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Evaluating Media Literacy Education: Concepts, Theories and Future Directions

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Abstract

This article synthesizes a large subset of the academic literature on media literacy education. It first argues that media literacy is mostly defined in terms of the knowledge and skills individuals need to analyze, evaluate, or produce media messages. These knowledge and skills mainly relate to four key facets of the mass media phenomenon, i.e. media industries, media messages, media audiences, and media effects. Subsequently, it evaluates what is empirically known about the effectiveness of media literacy practices. Suggestions are made for future research.

Keywords: Media Literacy Education, Mass Media, Effectiveness Research, Instructional Methods, Information Processing, Social Learning

According to Kubey (2003), “a worldwide movement in media literacy education has been growing for roughly twenty-five years now and has been marked by a number of recent developments” (352). Media educators from around the world are meeting and sharing curricula, research, and strategies with increasing frequency. Also, media literacy is being mandated and taught more broadly in many countries.

For several historical, political and sociological reasons, U.S. media literacy education traditionally lags behind the rest of the English-speaking world (Kubey 1998, 2003). Nonetheless, the United States seems to regain lost ground (Kubey 2003; Considine 2002; Guo-Ming 2007; Hobbs 2004, 1998). The movement generated three national organizations that advance media education training, networking, and information: the Center for Media Literacy (CML) (Thoman and Jolls 2004), the National Association for Media Literacy Education (NAMLE) (Rogow 2004), and the Action Coalition for Media Education (ACME). Most of the states have media education elements in the subject areas of consumer and health skills, in English and language and communication arts frameworks, and (to a lesser extent) in social studies, history, and civics. Also, media literacy education is implemented in after-school programs, summer camps, religious edu-

cation programs (Blythe 2002; Stout 2002), library and prevention programs, community-based organizations (Pepler and Kafai 2007), or at home with parental guidance (Nathanson 2004). Outside the United States, scholars describe media literacy practices in formal or informal education in, among others, Great-Britain (McDougall 2006, 2007; Turnbull 2006; Archer 2006; Buckingham 1998), Australia (Turnbull 2006; Quin 2003), Canada (Dyson 1998), Hungaria (Imre 2006), Italy (Caronia 2009), Malta (Mifsud 1994), Norway (Erstad and Gilje 2008), Slovenia (Volcic and Erjavec 2006a, 2006b), Signapore (Phang and Schaefer 2009), China, India, and Vietnam (Lim and Nekmat 2008).

At first sight, the increased scholarly attention for media literacy education may seem unproblematic. However, the academic literature reveals that media literacy education is a multifaceted (and contested) phenomenon. As Christ and Potter (1998) explain, a great variety of perspectives exists. Brown (1998, 44) states that “media literacy means many things to many people. Traditionally, it has involved the ability to analyze and appreciate respected works of literature and, by extension, to communicate effectively by writing well. In the past half-century it has come to include the ability to analyze competently and to utilize skillfully print journalism, cinematic productions, radio and television

programming, and even computer-mediated information and exchange (including real-time interactive exploration through the global internet).” While media education is mainly applied to K-12 education, scholars have also discussed it in the context of higher education (Rowe 2004; Christ 2004; Christ and Potter 1998; Maras 2005; Mihailidis 2006; Schamber 1991; Williamson 1999; Considine 2002; Berkeley 2009; Brabazon 2009; Salawu 2009; Dickson and Brandon 2000; Okigbo and Pratt 1997; McAdams and Bucy 1994; Atwood 1988; Vocate 1997), employment in the media industries (Ashton 2009; Buckingham 1995), and adult literacy (Dennis 2004; Perry 2006). Moreover, the term media literacy itself is a point of discussion. For example, several scholars have coined the concept of digital or multiple media literacies, in plural, when examining how people today relate to multiple text formats (Plester and Wood 2009; Livingstone 2004; Olson and Pollard 2004; Tyner 2003; Marsh 2006; Erstad and Gilje 2008; Meyrowitz 1998; Kalmus et al. 2009). Others prefer an emphasis on visual literacy (Duffelmeyer 2004; Chauvin 2003; Messaris 1998; Zettl 1998; Natharius 2004).

Evaluating the outcomes of media literacy education necessarily begins with describing what it aims for. On the conceptual level, some agreement exists. In 1992, the National Leadership Conference on Media Literacy defined media literacy as “the ability to access, analyze, evaluate, and communicate messages in a variety of forms” (Aufderheide 1993, xx). This umbrella definition is widely quoted throughout the literature. However, it lacks specificity, that is, it cannot provide much detail to people who want to design educational strategies. Luckily, several authors have more thoroughly elaborated their key ideas in seminal books. For example, from a psychological information-processing point of view, Potter (2004, 58-59) defines media literacy as “the set of perspectives from which we expose ourselves to the media and interpret the meaning of the messages we encounter.” For Potter, the key to media literacy is to build good knowledge structures. In particular, individuals need to have a good deal of information about media industries, media messages, media effects, the real world and the self. Also, to sort through this information and organize it, people need skills of analysis, evaluation, grouping, induction, deduction, synthesis, and abstracting. The more developed our knowledge structures, the more context we will have to help us understand what we see. The more people actively use the information in those knowledge structures during exposure to media messages, the more they will be able to

use media exposures to meet their own goals and the more they will be able to avoid risks for negative effects. By contrast, from a cultural studies perspective, Buckingham (2003) questions if the individual is key to understand how best to teach media literacy. More specifically, he argues that we cannot teach a limited set of cognitive abilities which individuals somehow come to possess. Rather, he proposes a number of key media concepts – production, language, representation, and audience – which provide a theoretical framework which can be applied to the whole range of contemporary mass media. In his view, teachers should start from pupils’ existing understanding of the media and use these concepts to enable them to think in a more conscious and deliberate way. “The aim of media [literacy] education, then, is [...] [to] enable them to reflect systematically on the processes of reading and writing, to understand and to analyze their own experience as readers and writers” (Buckingham 2003, 41). In this view, dialogue between teacher and student is central to the learning process: teachers should be working in so-called “zones of proximal development”, “scaffolding” students until they can understand without having to be supported (see Vygotsky 1962, 1978). However, Buckingham adds, this dynamic model might still be insufficiently social, for not taking into account the social functions and uses of knowledge and language in classroom contexts. Also, it perpetuates the separation between cognitive and affective processes, and thus neglects the fundamental significance of students’ emotional involvement in the media.

These conceptual and theoretical tensions have been discussed more thoroughly elsewhere (e.g., Hobbs 2005). While it is difficult to overestimate the importance of these contributions to the field, numerous other scholars have published their research in other outlets, often with different emphasizes. Therefore, in trying to give a more comprehensive overview of current debates, this article synthesizes a larger subset of the academic literature. First, an electronic search was conducted on the Communication and Mass Media Complete database (EBSCO)^{ab}. Because of the broad variety of perspectives, and because of the interchangeable and often confusing use of a variety of terms (e.g., ‘media literacy education’, ‘media literacy intervention’, ‘media literacy program’, ‘media education’, ‘media education program’), it was decided to include all English scholarly (peer reviewed) publications with ‘media literacy’ and ‘media education’ in their title or (author-supplied) abstract. This search resulted in 243 sources.

Subsequently, based on a close reading of these articles, the selection was further narrowed down to 165 scholarly manuscripts. Teaching guidelines and brief commentaries were excluded from the final corpus of this narrative review. Only relevant conceptual and empirical pieces on media literacy education were included.

This article first argues that, not unlike Potter (2004), most scholars define media literacy in terms of the knowledge and skills individuals need to analyze, evaluate, or produce media messages. These knowledge and skills mainly relate to four key facets of the mass media phenomenon, i.e. media industries, media messages, media audiences, and media effects. However, for most media literacy scholars, defining media literacy is only part of the problem. That is, they also focus on how educators can translate mass media knowledge and skills into effective media educational strategies. Obviously, idiosyncratic differences in approach exist. Strikingly, media literacy scholars often frame their findings in relation to contrasting applied research topics, such as active citizenship, public health, and (to a lesser extent) aesthetics. This, in turn, is likely to influence the knowledge and skills, instructional methods, and learning outcomes they reflect upon. Second, this literature review evaluates what is empirically known about the effects these media literacy practices have on participants' everyday mass media use. Currently, an unproductive citation gap exists between scholars who try to explain media learning outcomes by (over)emphasizing the importance of either individual information processing or broader social mechanisms. Therefore, I try to integrate the fragmented empirical evidence of what works and what does not work in media literacy education, and propose a future research agenda to better explain why.

Critical Thinking in a Mass-Mediated Society

Mass media are ubiquitous in our lives. As Rosenbaum, Beentjes and König (2008, 317) explain, media literacy education “plays a role in the dispersion of scientific knowledge about the media across society. [...] Media literacy research reveals the societal relevance of our efforts as communication researchers to come to grips with the myriad aspects of media” (see also Perry 2006). In other words, media literacy educators take foundational ideas of mass media research and translate them into educational practices that are accessible for children and adolescents.

Media Knowledge and Skills

In the literature, knowledge and skills on four mass media facets, i.e. media industries, media messages, media audiences, and media effects, are deemed to be essential aspects of media literacy. For example, for Lim and Nekmat (2008), the media-literate individual is someone who has an appreciation for those who control media content, and how the political economy of the media industry is reflective of and influenced by geopolitical trends, a realization of why some content types are excluded from media messages, while others are intensively amplified, a sensitivity to one's own conscious and subconscious responses to mass media, and an awareness of the effects these media can have on individuals. Likewise, Duran, Yousman, Walsh and Longhore (2008) argue for a holistic approach to media literacy, “one that encompasses both textual and contextual concerns within a critical framework. [...] From this perspective, in addition to being able to skillfully deconstruct media texts, the person who is truly media literate is also knowledgeable of the political economy of the media, the consequences of media consumption, and the activist and alternative media movements that seek to challenge mainstream media norms” (51).

Media Industries. Several scholars argue that children and adolescents should be able to grasp the nature of commercial mass media and the purpose of commercials. Mostly, media messages are produced to make a profit; they will turn out only messages that will attract considerable audiences. Thus, profit motives, ownership patterns and market forces shape the output of media industries. Media literacy programs therefore may concentrate on the selectivity of the producers and the notion of producers' motivations, purposes, and viewpoints (Rosenbaum, Beentjes, and König 2008).

For example, Vande Berg, Wenner and Gronbeck (2004) argue that media literacy education changes viewers' understanding of the television industry as they learn “to recognize the various ways in which the industry packages, markets, and positions audience members as the commodities being sold” (222). Primack, Sidani, Carroll, and Fine (2009) describe media organizations' financial and political motives and the way they target specific audience markets as an essential core concept of media literacy. Gotcher and Duffy (1997) explain how video news releases can be studied to alienate students from a conception of news as transparent reportages of world events to the conception of news as shaped by exigencies of time, space, power,

and money. Similarly, a commercial media kit can be a powerful teaching tool to reveal how advertising departments of consumer magazines sell potential advertisers on the magazine's capabilities to reach desirable audiences. According to Lewis and Jhally (1998, 112), "an analysis of political economy should not be restricted to a narrow set of economic relations. The media are determined by a set of social and economic conditions that involve the key dividing lines of our culture, whether they be race, class, gender, sexuality, age, or mobility."

Media Messages. Often, media literacy researchers reason that awareness of the constructed nature of media messages is essential to a valid evaluation of media content. "Media do not present reality like transparent windows because media messages are created, shaped, and positioned through a construction process. This construction involves many decisions about what to include or exclude and how to represent reality" (Kellner and Share 2005, 374).

Within this context, Meyrowitz (1998) distinguishes between media content literacy and media grammar literacy. According to him, "the most common conception of media is that they are conduits that hold and send messages. This conception has fostered many ways of discussing and studying the content of media" (Meyrowitz 1998, 97). By contrast, media grammar literacy involves a focus on the particular characteristics of each mass medium – e.g., print media, radio, television, or the Internet – through which the messages examined are conveyed. Thus, several authors describe how "visual syntax" (Messaris 1998; Heiligmann and Shields 2005), "codes and conventions" (Rosenbaum, Beentjes, and Konig 2008), "aesthetic aspects" (Zettl 1998), or "media grammar" (Meyrowitz 1998; Gumpert and Cathcart 1985) interact with content elements. For example, Rosenbaum, Beentjes and Konig (2008) distinguish between on the one hand production procedures, which include, among others, sound, camera point of view, lighting techniques, framing, special effects, the use of props, and the constraints of time and technology, and on the other hand non-technical codes such as genre, narrative structures, and the distinction between fiction and fact. Zettl (1998) illustrates how light and shadows, color, two- and three-dimensional space, time and motion, and sound are structured in production, and how the manipulative power of aesthetic and associative contexts can influence viewer perception. Burch (2002) adds that aesthetic choices artists make should be examined within a cultural context. In particular,

she suggests that production elements of Indian religious soap operas are aesthetically different from the so-called professional standards most widely followed within the United States. For Meyrowitz (1998), media grammar literacy can go far beyond basic variables like selective use of close-ups, medium shots, and long shots, camera angles and wide-angle lenses to entail awareness of how manipulation of production variables may be subtly reflecting and influencing the public's perception of people, places, and events. Moreover, it should involve "awareness of the impact of media variables that are not as easily 'seen', such as the impact of sound-track elements, which include different sound perspectives (the aural equivalents of different shot framings), different microphone pickup patterns, and sound equalization filters" (Meyrowitz 1998, 101).

In sum, each medium has its own grammar that allows readers to create meaning from the textual elements. Moreover, these languages have the capacity to "naturalize" media content. Therefore, the aim of education on this topic is "to encourage viewers to examine the extent to which they themselves have accepted the implications of that syntax. Additionally, when those implications can meaningfully be examined against known facts, as is the case with many examples of misleading or fraudulent health-products advertising, a [media] literate viewer should make the effort to do so" (Messaris 1998, 77; see also Gaines 2008).

Media Audiences. Media literacy programs often feature an awareness of how audiences interpret media content. Different people can experience the same media message differently. As Kellner and Share (2005) explain Stuart Hall once argued that a "distinction must be made between the encoding of media texts by producers and the decoding by consumers" (375).

Following from work at the Birmingham Centre for Contemporary Cultural Studies in the U.K., the notion of an active, socially constructed audience emerged. Living in a particular social formation (a mix of class, gender, age, race, and so forth), these audiences are neither powerless nor omnipotent when it comes to reading media messages. This opens up the opportunity for media literacy education to empower audiences in the process of negotiating meanings (Kellner and Share 2005; see also Quin 2003; Sun and Scharer 2004). Not unlikely, although from a psychological perspective, several scholars explore the importance of differences in individual information processing. Most notably, Potter (2004) argues for a theory of media liter-

acy that deals with the information-processing tasks of filtering, meaning matching, and meaning construction. For Brown (1998), media literacy education involves cognitive processes such as perception, reflection, reasoning, and evaluation. Austin and Johnson (1997a) say “children are not passive receptors of media messages. On the contrary, they actively process messages to make decisions about what is real, what is right or wrong, what is important, and what is rewarding” (17).

To some extent, Livingstone (2008) questions the applicability of the notion of media audiences in a new media context. “Those who use Internet, mobile phones, digital games, and even those who engage with traditional media (radio, print, and television) via the Internet, are not easily labeled an audience” (52). Nonetheless, several authors (including Livingstone) trace many parallels between old and new (or interactive) media. Most importantly, these scholars emphasize that digital literacy is more than a matter of training functional skills, of teaching about spreadsheets, databases, and file management (e.g., Silverstone 2004; Livingstone 2004; Buckingham 2007; Tyner 2003; Erstad, Gilje, and de Lange 2007; Livingstone 2008; Sourbati 2009). For instance, Buckingham (2007) indicates that most digital audiences use the Internet for pursuing hobbies, for chatting and exchanging instant messages with friends, for playing games and downloading music and movies. Therefore, it is argued, media literacy education should start from these audience experiences, and aim to encourage more reflective ways of surfing the Web.

In brief, audiences are not passive recipients; instead they bring their own social positions, age, gender and race to bear on their interpretations of all kinds of media messages. Also, interpretations depend on people’s individual information processing.

Media Effects. Several scholars hold that people should be aware of mass media’s effects on individuals (e.g., Pinkleton et al. 2008; Duran et al. 2008; Byrne 2009) and society (e.g., Meyrowitz 1998). For example, Byrne (2009) and Byrne, Linz, and Potter (2009) both analyze a media literacy intervention on the negative effects of viewing media violence. These interventions urged children to realize that there is a difference between violence in the media and violence in the real world. Also, they emphasized the negative effects of viewing violent material and focused on ways to avoid these effects and evaluating characters that use violence (see also, Nathanson 2004).

Some controversy concerning media effects emerges throughout the media literacy literature. For example, Buckingham (2007) claims that effective practices in media education are “not a matter of protecting children from the allegedly harmful influences of the media [...]. On the contrary, [they] seek to bring about more active and critical participation in the media culture that surrounds them” (22). Elsewhere, Buckingham (1998) criticizes defensive media literacy programs on pedagogical grounds for not taking into account young people’s knowledge of and emotional engagement with mass media (see also Gray 2005; Fisherkeller 1999; Hobbs 1998; Bragg 2002; Zaslow and Butler 2002). Not unlikely, Hobbs (2005) says that as “media literacy practitioners and scholars enthusiastically marginalized the media effects paradigm, media literacy has been positioned within a cultural/critical studies paradigm” (871). Yet, if evaluated against the published literature, these arguments seem somewhat problematic. First, a large number of recent social science articles explicitly approach media literacy education as a solution to the problem of negative media effects (e.g., Austin and Johnson 1997a, 1997b; Austin et al. 2002; Austin, Pinkleton, and Funabiki 2007; Austin et al. 2005; Byrne 2009; Byrne, Linz, and Potter 2009; Scharrer 2006; Pinkleton et al. 2008; Pinkleton et al. 2007). Second, these scholars often go to great lengths to measure what pupils already know about media and what they learn during media literacy practices, both cognitively and affectively. Third, of course, none of them opposes active and critical participation in media culture. And fourth, critical/cultural media literacy scholars often acknowledge themselves – sometimes implicitly – that mass media may have a negative impact on individuals and society (e.g., Kellner and Share 2005; Dyson 1998; Lederman, Lederman, and Kully 2004; Alvermann 2004; Sun and Scharrer 2004).

In sum, far from being marginalized, “defensive” media literacy goals still figure prominently on the research agenda. According to Kubey (2003), this approach is also the one most likely to be funded and meet with broader approval, particularly to parents, to administrators, and to government officials. He says, “it is much harder to make a winning case that media education will advance students’ aesthetic appreciation of television and film, or media and the arts generally. [...] Add to this picture a cultural and educational atmosphere wherein the very idea of teaching how to watch television seems inane to many who hear only that phrase, and one can see why U.S. media education is more pro-

tectionist in style and content than any other English-speaking country” (364). However, although theoretical and methodological differences obviously exist, the categorical distinction made between media effect and cultural/critical research tends to obscure the many similarities. As I will argue below, both perspectives may offer valuable complementary insights into the context and effects of a wide range of media literacy practices.

The Mediating Role of Media Literacy

Media literacy is seldom taught as a goal in itself. That is, media educators mostly try to increase children’s and adolescents’ mass media knowledge and skills because this, in turn, will maximize positive media effects and minimize negative ones. Of course, many types of media effects exist: individual or social; cognitive, affective, attitudinal, physiological, or behavioral. Typically, scholars start from much broader social issues, such as active citizenship, public health, or (to a lesser extent) aesthetics. Subsequently, they narrow down their focus, and reflect upon the mediating role media literacy plays within these applied research contexts.

Active Citizenship. In an age where mass media are seen as a key social institution (Silverblatt 2004) many scholars view access and understanding of contemporary media as a vital aspect of citizenship in general. According to Guo-Ming (2007, 91) “teaching students to be good citizens in a democratic society is an important goal most media educators aim to achieve in the United States. Efforts are made not only in the school system, but also extend to groups in the community, to foster students’ critical thinking ability.”

For example, Lewis and Jhally (1998) argue that “[m]edia literacy should be about helping people to become sophisticated citizens. [...] Just as political education allows citizens to think more critically and constructively about politics, media literacy can provide people with the wherewithal for thinking about the limits and possibilities of media systems” (109-113). Likewise, Livingstone (2004, 11) emphasizes the importance for any definition of media literacy to position people “not only as selective, receptive, and accepting but also as participating, critical; in short, not merely as consumers but also as citizens.” Silverstone (2004, 48) argues that media literacy is “a prerequisite for full participation in late modern society, involving as it does the critical skills of analysis and appreciation of the social dynamics and social centrality of media as framing the cultures of the everyday.”

Kubey (2004) discusses the importance of media education to the teaching of civics and social studies and examines approaches to civics via media literacy. According to him, the mass media are “the precise means by which citizens receive nearly all of their information about political processes and elections. One can scarcely even think today about civics, elections, government, the constitution, or the Bill of Rights without also thinking about the media through which we learn of one issue, conflict, or campaign after another” (70).

The vision of media literacy education, then, is to enable students to fully comprehend and act on the content, form, purpose, and effects of media messages. Media literate individuals, it is argued, take an active rather than a passive role in acquiring new knowledge and skills. In this way, they become fully able to participate as critical consumers and citizens in a media-saturated society (Thoman and Jolls 2004; Bergsma 2004; Galician 2004a, 2004b; Kubey 2004; Claussen 2004; Jackson and Jamieson 2004; Tyner 2003; Fisherkeller 1999; Buckingham 2007). Within this context, media literacy is also often linked with public access community radio and television (Higgins 1999; King and Mele 1999; Wagg 2004; Pinsler 2008), citizen journalism (Lim and Nekmat 2008), and more broadly, the public sphere (Kovacs 2003; Papacharissi 2002; Fisherkeller 1999; Means Coleman 2003; Vande Berg, Wenner, and Gronbeck 2004; Nassanga 2008; Phang and Schaefer 2009). In particular, several scholars argue that learning to create media programs demystifies the media as individuals become aware of media structures and influences. “These production and interpretation skills would not only allow persons to become more discriminating viewers, but allow them also to actively speak out in the media – contributing to the so called electronic marketplace of ideas” (Higgins 1999, 625). As Livingstone (2004, 8) points out, “in key respects, content creation is easier than ever. [...] Many [pupils] are already content producers, developing complex literacy skills through the use of e-mail, chat, and games. The social consequences of these activities – participation, social capital, civic culture – serve to network (or exclude) today’s younger generations. At present, cementing content creation within media literacy programs requires further research to establish the relation between reception and production in the new media environment, together with further clarification of the benefits to learning cultural expression, and civic participation.”

More to the point, several scholars explore if and how media literacy education can counterbalance the effects of race, class, and gender stereotypes in mass media messages. According to Ramasubramanian and Oliver (2007) and Ramasubramanian (2007), media content analyses show that racial minorities, if at all represented, are portrayed in stereotypical ways in a narrow range of peripheral roles. However, research also shows that not all viewers are as likely to exhibit prejudicial responses to stereotypical media portrayals. Therefore, they examine the role of media literacy training in reducing the effects of biased news stories about African Americans and Asian Indians. They say, “when media consumers become more conscious of the role of media in actively shaping social reality, they will be less likely to be influenced by the biased, one-dimensional portrayals of racial groups in the media” (Ramasubramanian 2007, 252). Similarly, Vargas and DePyssler (1998, 407) argue that “media misrepresentations of immigrants, and particularly Mexicans, play a significant role in shaping public attitudes and opinion. [...] This influence calls for a commensurate educational response, one that alerts students to the power of the media, enables them to apply critical skills when examining media texts, and helps them problematize their media experiences.” Finally, Legrande and Vargas (2001, 77) hold that “media literacy is largely about empowering underrepresented populations by giving them a language to articulate their critiques of dominant media messages and a means of producing texts that challenge the stereotypical representations of themselves disseminated by the mass media” (see also Yosso 2002; Kavoori and Matthews 2004; Holtzman 2004; Means Coleman 2003; Rockler 2002).

Reichert, LaTour, Lambiase, and Adkins (2007) test the efficacy of media literacy education in the context of the objectification of women in advertising. According to these authors, there is evidence that sexually attractive images of women have unintentional effects, like triggering of gender stereotyping and gender role expectations, and sex-roles socialization. Therefore, they explore how media literacy pertaining to the sexual objectification of women influences cognitive, affective, and behavioral responses to ads containing objectifying images. Similarly, Steinke et al. (2007) argue that consumers of mass media can be taught to “critically evaluate media content and that this critical evaluation can change the ways in which the content is processed and internalized” (42). They assess the efficacy of media literacy training designed to teach critical

thinking about images of women in changing middle school students’ perceptions of women scientists. From a different perspective, Dezuanni (2006) analyzes activities “aimed to challenge aspects of the relationship between teenage boys and video games relating to hegemonic gender relations and practices” (157). Finally, Johnson and Young (2002, 479) examine discourse in television commercials made for and marketed to children. They argue that “as we teach children to be media literate, that literacy training should include tuning their ears to the images of gender conveyed through language” (see also Rockler 2002; Charles 2007).

Public Health. According to Rosenbaum, Beentjes and Konig (2008, 340) “the application of media literacy has shifted over the past few years, with a greater emphasis on health-related issues” (see again Kubey 2003). Here, it is often thought to be a promising alternative to the censorship of regulating unhealthy programming or limiting media use (Bergsma 2008; Timmerman et al. 2008; Byrne 2009). As this approach often comes down to activating cognitive defenses against commercial persuasive content, Eagle (2007) coins the term commercial media literacy. When applied to health issues – e.g. violence, alcohol and tobacco use, or self-image – media literacy education aims to help young people to see that the media are in the business of selling them products and behaviors that are not always good for them.

Much has been written on the effects of aggressive television on children and adolescents. In particular, empirical research suggests that children who are exposed to a heavy diet of aggressive television are more likely to engage in antisocial behavior and aggression, both physical and verbal. Not surprisingly, several studies explore if and how media literacy programs can mitigate these negative effects or reduce the amount of violent TV viewed (Cantor and Wilson 2003; Scharer 2005, 2006; Byrne 2009; Byrne, Linz, and Potter 2009). These curricula include analytical viewing exercises, aspects of media production, lessons and critical discussions dealing with media violence, media effects, and the role that media play in young people’s lives. Often, participants are encouraged not to identify with TV heroes who solve problems with force and violence or to develop skeptical attitudes toward media violence.

Numerous studies have also examined the link between media literacy and adolescents’ tobacco and alcohol use. According to Gonzales, Glik, Davoudi, and Ang (2004) children and adolescents are overexposed

to media advertising and media depiction with substance use-related content. Research suggests that individuals build resistance to specific tobacco and alcohol advertising as they become aware of marketers' strategies and tactics, such as using image-based and affect-laden appeals. For example, Primack, Sidani, Carroll and Fine (2009) explore the association between media literacy and smoking. They find that media literacy is independently associated with lower odds of smoking in college populations. Thus, the purpose of media literacy education is to equip young people to critically analyze media messages. Typically, research empirically evaluates changes in tobacco- or alcohol-related knowledge, attitudinal and/or behavioral outcome variables among students exposed to the curriculum (Gonzales et al. 2004; Austin and Johnson 1997a, 1997b; Austin et al. 2002; Austin, Pinkleton, and Funabiki 2007; Austin et al. 2005; Pinkleton et al. 2007; Banerjee and Greene 2006; Banerjee and Greene 2007).

Finally, research indicates that exposure to media is associated with self-image. Therefore, some authors evaluate the potential of school-based media literacy programs that stimulate young women to think more critically about the thin ideal presented in media messages and to challenge negative body-related cognitions that arise in response to the media (Merskin 2004). Not unlikely, Keller and Brown (2002, 69) suggest that gaining critical analysis and viewing skills, and participating in media production may lead "not only to a greater understanding of the stories (including sexual scripts) that media tell and the sources they use, but also may result in personal changes, such as improvements in self-esteem (e.g., the ability to say "no" to sex), taking responsibility for one's life (e.g., practicing safe sex), and sharing experiences with others (e.g., negotiating condom use)." Likewise, Pinkleton et al. (2008) evaluate the efficacy of a peer-led, media literacy program concerning sexual abstinence. They contend that media literacy has great promise for sex education by providing adolescents with the cognitive framework necessary to understand and resist the influences of media on their decision making concerning sex (for a contrasting view, see Bragg 2006a).

In sum, health related media literacy programs mostly try to raise awareness by involving children and adolescents in a critical examination of media messages that promote risky behaviors. It is hoped, in turn, that media literacy will influence participants' future attitudes and behavior (Bergsma 2008). From a different perspective, some authors also explore the par-

ticipatory potential of the media literacy framework in a public health context. For example, Rich (2004) elaborates on the application of Video Intervention/Prevention Assessment (VIA) in a health literacy context (see also Bergsma 2004). In particular, he explains how VIA tries to "build on the innate comfort that children and adolescents have with audiovisual media to give the control of an important information stream about their own health and well-being." In this project, clinicians provide video camcorders to young people who have chronic medical conditions and ask them to teach the clinicians about their experiences and needs by making visual illness narratives. According to Rich, "VIA's patient-centered view of the illness experience – objective, experiential, and reflective – allows clinicians to observe "the real problem" and helps them make decisions that are sensitive to and effective for patients in the context of their lives" (186).

Aesthetics. Historically, media literacy education has often been synonym for learning to appreciate the aesthetic qualities of mass media, especially the cinematic arts. Kubey (2003, 360-361) explains how in Europe the developments in film theory in the early 1950s and the seriousness with which film was treated as art in the journal *Cahiers du Cinema* partly legitimated the development of media studies. Media literacy education received an enormous boost as many European teachers were prepared to take film seriously in a classroom context. Today, for J.A. Brown (1998, 47), an important goal of media literacy education remains "to develop selective viewers who seek out and appreciate distinctive high-quality of form, format, and content in mass media" (see also, Chen 2007; Edgerton and Marsden 2002; Considine 2002; Zettl 1998; Kellner and Share 2005). By contrast, others criticize this approach for its underlying assumptions about "cultural value" (Bragg 2006b; Buckingham 1998)

Nonetheless, apart from these few exceptions, media aesthetics seem to have disappeared from the research agenda of most media literacy scholars. Some, however, point to the increased opportunities for media arts production in school, after-school or out-of-school contexts (Kellner and Share 2005; Guo-Ming 2007; Hobbs 2004; Considine 2002). Through media production – writing scripts, design storyboards, create videos, and so forth – young people are provided with channels of creativity and self-expression which, in turn, is said to increase self-esteem (for a critique, see Buckingham and Harvey 2001).

Effectiveness in Media Literacy Education

It has become widely accepted that evaluating and explaining effectiveness is one of the most profound challenges for contemporary research on media literacy education (Hobbs and Frost 2003; Brown 1998; Kubey 2003; Means Coleman and Fisherkeller 2003). During the last decade, a large number of studies have empirically evaluated the ability of various media literacy programs to teach young people to analyze, evaluate, and communicate messages in a variety of forms. Here again, scholars tackling this issue come from a variety of research backgrounds. Unsurprisingly, they bring along different theoretical and methodological preferences (see also Hobbs 2005).

For example, like Buckingham (2003), many scholars work within a cultural/critical studies framework. Often, they pair their interest for young people's popular culture with a sociocultural conception of learning as a collective, participatory process. Therefore, they emphasize interaction and social context. By contrast, Potter (2004) draws heavily from the social science literature, particularly psychology, to offer a general theory of media literacy. In his information-processing view, individual cognitions are prime. Similarly, most public health researchers evaluate media literacy practices by linking psychological constructs with media learning outcomes. Methodologically, cultural/critical scholars tend to describe and theorize media teaching and media learning within complex real-life contexts, while social science researchers typically test the effects of media literacy interventions within controlled research environments. While these approaches are often treated as mutually exclusive views, it may be more productive to see them as complementary perspectives on one single multifaceted research phenomenon.

Describing Context

As explained before, cultural studies often allude to the negotiated nature of media interpretation, and the complex relationships between media audiences and media content (see also Christ 2002). This is why cultural scholars emphasize the need to understand how pupils learn about mass media. This complex process, it is argued, is best captured through detailed descriptions of media teaching and media learning, within the specific contexts where educators and pupils interact. Mostly through small-scale research projects, these authors try to enlighten the com-

plex dynamics of media literacy practice. Also, they elaborate on students' out-of-school media experiences and the perspectives they bring with them to the school.

Media Teaching. According to Hart and Benson (1996) there is an enormous lack of descriptive work in classrooms. Because rather little is known about teachers' actual classroom practices, these authors argue for a naturalistic study of everyday settings employing qualitative methods that offer insight into the detail of media educational activities (Hart and Benson 1996; Hart and Benson 1993). For example, using classroom observation and in-depth interviews with teachers, Hart (2001) investigates the forms and purposes of media teaching in secondary schools in the U.K. In this way, Hart is able to describe different conceptions of media education, perceived problems and rewards of teaching and learning about the media, teachers' attitudes to media education, teachers' aims for their students, teachers' prior media experience, key concepts with which teachers feel most confident, and favored resources and the ways in which these are used.

Not unlikely, Hobbs (2004) explores teachers' motivations for implementing media literacy in American elementary and secondary education. As she explains, through the efforts of teachers "media literacy education has entered the K-12 world through many portals, including English language arts, social studies, fine arts, library-skills and educational technology, vocational education, and health education. Some schools emphasize primarily the study of media issues or the critical analysis of media messages, whereas other schools primarily provide students with opportunities for media production" (Hobbs 2004, 44; see also Scheibe 2004). Elsewhere, Hobbs (2006) empirically examines instructional practices concerning the uses of video, films and other mass media in the K-12 classroom. Using both qualitative and quantitative methods, her study demonstrates that non-optimal uses of film, videotape and other media are part of the day-to-day operating practices of many American public schools. In particular, "many teachers use video and mass media in routine ways without much explicit reflection on their education aims and goals. [...] This study found little evidence of the critical use of popular media in the classroom. Research is needed to better determine whether and how popular media texts are being used in American K-12 classrooms" (48).

Media Learning. Several scholars focus on learning in media literacy education, and, in particular, on the relationships between students' existing knowledge about mass media and the knowledge teachers make available. Most notably, Buckingham (1998) defends the view that much can be learned from classroom-based research. Based on previous empirical work, he warns for an "oversimplification of the complex and messy realities of classroom practice. Especially when it come to the areas with which media education is so centrally concerned (e.g., with what students see as their own culture and their own pleasures), they may well be inclined to resist or reject what teachers tell them" (38). Likewise, O'Sullivan (2007) argues that public discourse often ignores young people's own perspectives on mass media.

Bragg (2002) uses her classroom observations to illustrate that what and how students learn during media literacy practices has often little relevance to their everyday mass media use. Zaslow and Butler (2002, 32) add that "when media literacy programs alienate students by ignoring or dismissing the complexities of media use, youth may shut down and close themselves to the learning process." Sun and Scharrer (2004) translate these ideas to a psychological framework. "Research suggests individuals employ many strategies to reduce their feelings of cognitive dissonance, including rationalization or coming up with justifications for one of their positions or complicated reasoning and arguments by which one can argue that the apparent conflict does not exist. [...] Student's may well reveal ways in which they can successfully navigate the course – which requires critical examination of texts – and, at the same time, retain the pleasure many presumably obtain from viewing the film" (41-42). And indeed, their data indicate that media literacy-oriented curricula which seek to change attitudes toward popular media messages may prove ineffective because of the enjoyment audience members experience in relation to those texts. In line with these arguments, several authors (Charles 2007; Erstad, Gilje, and de Lange 2007; Hundley 2004; Van Bauwel 2008; Fisherkeller 1999; Peppler and Kafai 2007) stress the need to gather ethnographic data, to account for pupils' actual media experiences and how they perceive media literacy strategies. Corona (2009) uses conversation analysis to identify a typology of the forms of interaction occurring when children watch television in a school context (see also, Eke 1997). Geiger, Brunig and Harwood (2001) draw from

a telephone survey to explore the ways in which people talk about television in their daily lives. These findings are then discussed in terms of media literacy education.

Also, several scholars explore the complexities of creative production work in a media educational context. For example, Bragg (2002) illustrates how media production can be flexible enough to permit students' existing and diverse pleasures and areas of expertise in the classroom, while at the same time stimulating them to reflect on what they make. Archer (2006, 143) teases out "the relations between technology and creative media education by looking at how students use their own popular cultural resources and interests to construct music-based video work." Similarly, Erstad and Gilje (2008) explore the impact of everyday experiences with media and digital tools on students' production practices in media education. Their survey data indicate young people draw largely on their media experiences from outside the schools. Therefore, they suggest media literacy education should be framed in the intersection between formal and informal ways of learning among youth. Elsewhere, Erstad, Gilje and, de Lange (2007) describe media literacy education as an increasingly important "transactional learning space" between school-based education and leisure activities among youth, where students engage in learning activities that are linked to an existing media culture outside the school context (see also McDougall 2007; Brereton and O'Connor 2007; Charles 2007; Marsh 2006; Peppler and Kafai 2007; Sobers 2008; Willett 2007; Buckingham and Harvey 2001; Holzwarth and Maurer 2001; Niesyto 2001; Niesyto and Buckingham 2001; Niesyto, Buckingham, and Fisherkeller 2003; Collins 1990; Dezuanni 2006; Zaslow and Butler 2002).

Limitations. It is difficult to draw general conclusions from this wide variety of descriptive work on media teaching and media learning. Clearly, these researchers think of social reality as a complex of interpretations and meanings. Therefore, they argue that detailed descriptive accounts provide useful insights into the messy realities of classroom practices. Thus, they tend to work on small cases, in naturally occurring situations, sometimes focusing on only a handful of teachers or pupils, with the chance of gaining good understanding of them. Mostly, they use qualitative research methods – although some authors convincingly illustrate how quantitative data can provide a valuable addition (Erstad and Gilje 2008; Hobbs 2006; Geiger 2001; Sun and Scharrer 2004). Unfor-

unately, precisely because of the contextual richness in these studies, it is not clear how to make abstraction of their specificity. In other words, all its detail and naturalness in terms of describing media educational contexts is at the cost of not gaining any basis for empirical generalization. As Fisher-Keller (1999, 202-203) admits, as diverse as these individuals are, "their situations do not represent all [children and adolescents], although there are likely similarities." Caronia (2009) rightfully concludes that, at best, these data allow researchers to formulate exploratory hypotheses.

Explaining Effects

Although qualitative studies can provide valuable insights into the process of teaching and learning, experimental designs are used as a standard to assess the effectiveness of instructional interventions, because they deliver harder evidence (Hobbs and Frost 2003; Kubey 2003). However, to investigate the impact of media literacy curricula, most evaluators prefer experimental field studies or quasi-experimental research to take into account the real-life characteristics of the school environment (Hobbs 2004; Kubey 2003; Gonzales et al. 2004).

Typically, interventions take place in class during regularly scheduled class time, at a school outside of the regular classroom, or (sometimes) in community groups. Usually, the researcher, the class instructor, a member of the research staff, or a trained (under) graduate student delivers the media literacy intervention. Most of the studies use quantitative measures, sometimes in combination with qualitative measures (e.g., Reichert et al. 2007; Scharrer 2005, 2006). Ideally, pre-tests and post-tests are conducted to measure if the intervention causes changes in knowledge, attitudes and/or behaviors. If possible, control groups are used to reduce threats to internal validity (Bergsma 2008). For example, Scharrer (2005) used closed-ended questionnaire items to pre-test and post-test sixth graders' attitudes toward media violence. These items were created to apply to the delivered curriculum and pre-tested with a small group of students. Moreover, participants gave pre- and post-curriculum responses to the question, "How is television violence different from real-life violence?" The written responses were analyzed qualitatively, to identify themes. Post-curriculum responses were expected to reflect the content of the media literacy intervention. The media literacy sessions were led by undergraduate students enrolled

in an upper-level seminar on television violence. Due to the lack of a control group, measures were taken to minimize possible threats to internal validity.

Theoretical Models and Empirical Results. Media literacy education is consistently theorized to affect how individuals respond to media messages. Unfortunately, few studies combine theoretical work with empirical hypothesis testing. Nevertheless, some notable exceptions exist. In particular, inoculation theory, the theory of reasoned action, and (especially) the message interpretation process model (MIP) have been used to explore effectiveness in a media literacy education context.

Inoculation theory (see McGuire 1964) focuses on how to make people more resistant to persuasion. It argues that people can be motivated to refute specific challenges to existing attitudes. This process of counterarguing is hypothesized to strengthen resistance to subsequent counterattitudinal attacks. Banerjee and Greene (2006) developed an inoculation-based smoking intervention using media educational strategies. They compared the efficacy of two basic instructional methods, media analysis and media production, in eliciting cognitive processing and changing smoking related attitudes. The format for both workshop manipulations included an introductory workshop exposing students to tobacco advertising and discussing various refutational strategies. Subsequently, the analysis group and the production group respectively analyzed and produced antismoking advertisements. A relatively novel, creative and experiential classroom activity, the authors expected the production workshop to be more effective in reinforcing unfavorable attitudes toward cigarette smoking through underlying cognitive mechanisms. The results indeed demonstrated overall support for the production workshop eliciting more attention and more positive workshop perceptions than the analysis workshop. Also, only the production workshop was successful in reducing positive attitudes toward smoking. However, the analysis workshop proved more efficacious in eliciting comprehension and recall.

Elsewhere, Banerjee and Greene (2007) analyze the impact these programs had on behavioral intention to smoke and subjective norms. According to the theory of reasoned action (see Fishbein and Ajzen 1975) an individual's behavioral intention is an immediate precursor of behavior. Behavioral intention is determined by a person's attitudes toward performing the given behavior and the perceived normative pressure to perform that behavior. As expected, the

production workshop was more successful than the analysis workshop in changing participants' behavioral intention to smoke and normative norms (Banerjee and Greene 2007). In sum, both studies uncover pathways of cognitive and attitudinal influence. They also point out the importance of taking into account participant involvement for effective intervention design. If students perceive a lesson as relevant, they are more likely to listen to the information presented and to actively engage in student-centered learning activities.

Based on key aspects of social cognitive theory (see Bandura 2002), expectancy theory (see Goldman, Brown, and Christiansen 1987) and scholarship on decision making, Austin, Pinkleton, and Funabiki (2007) and Pinkleton, Austin, Cohen, Miller, and Fitzgerald (2007) propose the message interpretation process (MIP) model as a framework for studying the ways in which logic- and affect-based dimensions of decision making work together to produce decisions. Because media literacy is theorized to affect how individuals respond to media messages, it is appropriate to examine it using a model that treats decision making as a process of evaluation and understanding, rather than as a simple response to message stimuli. Not unlike inoculation theory, the MIP model takes a receiver-oriented, information-processing approach to media effects (Austin et al. 2002). Active rather than passive viewers of television, children and adolescents are assumed to be somewhat, but not entirely logical about their decision making process used to guide action (Austin and Johnson 1997b). Thus, the MIP model proposes that individuals, applying logic to their analysis of media messages, make logical comparisons between their personal experiences and what they see in the media. However, decision making often takes place in an emotional context that can bias, or limit, more logical aspects of decision making. For example, desirability reflects the extent to which individuals find media portrayals enticing. A highly desirable portrayal is hypothesized to affect the more logical aspects of decision making, resulting in behavior congruent with the media message (Austin, Pinkleton, and Funabiki 2007; Austin et al. 2002).

Clearly, these information-processing models are highly appropriate for the study of media literacy education. For instance, by their emphasis on critical thinking, media literacy proponents suggest that active consideration of message intent, content and effects should improve the quality of media related judgments. Likewise, the MIP model proposes that, by encouraging a more systematic approach to decision making

based on a thoughtful consideration of available information and evidence, an enhanced, logical comparison process should provide balance to the affective route, which requires less mental effort. This may help children and adolescents to resist, for example, the image-based and affect-laden appeals used by many advertisers to gain customers by short-circuiting their logical thinking about the costs and benefits of product use (Austin, Pinkleton, and Funabiki 2007; Pinkleton et al. 2007). However, despite this theoretical progress, some emerging empirical patterns remain counterintuitive.

While some authors (Scharrer 2005; Reichert et al. 2007; Ramasubramanian 2007) find limited support for the effect of media literacy programs on children's and adolescents' attitudes and behavior, most studies conclude otherwise. Typically, data support that media literacy education increases knowledge and understanding of media messages (e.g., Feuerstein 1999; Hobbs and Frost 2003). Nonetheless, whether these critical-thinking skills transfer to everyday media-consumption experiences is far less clear. For example, Duran, Yousman, Walsh and Longshore (2008) tested the effectiveness of a holistic college course in media literacy. They found this media literacy intervention to heighten participants' awareness of media structures, content, and impacts. However, a content analysis of three open-ended questions measuring participants' interpretations of a televised advertisement yielded no statistically relevant differences between the media literacy group and the control group. This suggests that while participants did learn about mass media during the media literacy course, they did not necessarily use this knowledge to evaluate the advertisement. In line with this, Cantor and Wilson (2003) point out that, although many researchers report cognitive changes in how children interpret violence, media literacy interventions generally fail to modify children's enjoyment of or exposure to violent programming. Also, Steinke et al. (2007) found that media literacy interventions did not influence children's gender stereotyping of scientists. They suggest that media literacy training might even activate gender schemas, "also activating the cognitive structures that make them resistant to changing these gender schemas" (56).

Even more problematically, several studies reveal boomerang effects. For instance, whereas participants' beliefs associated with risky health behaviors often decrease, positive affect toward individuals portrayed in advertising is likely to increase (Austin, Pinkleton, and Funabiki 2007). Likewise, Ramasubramanian and Oliver (2007) report how a media literacy

video increased prejudicial responses as compared to a control video. Thus, “the literacy condition, surprisingly, seemed to activate prejudicial feelings although it was intended to suppress such feelings” (639). Not unlikely, Nathanson (2004) and Byrne (2009) indicate that improving children’s understanding of television may heighten the salience or appeal of violence and increase children’s willingness to use violence (see also Livingstone and Helsper 2006). Byrne, Linz and Potter (2009) empirically substantiate this view. In particular, they tested two competing explanations for the boomerang effect, media priming and psychological reactance. Based on a 2 x 2 factorial experiment with elementary school children, they conclude that the boomerang effect is best explained by the processing of videoclips (media priming) and is not likely due to resistance to the instructional elements of the lesson (psychological reactance).

As Austin et al. (2005) suggest, an increase in relevant knowledge, may not always predict changes in attitudes and behavior (see also, Nairn and Fine 2008; Livingstone and Helsper 2006). This possibly explains why many media literacy curricula appear to have more success in changing knowledge than in changing attitudes or behavior. Within this context, Austin et al. (2007) and Nathanson (2004) distinguish interventions that focus on knowledge and skill development from less pedagogical, emotion-based approaches that emphasize negative affect, such as mistrust. In Nathanson’s (2004) terms, factual media literacy programs aim at improving children’s and adolescents’ sense of “factuality”, of understanding that television events are produced and scripted. Evaluative approaches highlight the undesirability of, for example, violence or violent characters. Rather than encouraging children and adolescents to understand the mechanics of television, evaluative strategies try to create negative evaluations about what is viewed. Nathanson (2004) provides evidence that evaluative mediation is an effective strategy for influencing attitudes and behaviors. She concludes from this that, “if educators wish to teach children about the technical aspects of television, they may need to pair factual mediation with evaluative mediation” (332). Likewise, Austin and colleagues stress the importance for media literacy programs to include a motivational component so that young people not only understand the concepts of media literacy, but also have the motivation to apply this knowledge (Austin, Pinkleton, and Funabiki 2007; Austin et al. 2002; Austin et al. 2005). Therefore, future interventions may want to target both logic-based and emotion-based aspects

of information processing. Individuals’ use of skepticism may depend on their motivations to do so; these motivations could be increased if they become more suspicious of message producers (Austin et al. 2005).

Limitations. Many problems accompany developing and field testing media literacy programs in an educational context. First, the demand for real-life field studies brings along many organizational and methodological difficulties. It calls not only for the cooperation of a large number of researchers, schools, teachers, and students. Also, given limited access to schools for multiple time periods, most data must be interpreted with sampling biases in mind (Banerjee and Greene 2006; Scharrer 2006; Pinkleton et al. 2008). Sometimes, data are collected from university students (e.g., Reichert et al. 2007; Primack et al. 2009; Duran et al. 2008). It is not clear if these findings generalize to K-12 education. Also, statistical power is often weak. Therefore, non-significant results should be interpreted cautiously (Nathanson 2004; Duran et al. 2008). Moreover, researchers should take into account a variety of potential extraneous sources of variation and contamination across groups, where students may, for example, talk with friends about their experiences in the programs. Finally, while schools easily lend themselves to measure short-term effects of brief media literacy interventions on knowledge and attitudes, it is much more difficult to implement extensive programs or to assess long-term effects and behavioral change. This is highly problematic, because long-term cognitive, attitudinal, and behavioral effects are often the main media literacy target outcome (Bergsma 2008; Byrne, Linz, and Potter 2009; Austin and Johnson 1997a, 1997b; Duran et al. 2008; Steinke et al. 2007).

Second, many differences between research projects make it hard to replicate previous findings or to compare different results. On the one hand, interventions often vary in the ways in which educators deliver them. Generally, teachers adapt educational strategies to the needs of their students, to their own interest, and to the context in which they work (Hobbs and Frost 1998). To increase control, some researchers (Reichert et al. 2007; Ramasubramanian 2007; Ramasubramanian and Oliver 2007) use video fragments as media literacy manipulation. However, they thereby lose naturalness. Also, many studies combine several approaches into one intervention. Therefore, it becomes difficult to establish the respective contributions of these specific elements (Cantor and Wilson 2003). Thus, research-

ers should be more explicit about “the media literacy core concepts/skills they include in their interventions, and should more carefully address who delivered the intervention with what fidelity, in what setting, for how long and utilizing what pedagogical approach” (Bergsma 2008, 522). On the other hand, participants often differ in age, educational level, developmental level, socio-economic level, gender, race, and so forth. Unsurprisingly, most of these variables are hypothesized to influence effectiveness (Banerjee and Greene 2006; Banerjee and Greene 2007; Bergsma 2008).

Third, the pre-test post-test design presents the pitfall of social desirability. Children and adolescents often realize and give what interviewers wish to find. Thus, it becomes difficult to ensure that participants experience a real change and that findings will generalize outside the research context (Cantor and Wilson 2003; Nathanson 2004; Scharrer 2006). Research can alleviate this issue somewhat by assuring students of anonymity, by communicating that there are no right and wrong answers, or by having different individuals or non-researchers administer the intervention and the questionnaire (Nathanson 2004; Scharrer 2005).

Discussion

Most scholars agree that, at its core, media literacy depends on both knowledge and skills. In particular, individuals need to acquire knowledge about key facets of the mass media phenomenon, such as media industries, media messages, media audiences, or media effects. Also, they should be able to apply this knowledge when accessing, analyzing and evaluating all kinds of media messages. Of course, media literacy is not something you either are or not. Rather, individuals permanently move on a continuum. For instance, as children mature, they naturally learn many things about the media. However, media literacy educators assume there is always room to empower children and adolescents to use mass media more self-consciously. Therefore, media educators translate relevant knowledge and skills into media educational content and methods. These, in turn, are thought to elicit learning outcomes that open up many opportunities. For example, today, mass media offer an endless amount of information and entertainment. If individuals know how to access, analyze and evaluate both, they can better match their personal goals. At the same time, media literate individuals are aware of potential risks, such as representation bias regarding social or health issues.

From this point of view, it is possible to distinguish three analytically different research perspectives. First, if media literacy depends on knowledge and skills, media literacy scholars should come to terms about which knowledge and skills are deemed most necessary. Throughout the reviewed literature, scholars so far have mainly focused on media industries, media messages, media audiences, and media effects. Arguably, these concepts broadly cover the research interest of most contemporary mass media scholars (see Potter 2009). However, while most media literacy scholars seem to focus on television, other important mass media exist, like newspapers, magazines, radio or the cinema. Even more importantly, during the last few decades, new technologies such as computers, the Internet, and mobile phones have greatly expanded media consumption. As was illustrated, some scholars (e.g., Livingstone 2004; Buckingham 2007; Erstad and Gilje 2008; Erstad, Gilje, and de Lange 2007; Sourbati 2009) have started to reflect upon the applicability of existing concepts in a digital media context. Nonetheless, much more conceptual work remains to be done to articulate the necessary knowledge in a digital society. Also, knowledge alone will not suffice. As Potter (2004) convincingly argues, individuals need skills of analysis, evaluation, grouping, induction, deduction, synthesis, and abstracting. Hobbs and Frost (2003) add reading comprehension, writing skills, critical reading, critical listening, and critical viewing skills to this list. Future research should more explicitly disentangle and describe the whole variety of cognitive abilities that media literacy encompasses.

Second, if media literacy scholars wish to theoretically explain the effectiveness of media literacy practices, they should more consistently differentiate between several types of explanatory variables. In particular, within the current literature, three types of factors have been hypothesized to influence cognitive learning outcomes. One, to measure the impact of instructional methods, scholars have compared analysis with production (Banerjee and Greene 2006; Banerjee and Greene 2007), factual with evaluative approaches (Nathanson 2004), and peer-led with teacher-led methods (Pinkleton et al. 2008). Two, information-processing research has explored the contributing role of individual differences, such as personal relevance, perceived realism, perceived similarity, identification, desirability, and so forth (Austin, Pinkleton, and Funabiki 2007; Austin et al. 2002; Banerjee and Greene 2006; Banerjee and Greene 2007). Three, cultural scholars

have illustrated that children and adolescents always give meaning to mass media within particular social contexts. Young people (and teachers) bring varying histories of media exposure (and knowledge and skills) to the classroom. These are likely to be influenced by broader social categories, such as class, gender, age, race, and so forth. Thus, it becomes necessary to contextualize information-processing mechanisms. In other words, media learning most probably takes place in individuals' minds and as a participatory, social process. Therefore, media literacy scholars should examine if and how individual and social aspects of media learning interrelate. Of course, empirically, the complex interactions between instructional methods, individual information processing and social differences are difficult to investigate. Also, researchers should urgently develop more valid and reliable research instruments to aptly capture media learning outcomes. Primack, Sidani, Carroll, and Fine (2009), Arke and Priamck (2009), and Duran, Yousman, Walsh, and Longshore (2008) provide good starting points. These measurements enable researchers to more precisely assess cognitive effects caused by media literacy practices.

Third, to preserve its real-life relevance, media literacy scholars should look beyond mere cognitive learning. As explained by, among others, the theory of reasoned action, behavior is largely determined by a person's attitude toward performing the given behavior. Logically, it follows that influencing children's and adolescents' knowledge and skills will not necessarily transfer to everyday mass media consumption. As Potter (2004) asserts, acquiring knowledge or skills by itself does not indicate media literacy. "The person must actively and mindfully use the information in those knowledge structures during exposures to media messages" (61). (Or, in Buckingham's (2003) idiom, young people may well be inclined to resist what they learn from media educational activities.) Interestingly, information-processing researchers and cultural scholars agree: both cognitive and affective mechanisms are theorized to determine the cognitive, attitudinal and behavioral outcomes of media literacy practices. Nonetheless, from an empirical point of view, this complexity raises many additional methodological challenges. For example, Byrne (2009) and Byrne, Linz, and Potter (2009) provide a good example of how to measure the short-term impact of a media literacy intervention that aims to prevent aggressive responses to violence portrayed in a media message. In both experiments, after participating in their assigned condition, all children

immediately took part in a dependent variable stimulus exposure session in which they viewed a violent media clip. While several studies only measure cognitive learning, this type of design enables researchers to evaluate if individuals actually use this knowledge and skills during mass media exposure. Nonetheless, it can be questioned if these experimental results generalize to everyday mass media use. Also, immediate effects do not necessarily translate into long-term influence.

During the last decade, the number of available publications on media literacy education has grown considerable. Nonetheless, the published literature still mainly consists of conceptual pieces or one-shot studies that generate, at best, exploratory findings. Even if scholars have found some fertile conceptual common ground, the body of available empirical evidence remains largely fragmented. This literature review indicates that media literacy education can (indeed) be evaluated from a variety of research perspectives. However, it also illustrates how these different conceptual and empirical lenses can be integrated as complementary facets of a single research object. In this way, it becomes possible to more comprehensively understand the everyday complexity of media literacy practices.

^a According to Ebsco, *Communication & Mass Media Complete* provides "the most robust, quality research solution in areas related to communication and mass media. *CMMC* incorporates the content of CommSearch (formerly produced by the National Communication Association) and *Mass Media Articles Index* (formerly produced by Penn State) along with numerous other journals in communication, mass media, and other closely-related fields." A complete title list can be found on: <http://www.ebscohost.com/>

^b The search was conducted in February 2010.

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