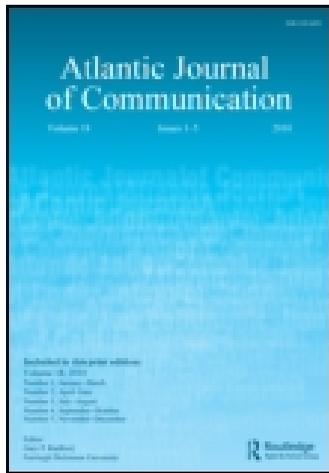


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Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Atlantic Journal of Communication

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/hajc20>

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Published online: 30 Apr 2015.



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To cite this article: Hans Martens & Renee Hobbs (2015) How Media Literacy Supports Civic Engagement in a Digital Age, *Atlantic Journal of Communication*, 23:2, 120-137, DOI: [10.1080/15456870.2014.961636](https://doi.org/10.1080/15456870.2014.961636)

To link to this article: <http://dx.doi.org/10.1080/15456870.2014.961636>

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How Media Literacy Supports Civic Engagement in a Digital Age

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Young people are making active use of the Internet in ways that may or may not contribute to civic engagement. Whereas some scholars believe that civic engagement arises naturally from digital media use, others believe that media literacy education is needed to provide the cognitive and social scaffolding that systematically supports civic engagement. Research with a sample of 400 American high school students explores the relationship between participation in a media literacy program, academic ability, frequency of Internet use, information-gathering motives, news and advertising analysis skills, and the intention toward civic engagement. Findings show that students in a selective-admission media literacy program have substantially higher levels of media knowledge and news and advertising analysis skills than other students. Participation in a media literacy program was positively associated with information-seeking motives, media knowledge, and news analysis skills. Moreover, information-seeking motives, media knowledge, and news analysis skills independently contributed to adolescents' intent toward civic engagement.

Scholars have long debated how civic engagement contributes to the quality of public life. When people forge social connections, it supports the development of social norms and trust that bring along beneficial effects on education, children's welfare, safety, health, happiness, and the quality of government (Putnam, 1995a, 1995b, 2000, 2001). Within this context, civic engagement is related to political participation in the conventional sense, but at the same time it more broadly refers to people's connections with the life of their communities (Putnam, 1995b).

For young people, both formal and informal educational experiences may contribute to building the knowledge, skills, and attitudes associated with civic engagement (Bennett, 2008;

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Levine, 2011). Citizens need not only access to information but also the means and motives to process that information effectively. In particular, media literacy programs in American high schools can support the development of young people's ability to use, analyze, and create media messages (Hobbs, 2007; Hobbs & Frost, 1999). A constellation of competencies, including knowledge about the media, message analysis skills, and composition and collaboration skills are thought to be valuable as students learn to be active participants in responding to news and current events (Rheingold, 2008). Previous research has already shown that civic engagement is associated with both social demographic variables and media use habits (Quintelier & Hooghe, 2011; Romer, Jamieson, & Pasek, 2009). In this study, we examine how media literacy education may support information-seeking motivations and the development of civic engagement competencies in relation to digital media.

THEORY AND RESEARCH ON DIGITAL AND MEDIA LITERACY EDUCATION

Researchers on digital media and learning are eager to show that friendship and interest-driven online activities can support the development of "digital social capital," laying the foundation for engagement in participatory politics (Cohen & Kahne, 2012; Jenkins, Clinton, Purushotma, Robison, & Weigel, 2007). Participatory political acts include writing and disseminating a blog post about a political issue, forwarding a funny online video to one's social network, or participating in a poetry slam. Many teens receive news from family members; YouTube posts; or an online community where people discuss a hobby, sport, or fandom. Survey research has found that youth who engaged in at least one act of participatory politics were almost twice as likely to report voting in 2010 as those who did not. These researchers believe that such political acts "allow individuals to operate with greater independence in the political realm, circumventing traditional gatekeepers of information and influence, such as newspaper editors, political parties and interest groups" (Cohen & Kahne, 2012, p. 2).

Others scholars argue that adolescents may rather benefit from more structured and systematic exposure to school-based collaborative and critical thinking activities that promote reasoning, information evaluation, respect for diverse perspectives, and civic engagement competencies. When media literacy education is formally incorporated into classroom instruction in the secondary grades, teachers help students use, analyze, create, reflect, and make sense of media messages through a guided process of inquiry learning. Such educational programs provide a kind of intellectual and social scaffolding that supports the development of civic engagement (Buckingham, 2000, 2003; Hobbs, 2012; Kellner & Share, 2007).

As we understand it, the competencies of digital and media literacy include the ability to make responsible choices and access information by locating and sharing materials and comprehending information and ideas; analyze messages in a variety of forms by identifying the author, purpose, and point of view and evaluating the quality and credibility of the content; create content in a variety of forms, making use of language, images, sound and new digital tools and technologies; reflect on one's own conduct and communication behavior by applying social responsibility and ethical principles; and take social action by working individually and collaboratively to share knowledge and solve problems in the family, workplace, and nation and by participating as a member of a community (Hobbs, 2010).

Some tension exists among scholars and practitioners about whether it is more important to build students' knowledge about mass media industries, messages, and effects (Potter, 2004) or to work with students' existing media preferences, deepen conceptual and theoretical understanding as a means to strengthen critical analysis skills, or promote creative self-expression and social engagement through media production activities (for a review, see Martens, 2010). In the context of secondary education, educators may blend these approaches, using theoretically rich core concepts while supporting students' knowledge through instructional programs in English language arts or social studies with substantial focus on critical analysis of news, advertising, issues of representation, and media ownership (Hobbs, 2004).

Theorists and advocates of media literacy have long claimed that it supports the practice of civic engagement by increasing students' intellectual curiosity and promoting self-efficacy. More than 50 years ago, Stuart Hall and Paddy Whannel (1964) positioned media education as a means to "provide imaginative experiences which could help young people deal with some of the problems they face as a result of maturing quickly and moving at an early age into a more open society" (p. 26), and Neil Postman and Charles Weingartner (1971) suggested high school reforms based on student-centered press criticism and social organizing. Contemporary instructional practices of media literacy often include keeping a media-use diary, using information search and evaluation strategies, reading/viewing/listening and discussion, close analysis, cross-media comparison, gaming/simulation/role-playing, and multimedia composition (Hobbs, 2010). These activities support civic engagement because, as Rheingold (2008) explained, participation in the public sphere may be cultivated through media literacy as young people gain direct experience with the practices of online publishing, discourse, debate, and collective action.

Framed as an expanded conceptualization of literacy, digital and media literacy has also been recognized as a tool for strengthening young people's participation in civic and political life (Benkler, 2006; Bennett, 2008; Jenkins et al., 2007; Mihailidis, 2014; Rheingold, 2008), enabling them to ask good questions, seek out information on relevant issues, evaluate the quality of information available, and engage in dialogue with others to form coalitions. A recent study found that nearly half of high school students from 21 high schools in California had engaged in various classroom activities designed to support media literacy competencies, including critically analyzing the trustworthiness of websites, using the Internet to get information about political or social issues, and creating content for the web. These activities are associated with higher rates of online politically driven participation (Kahne, Lee, & Feezell, 2011).

Media literacy outcomes seem to be dependent upon specific dimensions of the learning environment. For example, Hobbs and Frost (2003) demonstrated how critical analysis of news and advertising develops differentially in response to specific classroom learning environments, and Banerjee and Greene (2006) found differences in learning outcomes between media literacy instructional approaches that emphasized critical analysis and those emphasizing media production.

Therefore, we examine research questions in this study that explore the relationship between media knowledge, media analysis skills, academic level, and participation in a media literacy program. We ask the following:

RQ1: Are there differences in media knowledge and media analysis skills associated with students' academic level?

RQ2: Are differences in media knowledge and media analysis skills associated with participation in a school-based media literacy program?

RQ3: What is the relationship between knowledge about media and critical analysis of news and advertising?

MOTIVATIONS FOR DIGITAL MEDIA USE

Many scholars have posited that electronic and digital media are one of the main causes of the erosion of civic life. For example, Putnam (1995b) postulated that television viewing privatizes our leisure time, that is, it displaces the time one spends on social activities outside the home. He also argued that television might induce passivity, and it may even change our perceptions of the world. Later, this argument has been extended to the Internet, as some researchers have suggested that time spent online is associated with declining social involvement and psychological well-being (Kraut et al., 1998; Kraut et al., 2002; Nie, 2001).

This perspective has been criticized for not taking into account the complexity of media uses and the motivations that underlie behaviors. Even if the amount of time people spent watching television is significantly correlated with political and civic participation, much of this research offers only partial insight into the effects of the media (Shah, Cho, Eveland, & Kwak, 2005; Shah, McLeod, & Yoon, 2001). To be sure, Putnam (2000) himself acknowledged this point. For instance, he later distinguished between selective and habitual viewers, on one hand, and preferences for different types of media programs, on the other (see also Hooghe, 2002; Norris, 1996). Still, others have more systematically explored the relationship between patterns of media use and civic culture variables. For example, research on media uses and gratifications (Blumler & Katz, 1974; Katz, Blumler, & Gurevitch, 1973) illustrates how individuals use media such as television or the Internet to satisfy different goals. Audience needs stem from a variety of psychological or sociological origins. In turn, motivational differences generate specific patterns of media exposure that bring along differential consequences.

From this perspective, a number of studies have simultaneously considered the effects of a full range of media types (including print, broadcast, and the Internet) and motivations as they affect civic engagement (Pasek, Kenski, Romer, & Jamieson, 2006; Romer et al., 2009; Shah, Kwak, & Holbert, 2001; Shah, McLeod et al., 2001; Shah, Schmierbach, Hawkins, Espino, & Donovan, 2002). Among other things, these studies reveal that influences of demographic variables such as education, income, age, and race are partly mediated by informational media use patterns. Of interest, analyses within age breaks reveal generational differences. For example, not only do young people use the Internet for information more often than older people but the Internet is mostly associated with higher levels of civic engagement among younger age groups (Shah, Kwak et al., 2001). Such work has clearly established the importance of distinguishing between Internet use and information gathering as a dimension of motivation when examining the behaviors and attitudes of young people. For these reasons, we ask the following:

RQ4: What is the relationship between Internet use, information motivation, and media literacy?

CIVIC ENGAGEMENT AND DIGITAL MEDIA

Civic engagement has been measured in a number of ways including civic behaviors, attitudes toward elected officials, participation in political conversation, media consumption and perceptions, intention to engage in civic action, and civic knowledge (Flanagan, Syvertsen, & Stout, 2007). These varying conceptualizations of civic engagement are used to explore two sharply differing views of adolescent civic engagement in relation to digital media as both optimistic and pessimistic perspectives about the role of digital media in supporting young people's capacity for self-governance are now prevalent (Bennett, 2008).

One paradigm positions youth as engaged, expressive, and empowered as a result of their use of digital media, and another views digital media as contributing to higher levels of detachment from the public sphere. Proponents of the "engaged youth" perspective see peer-to-peer sites for creative expression as an alternative form of civic engagement and consider cell phones, digital cameras, and laptops to be tools of civic action that enable young people to take advantage of large-scale networks at critical points in time. Those who hold to the "disengaged youth" position point to data that show that young people today are less likely than their counterparts in the 1970s to exhibit nine out of 10 important characteristics of citizenship: belonging to at least one group, attending religious services at least monthly, belonging to a union, reading newspapers at least once a week, voting, being contacted by a political party, working on a community project, attending club meetings, and believing that people are trustworthy (Flanagan, Levine, & Settersten, 2009). The "withering away of civic education in schools" coincides with a substantial decline in interest in news and public affairs, reduced levels of social trust, lack of knowledge about government, limited political participation, and a lack of efficacy in social institutions among young people ages 18 to 25 (Bennett, 2008, p. 7).

The Internet challenges traditional information gatekeepers and sources of authority and shifts the conceptualization of community away from a strictly geographic-based formulation and toward an interest-based orientation. As a result, Delli Carpini (2000) suggested that online initiatives may expand the activities of youth already engaged in civic life rather than encourage those who do participate to become involved. Similarly, Bennett (2008) underlined this point with concern about naïve and overoptimistic claims about the potential of the Internet to support civic engagement. He wrote, "What young people do online tends to be largely social and entertainment oriented with only tangential pathways leading to the conventional civic and political worlds" (p. 10). However, as Buckingham (2000) pointed out, a profound generational shift is occurring, as young people are able to show a developed awareness of social and political issues, albeit not necessarily in the terms that adults might wish. For example, young people are more likely to consider civic activities, including group membership, volunteering, and participation in fund-raising or charity events as a *choice* rather than as a *responsibility*, with significantly more Asian American youth engaging in such activities as compared with Whites, African Americans, or Latinos (Marcelo, Lopez, & Kirby, 2007). No longer do young people necessarily feel a sense of obligation to follow news and current events or join political parties that engage in one-way communication to mobilize supporters.

Both paradigms on the role of media in youth civic engagement speak to the lived experience of adolescents who are now growing up with social media, and this is likely to vary as a result of many factors. Indeed, for some youth, social media may be a powerful distraction from becoming active in their communities; for others, using the Internet may contribute

to civic engagement. For these reasons, we wonder which aspects of young people's media use experiences most heavily contribute to practices of civic engagement. Our final research question therefore is the following:

RQ5: What best predicts adolescent civic engagement: media analysis skills, media knowledge, information-seeking motivations, Internet use, or exposure to a media literacy educational program?

METHOD

Research Design

We had a unique opportunity to examine the way a school-based media literacy education was implemented in a large urban high school with two existing media literacy programs. One program was an open-enrollment program, and the other was a selective-admission program. We were also able to compare students enrolled in the two media literacy programs to students who were not enrolled in a media literacy program. This enabled us to use a quasi-experimental design with a 2×2 factorial structure. One factor was based on ability grouping (selective admission vs. open admission); the other factor was based on participation in a media literacy program. This created an opportunity to examine media use behaviors and media analysis skills among students with different levels of academic talent and with differential kinds of exposure to formal education in media literacy.

Sample and Procedure

We were invited to collect survey data from Grade 11 students in a diverse, large urban high school in the Mid-Atlantic region of the United States when the school first implemented a new media literacy program for regular admission students in 2009. The community itself, a nearby suburb of a larger metropolitan area, consists of 76,000 residents, including 46% Whites, 28% African Americans, and 22% Hispanics. More than 40% of the families in this community speak a language other than English at home, as compared with the U.S. national average of 18%. This district is diverse in terms of socioeconomic levels and attracts children of business and government professionals, knowledge workers, technical staff, and service workers. It has high levels of social mobility, with 17% having arrived in the community within the past two years and another 20% having arrived within 3 to 5 years. This community includes a significant number of well-educated adults. More than 48% of adults in this community have a bachelor's degree or higher, as compared with the U.S. national average of 24% (U.S. Census, 2010).

Student educational achievement level in this sample is high, with 60% of students enrolled in honors English, 38% in regular English, and only 2% in English as a second language. All students registered for Grade 11 in the spring semester of 2007 were eligible for the study, which was approved by the school district institutional research board. Students ranged in age from 15 to 19 years old. To gather data for this study, students completed a paper-and-pencil questionnaire measuring media knowledge, media analysis skills, and civic engagement. In addition, students answered questions relating to demographics, their academic program, and

their use of the Internet. Of the 507 students who were given the questionnaire, 107 did not complete enough items to provide usable data, resulting in a sample size of 400.

Media Literacy Programs

Like many American high schools, this urban public school tracks students using ability grouping. When they enter high school in Grade 9, a small number of students with good grades, strong teacher recommendations, and high test scores may be admitted to one of two selective-academic programs: One emphasizes science and math, and the other emphasizes communications and media literacy. The *selective-admission media literacy program* is an interdisciplinary program where students' coursework in English, social studies, and media production are conceptually unified. Students complete a series of inquiry-learning activities that integrate English, history, and media production courses. As seniors, students develop a portfolio of multimedia communications projects and give a formal capstone presentation evaluated by outside reviewer to showcase their learning over four years. They participate in two required electives including journalism and a school broadcast journalism program. In effect, media literacy concepts are interwoven into nearly every part of the students' daily experience in English, history, government, and the media courses over the entire school year. The selective-admission media literacy program is limited to about 75 students and has been a part of this high school's culture for more than 20 years.

For students without the good grades, test scores, and recommendations needed to enroll in the selective admission programs, there are open-admission tracks. Here students must choose from among five "academy" programs including entrepreneurship, human service, international studies, science-math-technology, or media literacy. Open-admission students freely choose among the five programs after getting advice from middle-school guidance counselors and parents. The academy structure effectively creates a school-within-a-school experience and is designed to promote meaningful relationships between faculty and students that support deeper levels of student engagement and learning. Students who enroll in the *open-admission media literacy program* take remedial, regular, or honors-level courses in English, history, science, and math. Over the course of the four-year program, they are required to take two semester-long courses in media literacy (Media Literacy and Mass Media and American Society) and may also choose from media production electives, including newspaper, yearbook, or digital media production.

Informal interviews with faculty members revealed that all faculty members were familiar with the core concepts of media literacy as articulated by the National Association for Media Literacy Education (2012). However, we were unable to determine whether the faculty explicitly taught these concepts or whether students were expected to "deduce" them from their daily activities. Although we did not conduct systematic observational research of classroom practice, we made classroom observations where we saw evidence of reference to media literacy concepts in both the selective-admission program and the open-admission media literacy program.

Measurement Instruments

Intention toward civic engagement. Following previous work on civic engagement (Schulz & Sibberns, 2004), we assessed students' intent to engage in nine types of political and

civic activities. Students were asked to report if they expect to engage in the following activities when they become an adult: vote in national elections, get information about candidates before voting in an election, join a political party, write letters to a newspaper about social or political concerns, be a candidate for a local or city office, volunteer time to help poor or elderly people in the community, collect money for a cause, collect signatures for a petition, and participate in a peaceful rally or protest. A 4-point scale was used, scaled as *certainly will not do*, *probably will not do*, *probably will do*, and *certainly will do*. Responses were combined to form an index ($M = 2.66$, $SD = .52$, Cronbach's $\alpha = .79$).

Media literacy analysis skills. We used two media literacy performance tasks that engaged students in the practice of critically analyzing both a one-page newsmagazine story and a full-page print ad. Items were based on a previously developed and validated instrument (Hobbs, 2004, 2007; Hobbs & Frost, 2003; Quin & McMahon, 1995). Table 1 provides a visual depiction of the approach to measuring news and advertising analysis skills. A mixture of 2 × 5 open-ended and checklist activities were used to measure respondents' ability to analyze news and advertising, with slight differences in questions reflecting the different characteristics of the genres of news and advertising. Students were given a specific media text and asked to identify the purpose of the message, describe the target audience, and use specific information

TABLE 1
Measuring Media Literacy Through News and Advertising Analysis Tasks

<i>News Analysis Task</i> <i>Text: Print Time Magazine Article</i>		<i>Advertising Analysis Task</i> <i>Text: Print KOOL Cigarette Ad</i>	
<i>Concept</i>	<i>Item</i>	<i>Concept</i>	<i>Item</i>
Understanding message purpose	What is the purpose of this message? Check all that apply: inform, entertain, persuade, self-expression, make money	Understanding message purpose	What is the purpose of this message? Check all that apply: inform, entertain, persuade, self-expression, make money
Understanding target audience	Who is the target audience? Check all that apply: Gender (men, women); Age (children, teens, adults, seniors); Ethnicity (White, Black, Hispanic, Asian, other); Social Class (poor, working class, middle class, wealthy) What specific information from the text supports your answer?	Understanding target audience	Who is the target audience? What specific information from the text supports your answer?
Awareness of message constructedness	What techniques were used to attract and hold your attention?	Awareness of message constructedness	What techniques were used to attract and hold your attention?
Multiple points of view	What different points of view were presented?	Recognition of subtext	What is the implied message or subtext?
Recognizing omission	What information was left out of this message?	Recognizing omission	What information was left out of this message?

from the text to justify their reasoning, demonstrate awareness of specific media construction techniques, identify multiple points of view, offer a plausible subtextual interpretation not stated directly in the text, and identify omitted information.

To code open-ended data, researchers created a coding protocol by first identifying the range of possible written responses to each item and identifying better and less impressive answers. Then a coding protocol was created, a detailed written guide to assist scorers in identifying how to allocate points for student responses. After a training process supervised by the second author, two graduate students read all student responses and conducted the scoring. For nine out of 10 items requiring the scoring of open-ended responses, interrater reliability using Krippendorff's alpha ranged from .72 to .98 revealing moderate to high levels of reliability. For one item, Krippendorff's alpha was .67, which is still considered acceptable.

In the *news analysis* task, students were given a short *Time* magazine piece (Van Biema, 2007) and asked to read it, responding to five open-ended questions, including identify the target audience for this story, explain what specific information from the reading supports your answer, and identify the message purpose. Students were also asked to identify what techniques were used to attract and hold attention and asked to list some different point of views that were presented, and what information was left out of this message. Scores were summed to form an additive index ranging from 14 to 0 ($M = 5.92$, $SD = 3.51$).

In the *advertisement analysis* task, students were given a black-and-white reproduction of a Kool cigarette ad and asked to respond to five open-ended questions to identify the purpose of the message and the target audience. They were asked to offer a description of visual information that supports the answers. Students were asked to list various techniques that are used to attract viewer attention, identify the implied message or subtext, and suggest specific information or ideas that were left out of this ad. Scores were summed to form an additive index ranging from 14 to 0 ($M = 8.92$, $SD = 3.57$).

Media knowledge. We measured students' broad knowledge about the mass media by asking students to complete short tests to measure students' understanding of the history, economics, institutions, audiences, and effects of mass media. In the first test, students were asked to choose the right answer for six multiple-choice questions, consisting of a right answer and three distractor items. These items were based on information presented in an introductory media textbook (Rodman, 2007). For example, students were asked to identify the main purpose of photos in a newspaper, recognize the most common kind of economic control over mass media, and name the system of financing used to pay for commercial radio. The second test consisted of 11 items, asking students to identify as true or false such statements as, "The number of companies that own mass media outlets is growing," "Newspapers make most of their money through the price paid by the consumers who buy them," and "The format and style of *USA Today* was imitated by many daily news papers across the country." Responses of both tests were combined to form one overall media knowledge index ($M = .61$, $SD = .20$).

Internet use and information-use motives. To distinguish between students' actual use of the Internet and their motives for using the Internet to seek information, we first asked respondents to identify how often they use the Internet on an 8-point scale ranging from *never* to *every day* ($M = 1.55$, $SD = 1.32$). To assess students' motives to seek out information as a part of daily life, we used an instrument developed to assess Internet uses and gratifications by

Papacharissi and Rubin (2000). Using a 5-point scale, students were asked to respond to four statements: I use the Internet to search for information, to see what is out there, to keep up with current events and issues, because it provides me with a new and interesting way to do research ($M = 3.83$, $SD = .79$, Cronbach's $\alpha = .72$). Other measures of adolescent Internet motivation, including habit, social use, diversion, and entertainment were gathered but not used in the present analysis.

Demographic and control variables. Gender, academic level, and participation in the media literacy program served as control variables, which enabled us to more carefully examine the relationships between the variables of interest in our study. Because some students were admitted to special programs on the basis of test scores, middle-school grades, and teacher recommendations, students who participated in a selective admission academic program ($n = 146$) were conceptualized as distinct from those who entered the regular enrollment program ($n = 246$). We also distinguished between students who participated in a media literacy program because some students in both the selective admission program ($n = 59$) and the regular enrollment program ($n = 55$) followed a media literacy program during the past year. Because of a small number of missing data, we were not able to categorize all 400 respondents.

To examine the relationship between variables specified in our research questions, we first compared means, then used Pearson product-moment correlations, followed by multiple linear regression, building a model to determine how media literacy analysis skills, media knowledge, information-seeking motives, Internet use, participation in a media literacy program, and academic level may predict intention toward civic engagement.

RESULTS

RQ1 and RQ2 asked whether differences in media knowledge and media analysis skills are associated with students' ability grouping academic level (selective or open admission) and their participation in a media literacy program. Overall, group means clearly show that high-ability-grouped students in the selective admission academic program score better than open-admission students on our measurements of media knowledge ($M = .73$, $SD = .15$ vs. $M = .55$, $SD = .19$), $t(391) = -9.47$, $p < .001$; news analysis skills ($M = 8.11$, $SD = 2.99$ vs. $M = 4.63$, $SD = 3.15$), $t(391) = -10.78$, $p < .001$; and advertising analysis skills ($M = 10.03$, $SD = 3.28$ vs. $M = 8.23$, $SD = 3.57$), $t(391) = -4.99$, $p < .001$. Likewise, if we compare pupils who did participate in a media literacy program with those who did not, the former have significantly higher levels than the latter on media knowledge ($M = .69$, $SD = .19$ vs. $M = .59$, $SD = .19$), $t(390) = -4.69$, $p < .001$; news analysis skills ($M = 6.65$, $SD = 3.74$ vs. $M = 5.65$, $SD = 3.37$), $t(390) = -2.59$, $p < .05$; and advertising analysis skills ($M = 9.79$, $SD = 3.83$ vs. $M = 8.55$, $SD = 3.40$), $t(390) = -3.17$, $p < .01$.

Table 2 provides a more detailed breakdown of the means and standard deviations for media knowledge, news analysis, and ad analysis for both regular and special admission students in media literacy and other programs. As can be seen, open-admission students not enrolled in the media literacy program had the lowest levels of media knowledge ($M = .53$, $SD = .17$), whereas students in the selective admission media literacy program had the highest levels ($M = .75$, $SD = .13$). Advertising analysis skills show a similar trend, revealing that open-admission

TABLE 2
Comparing Means

	<i>Open Admission Program</i>		<i>Selective Admission Program</i>	
	<i>Other Program^a</i> <i>M (SD)</i>	<i>ML Program^b</i> <i>M (SD)</i>	<i>Other Program^c</i> <i>M (SD)</i>	<i>ML Program^d</i> <i>M (SD)</i>
Media knowledge	0.53 (0.17)	0.62 (0.22)	0.71 (0.17)	0.75 (0.13)
News analysis	4.80 (3.09)	4.27 (3.32)	7.60 (3.16)	8.86 (2.58)
Ad analysis	8.20 (3.45)	8.38 (4.02)	9.31 (3.18)	11.10 (3.16)

Note. ML = media literacy.

^a $n = 191$.

^b $n = 55$.

^c $n = 87$.

^d $n = 59$.

students not enrolled in the media literacy academic had the lowest levels of advertising analysis skills ($M = 8.20$, $SD = 3.45$), whereas students in the selective admission media literacy program had the highest levels ($M = 11.10$, $SD = 3.16$). However, students in the media literacy open-admission program show slightly lower scores in news analysis ($M = 4.27$, $SD = 4.02$) as compared with students in other open-admission programs ($M = 4.80$, $SD = 3.09$).

In other words, differences in students' media knowledge and media analysis skills are strongly associated with students' academic level. Academically talented students perform considerably better at both news analysis and advertising analysis and have more knowledge about the media. Moreover, differences in media knowledge and media analysis skills are associated with participation in a school-based media literacy program. This finding is qualified, however, because we found that although open-admission students in a media literacy program had higher levels of media knowledge and advertising analysis skills than students not enrolled in a media literacy program, they had somewhat lower scores on news analysis than those enrolled in other academy programs. It's possible that selection bias is at work here. Perhaps students in the open-admission program choose media literacy courses (rather than other academic programs) *because* they learn best through hands-on types of activities. In line with this, it is possible that students enrolled in the media literacy academy sample were more likely to struggle with reading comprehension, which remains an indispensable skill for the critical analysis of news.

Table 3 shows the correlation matrix for all the variables in the study, reiterating that academically well-prepared students in the special admission programs have considerably more knowledge than regular students ($r = .43$, $p < .01$) and score relatively higher on news analysis ($r = .48$, $p < .01$), which demands more reading comprehension skills than the ad analysis test ($r = .24$, $p < .01$). At the same time, students who participated in a media literacy program scored higher on media knowledge tests ($r = .23$, $p < .01$), news analysis ($r = .13$, $p < .05$), and advertising analysis ($r = .16$, $p < .05$) as compared with those who did not participate in the program.

In response to RQ3, we report statistically significant support for the relationship between knowledge about media and critical analysis of news and advertising. All three variables are associated with each other, although media knowledge seems to be empirically and conceptually

TABLE 3
Correlation Matrix

	1	2	3	4	5	6	7	8
1. Civic engagement	1							
2. Gender (female)	.25**	1						
3. Academy level	.11*	-.02	1					
4. ML program	.19**	.24**	.19**	1				
5. Internet use	-.17**	-.02	-.28**	-.03	1			
6. Information motive	.23**	.04	.17**	.03	-.34**	1		
7. Media knowledge	.19**	-.05	.43**	.23**	-.17**	.08	1	
8. News analysis	.27**	.20**	.48**	.13*	-.23**	.13**	.30**	1
9. Ad analysis	.16**	.20**	.24**	.16*	-.08	.08	.25**	.50**

Note. ML = media literacy.
* $p < .05$, ** $p < .01$.

distinct from media analysis skills. Although news analysis and advertising analysis skills display a robust relationship ($r = .50, p < .01$), the correlations between media knowledge and news analysis ($r = .30, p < .01$) and advertisement analysis ($r = .25, p < .01$) are only moderate.

In RQ4, we examined the relationship between Internet use, information motivation, and media literacy. The sheer quantity of time that students spend using the Internet is negatively associated with both information-seeking motives ($r = -.34, p < .01$) and news analysis skills ($r = -.23, p < .01$). However, although information-use motive is modestly associated with news analysis ($r = .13, p < .01$), frequency of Internet use and information motive are not related with advertising analysis skills.

In RQ5, we wanted to discover what variables best predict adolescents' intent toward civic engagement: media analysis skills, media knowledge, information-seeking motivations, Internet use, or exposure to a media literacy educational program. To get a more detailed view of how these variables together help to explain civic engagement, we performed a multiple regression analysis using civic engagement as our outcome variable. Missing values were deleted listwise. This reduced our sample size from 400 to 372 respondents. This analysis provides a quite stringent test of the explanatory potential of news analysis, advertising analysis, and media knowledge, after considering the contribution of participation in a media literacy program and our demographic variables.

As illustrated in Table 4, we tested two models to explore the relationship between variables. In Model 1, gender (female) ($\beta = .23, p < .001$) and participation in a media literacy program ($\beta = .11, p < .05$) are positively associated with intention toward civic engagement. In Model 2, we included the variables frequency of Internet use, information motives, media knowledge, news analysis, and ad analysis. In line with our theoretical framework, adding these variables contributes a sizable 9% to our explained variance. We immediately note that the effect of participation in a media literacy program disappears when adding these variables to the regression, suggesting that the impact of the program is mediated through these facets of media use. The amount of time one spends online is not significantly related to participation

TABLE 4
Predictors of Civic Engagement

	<i>Model 1</i>			<i>Model 2</i>		
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β
Intercept	2.23	.09		1.51	.19	
Gender (female)	0.24	.05	.23***	.20	.05	.20***
Academy level	0.09	.05	.08	-.11	.06	-.10
ML program	0.13	.06	.11*	.09	.06	.08
Internet use				-.02	.02	-.04
Information motive				.12	.03	.18***
Media knowledge				.44	.15	.16**
News analysis				.03	.01	.20**
Ad analysis				-.01	.01	-.04

Note. ML = media literacy.

Total $R^2 = .17$. For Model 2, $\Delta R^2 = .09$.

* $p < .05$, ** $p < .01$, *** $p < .001$.

in civic life. By contrast, information-seeking motive ($\beta = .18, p < .001$) makes a strong contribution.

When controlling for both time and motives, media literacy analysis skills are associated with civic engagement. The ability to analyze and evaluate a news article ($\beta = .20, p < .01$) has an additional (and sizable) positive impact on civic engagement intention. To a lesser degree, knowledge about media ($\beta = .16, p < .01$) also contributes to intent to actively participate in civic life. However, the media literacy competencies involved in analyzing an advertisement do not contribute to adolescents' intention toward civic engagement.

DISCUSSION

Many scholars claim that much of the most exciting work in digital and media literacy education is now occurring in after-school, community-based, or summer programs, supported by foundations, where projects "too controversial for schools" can be examined as laboratories for future innovation (Levine, 2008, p. 127). For example, since 2006, the John D. and Catherine T. MacArthur Foundation has invested \$85 million in support of digital media and learning, including large-scale ethnographic research on how youth participate in digital media outside of school.

Considerably less attention has been focused on chronicling the changes now underway in some of the more than 15,000 American public school districts; in programs like the one we report on in this study, digital and media literacy initiatives are being developed not by academics and consultants and philanthropic initiatives but by school administrators and K-12 faculty themselves, supporting by existing funding public school mechanisms. In these schools, educators are finding innovative ways to bring digital and media literacy education into the classroom in the context of regular instruction in English, history, health, and the fine and performing arts. Without external funding, digital and media literacy programs are part of the

mainstream of American public education. These types of school-based initiatives offer fertile ground to empirically and naturalistically explore the complex relationship between media literacy education and its contribution to adolescent development and academic achievement.

By finding a statistically significant association between media literacy and civic engagement among a large and diverse sample of American high school students enrolled in a single public high school, we can say with some confidence that media literacy programs have potential to support the development of news analysis skills, build background knowledge of media institutions, audiences, messages and effects, and thus contribute in an important way to the development of meaningful civic engagement among adolescents. The ability to analyze and evaluate media messages either online or offline is likely to stem from being able to ask and answer critical questions about the purpose, target audience, and subtext of messages. Such work is aided, of course, by a comprehensive understanding of the major components of the mass media: their business models as well as their content, genres, and story formulas. These are, simply put, fundamental knowledge and skills that are an essential part of contemporary education today.

As demonstrated by other scholars, we found that time measurements of adolescents' Internet usage give at best a partial insight into the complex behaviors at work in the development of citizenship skills. The intent to engage in civic participation seems to be most strongly associated with both the motivational drive to seek out information and the ability to understand and analyze news media. This does not imply that we completely disagree with Putnam's argument that electronic entertainment might be partly responsible for the erosion of civic life. We found that time spent online is negatively associated with civic participation. And indeed, several underlying mechanisms seem plausible here. First, one should not forget that most young digital audiences use the web for chatting and exchanging instant messages with friends, for social networking, for playing video games, or for entertainment sites. In this way, digital media are cultural forms that are inextricably connected with more traditional print and audiovisual mass media (Buckingham, 2007a, 2007b, 2007c). True, as argued by scholars like Henry Jenkins (2006), these activities might be sometimes civic in nature. Still, it is likely that, for adolescents, some Internet activities compete with more traditional social and civic activities outside the home. Even if informational uses of the Internet have a positive impact, the consequences of recreational use might sometimes be less desirable. As with television, radio, or print media, some websites are bound to cultivate more or less civic-minded patterns among users. Based on the evidence from this study, we argue that to promote civic engagement, especially among less academically well-prepared students, it is important to support students' intellectual curiosity and their ability to critically analyze and evaluate media messages through school-based media literacy education.

Our data indicate that media literacy competencies like analyzing news and advertising are not uniformly distributed among adolescents. Media literacy education programs per se are not a magic bullet solution that will automatically eliminate the substantial gap between academically talented young people and their less privileged counterparts. By discovering that media literacy students in the open-admission program, on average, perform worse in analyzing print news media as compared with students enrolled in other open-admission academies, we appreciate that unmeasured differences in reading comprehension and print literacy skills probably play a significant role in the development of adolescents' critical analysis skills. In fact, reading comprehension and writing skills are of fundamental importance in a digital age. In developing

educational programs that support adolescent civic engagement, it will be important to ensure that digital and media literacy programs provide rich and sustained learning opportunities for engagement in reading comprehension, textual analysis, close reading, and writing composition activities.

CONCLUSION

In many ways, we had a near-ideal naturalistic setting to examine the relationship between ability grouping, civic engagement, and media literacy education programs. Although we must be cautious of generalizing beyond our Mid-Atlantic urban high school population, the large sample consisted of a heterogeneous, racially diverse group of students where we could examine students with varying levels of academic achievement and exposure to two types of media literacy educational programs. We found important differences in media knowledge, news analysis, and advertising analysis skills among students with differential levels of academic performance. Not surprisingly, smart, academically gifted teens tend to be more media literate than their less academically talented peers. Yet, despite these important differences, even when controlling for both time spent with the Internet and information-seeking motives, news analysis skills make an important contribution to advance adolescent civic engagement.

Nonetheless, our research design had some limitations. First, because we used a naturalistic quasi-experimental design it was not possible to randomly assign students to treatment condition. The data show that, after controlling for participation in a media literacy program, information motives, media knowledge, and news analysis independently contribute to civic engagement. However, the underlying mechanisms are difficult to assess, limiting our ability to make strong claims about causality. For example, it is possible that participation in a media literacy program is influenced by a predisposition toward information seeking, thus leading to selection bias. We also recognize the limitations of our existing measures and the need for additional measures. We did not measure the actual levels of civic engagement of adolescents; instead, items assessed students' intent to participate in the future. Also, we did not measure those forms of social action that make use of digital or social media. We deliberately approached media literacy as the ability to critically analyze news and advertising instead of considering other forms of media literacy education, including creative media production competencies. We agree with other researchers on this issue who note, "How the different forms of literacy interact and support each other is a key question for future research, given today's complex and convergent media and information environment" (Livingstone & Helsper, 2010, p. 324).

Readers may wonder what specific aspects of curriculum and instruction in media literacy are associated with civic engagement. The media literacy programs we studied were broad, year-long intensive learning experiences with multiple faculty participating and where students engaged in a wide range of activities, including library research, viewing and discussion, writing, multimedia production, public speaking, and collaborative learning. Therefore, we could not deduce what precise elements of the educational program itself may have contributed to or interfered with the development of media knowledge, news analysis, advertising analysis, or civic engagement. Carefully conducted case studies and experimental designs are needed to further tease out which types of instructional activity best support the development of civic engagement.

In the United States, 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 (Hobbs, 1998, 2004; Kubey, 2003, 2004). At the same time, support for digital and media literacy education is growing in after-school community-based programs (Levine, 2008). That said, a large variety of approaches to media literacy education exists. For instance, some American media educators tend to focus on public health issues such as alcohol and tobacco use. That is, they try to make pupils aware of marketers' strategies, such as using image-based and affect-laden appeals (Austin, Pinkleton, & Funabiki, 2007; Pinkleton, Austin, Cohen, Miller, & Fitzgerald, 2007; Primack, Sidani, Carroll, & Fine, 2009). Evidence from our study suggests that, however valuable the ability to analyze and evaluate an advertisement, it does not automatically translate into civic engagement or social action. Such programs may be designed with civic goals in place, of course. Educators may want to develop stand-alone programs (instead of integrating media literacy education into existing educational programs) in order to promote specific types of learning outcomes, including full and active participation in the life of communities, the nation, and the world. Such programs would have, at their center, activities of the sort described by Rheingold (2008), such as the use of student-composed blogging as a form of connected writing, the practice of developing skills of argument by responding to news media messages, and contributing to public discourse through collective action, including meetings, petitions, boycotts, and letters to the editor.

To summarize, we measured adolescents' knowledge about mass media and their ability to critically analyze news and advertising to better understand the complex relationship between ability grouping, Internet use, information-use motives, and civic engagement among young people in a large, urban public high school. Our findings support the growing demand for policymakers, educators, and community advocates to embrace media literacy as an important resource to fulfill the promise of digital citizenship.

ACKNOWLEDGMENTS

We acknowledge the high school administrators and faculty who invited us into their school and Armando Morales and Jonathan Friesem, who assisted with data coding.

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