learning, as some practitioners and scholars in all the new literacies described in this chapter emphasize participation and peer-interaction, inquiry-based learning, and constructivist learning principles, while others tend to view learning as a form of skills and content delivery from experts who guide instruction. The teacher-centered transmission model of instruction is common to most classrooms in the United States, and this model tends to emphasize textbooks as the *de facto* curriculum, whereas in participatory classrooms, a wider range of textual materials (including visual, multimedia and popular culture texts) is used (Wade & Moje, 2000). Because there is little consensus among K–12 practitioners about how visual texts, digital media, and technology tools are best infused into learning environments, even though this debate will continue to create divisions among scholars and practitioners, it is likely that a hybrid of teacher-centered and participatory approaches will be used in most K–12 settings by selectively structuring learning experiences to match students' needs (Tyner, 2004).

Examining Multimedia Literacy Practices in Schools

Much research in the past 20 years has examined the impact of television on the development of children's reading skills (Newman, 1991), but relatively little is known about the ways that visual media (including film and television programs) or mass media (like newspapers, magazines, radio

or audio resources) may be useful in the context of literacy instruction in primary or secondary education. By contrast, there is a substantial literature that examines how computers, online, and digital information technologies are used (or not used) in schools (Fouts, 2000; Norris, Sullivan, Poirot & Soloway, 2003). Historians of education should investigate the factors that led to shift towards conceptualizing educational technology as focused exclusively on computers, thus marginalizing film and video forms as technologies.

Although neither "fish nor fowl" in its status as non-print media, film and video use is ubiquitous among secondary educators, with at least 90% of teachers using video, film or documentaries, and 1 in 4 teachers using video once a week or more often (PBS, 2004). No one is startled to learn that English teachers use films like *To Kill a Mockingbird* and *Hamlet*, but a survey of English teachers in Minnesota found that a wide variety of genres and types of films are in use (from Hollywood classics to low-budget independent films). More than 200 unique titles were described among the 161 teachers who participated in the study (Larsson, 1991). Researchers know much less about why and how teachers use video in the classroom as a learning tool, but based on field observations, it appears that the content transmission model is dominant, along with a pervasive attitude that video is a form of entertainment and useful primarily for non-academic students, and only rarely used to support literacy learning or the development of critical thinking skills (Hobbs, 1994). Future research should explore how teachers' current uses of film and video in the classroom may be more meaningfully connected to students' literacy development in elementary- and secondary-education contexts, as well as in home-school and family literacy initiatives.

Another under-researched mass media form that is highly relevant to the work of literacy educators is newspapers and magazines. Newspaper use has been a common feature of instruction in many schools since the 1960s, with more than 950 U.S. daily newspapers sponsoring year-round programs providing newspapers to 106,000 schools at reduced rates. Used by 381,000 teachers as a text for learning in the classroom, newspaper-in-education programs reach almost 14.5 million students each year (NAA Foundation, 2004). A study of home literacy practices has shown that newspapers are a valuable resource for family communication, particularly with boys (O'Reilly & Alexander, 1998). One wonders why there is such a dearth of scholarly research on how newspapers (and their new online variants) are used in schools. The newspaper industry has produced some evidence that newspaper use in the classroom influences newspaper reading in later life. Researchers interviewed a large representative sample of 18 to 34 year olds, finding that 64% of those who had had a class where newspapers were part of the curriculum were regular readers of newspapers; by contrast, only 38% of those who didn't have exposure to newspapers in the classroom were regular newspaper readers (Saba, 2004). Further research should investigate how comparing and contrasting online newspapers and televison news media might support the development of the AA, MM and RR components of multimedia literacy.

Emerging Evidence from Research on Multimedia Literacies

How have the new literacies been shown to affect student learning? Most examinations of multimedia literacy look at very small numbers of students, usually a single classroom (Alvermann, Moon, & Hagood, 2001; Anderson, 1983). Studies have explored whether students learned the facts, vocabulary, and information provided as part of the instruction (Baron, 1985; Kelly, Gunter & Kelly, 1985) or whether a video broadcast about media literacy affects cognitive or critical analysis skills (Vooijs & Van der Voort, 1993). In addition, case studies from a number of countries have documented teachers' instructional strategies in implementing media literacy in classrooms (Hart & Suss, 2004; Hart, 1997), and a further body of research has examined

media literacy as an intervention tool for prevention and public health (see Kaiser Family Foundation, 2003b for review).

There is emerging evidence that media literacy instruction affects the development of reading comprehension and writing. In a quasi-experimental study, eleventh grade students who participated in a year-long English language arts/media literacy curriculum were compared to students from a demographically matched group who received no instruction in critically analyzing media messages. Critical message analysis skills were measured by examining students' ability to identify the purpose, point of view, and construction techniques used in print newsmagazines, TV news segments, print advertising, and radio news segments. Statistically significant differences were found in students' reading comprehension, writing skills, critical reading, critical listening, critical viewing, and knowledge of media production, media history, media economics, and understanding of media terminology (Hobbs & Frost, 2003).

Information literacy skills have been measured among students in middle school and high school. A large-scale study of New Zealand students showed students have only limited understanding of the information literacy skills involved in using library-related resources, specifically libraries, parts of a book, and reference sources (Brown, 2001). Instructional models intended to foster the acquisition of research, problem-solving, and metacognitive skills were found to be effective with a class of eighth-grade students who were asked to research and write about events surrounding the African-American Civil Rights Movement (Wolf, 2003). Students were provided support in the activities required to solve information-based problems through six processes: task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation. Such models, maps, and organizers should continue to be tested among many groups of learners to determine the full range of their value for giving the student greater confidence and understanding of the complexities involved in information problem solving.

While numerous teacher staff development programs are available to preservice and in-service teachers to learn to integrate multiliteracies into instruction, few have been evaluated. Morin and Begoray (2002) investigated a teacher summer institute that brought English teachers from Manitoba Canada together to explore music, visual arts, media, and drama, finding that even after one year, teachers believed they increased their use of technology, art, music, drama, and media in their classrooms. Begoray (2002) videotaped and interviewed teachers in a Canadian city who were learning to use visual literacy concepts over a period of two years. Teachers implemented lessons involving the use of cameras and photography, made active use of videotaping to document students' learning progress, and involved students in mental visualization as a means to promote reading comprehension. Further research should continue to explore why and how teachers decide to implement new literacies instruction, the role of staff development in supporting teachers' growth and change, and outcomes including student motivation, literal and inferential comprehension, listening skills, and collaboration.

CONCLUSION

There is no shortage of theories about the promise of media, technology, and popular culture in education. However, as Bazalgette, Bevort and Savino (1992, 3) point out, "the realities of teaching and learning are harder to define and share." In reviewing accounts of practice of media education in more than a dozen countries, they emphasize that what is institutionally appropriate in one setting may not be so in another. The conceptual model which synthesizes the tenets of the four new literacies described in this paper represents an effort to synthesize some key themes in a rich and varied literature now emerging from many academic disciplines and fields. Such syn-

thesis may support the development of new research which examines teachers' and students' engagement with popular culture and mass media texts in the context of learning in English language arts. The current range and diversity of philosophies and approaches to new literacies, like Solomon's beard, may be a prime source of strength for the future of the field. But the diverse perspectives and areas of emphasis may also lead to academic sniping, divisiveness, and sheer exhaustion. Models that support cross-disciplinary dialogue and continued border crossing, now routinely appreciated as an essential component of postmodern scholarship, should move forward the development of this emerging field of inquiry.

The growing band of literacy educators now interested in popular culture, mass media, and online and digital technologies must be responsive to what Masterman (1985, 24) has identified as a central objective for media education: the ability to apply knowledge and skills learned in the classroom to the world of everyday life. In reflecting on the appropriate learning outcomes for teaching information literacy, media literacy, visual literacy, and critical literacy, teachers must design learning experiences that help students, as quickly as possible, to stand on their own two feet and apply critical thinking skills to the media and technology experiences they have at home. Future research must more systematically begin to explore the student learning outcomes that result from instruction that emphasizes information literacy, visual literacy, media literacy, and critical literacy and to find better ways to help teachers assess when and how such learning occurs.

In contrast to the idealistic visions of education scholars and academics, the institutional nature of schooling demands that teachers adapt and modify their work to fit with the normative values of school culture. As a result, teachers often encounter situations and experiences in using media, technology, and popular culture in the classroom that are not described in the scholarly academic literature, whose voices "demand that the repertoire of acceptable cultural objects be expanded" (Aronowitz & Giroux, 1993, 182). The dynamism and complexity of contemporary life in a media-saturated and information-rich culture remind us that the use of media, technology, and popular culture in the classroom is not for the faint of heart. Such work vitally depends on the initiative and perseverance of individual teachers, who are inspired and motivated by a wide range of different understandings about the role of the mass media, technology, and popular culture in society. These individuals need to have courage, imagination, and creativity to enable students to develop the competencies they need to be citizens of an information age.

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