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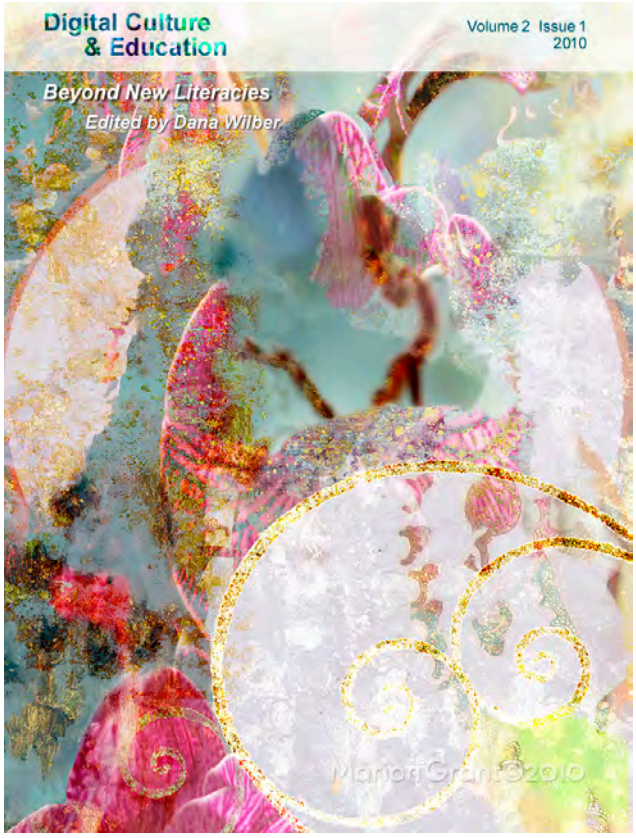


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# Talking past each other: Academic and media framing of literacy

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# Talking past each other: Academic and media framing of literacy

Katherine Ognyanova

## Abstract

*The technological and social shifts of the past several decades have brought about new modes of learning, participation and civic engagement. As young people work, play and socialize in online spaces, the academic community is exploring the challenges and possibilities of education in the digital age. New definitions of literacy emerge to address the importance of digital skills, play and collaboration. This paper explores the diverging perspectives on literacy adopted by new media scholars and old media outlets. Thematic coverage in the New York Times from the last four years is analysed and compared to academic texts produced in the same period. Measures of salience for literacy as a topic are used in conjunction with framing analysis based on semantic mapping. The results of this study suggest that mainstream media employ a legacy literacy frame, stressing basic language competencies and traditional institutions. That perspective is markedly different from the academic discourse, which emphasizes a host of new social, technological and critical evaluation skills.*

## Keywords:

*New literacies, new media literacy, media, framing, semantic analysis*

## Background: Academic Perspectives on Literacy

Early notions of literacy linked the term to textual practices grounded in the development of print culture. It encompassed basic abilities - reading and writing - seen as tools of communication and learning, but also as markers of social status. Beginning in the 1970s, literacy became institutionalized and increasingly adopted as a formal educational ideal (Lankshear & Knobel, 2006). At the same time definitions of literacy expanded to include a variety of new skills and practices. The word literate, even when used informally, began referring to more than just "able to process and produce written language". Scholars taking a socio-cultural perspective on literacy suggested that it had to be considered within the broader framework of social relations and their cultural and historical context. In an overview of digital media and learning, Gee (2009) makes a useful distinction between two relatively recent shifts in literacy studies. The first one involves a move towards exploring literacy as a sociocultural achievement rather than a cognitive one; the second suggests looking into new types of literacy that go beyond print.

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The field of media literacy appeared in part as a result of fears that mass media and popular culture may have an adverse effect on the audience, particularly on some of the traditionally less educated, "vulnerable" social groups (Sefton-Green, Alvermann, Gee,

& Nixon, 2006). Those included ethnic minorities, but also women and children. Contemporary view on media literacy has moved away from this notion of a defenseless mass audience, although the concern with critical evaluation of media messages remains central. Livingstone (2003) has suggested that literacy should refer to the interpretation and production of any mediated symbolic text - a definition that can be applied across formats, from books through television to online content. This formulation incorporates the ability to access, analyze, evaluate and create messages in a variety of contexts.

In the last twenty years, both the media system and society as a whole have gone through a host of significant transformations. New technologies allowed for unprecedented distribution flexibility; recombination capabilities; capacity for speed, volume and complexity (Castells, 2005). Social transformations involved, among other things, processes of globalization and the emergence of a constantly connected digital generation, embracing values of participation and collaboration. Changes in information production, dissemination and reception once again altered the way scholars think about media - and about literacy.

The new media literacies (NML) paradigm emerged in response to changing modes of engagement and interaction in the online space. Work in that area draws attention to the role of individuals as active participants in the creation and distribution of cultural goods (Jenkins, 2006).

The NML perspective is grounded in traditional media literacy studies and shares with them an emphasis on reflexivity and critical evaluation skills (Gee, 2010). There is, however, an important shift in focus. For NML, what is central are the opportunities and challenges faced by education in an increasingly complex digital media environment (Hobbs & Jensen, 2009).

NML has close ties with a whole family of paradigms exploring the role of digital tools as both objects and instruments of learning. Among them are Internet literacies, digital literacies, 21st century literacies, multiliteracies, information literacy, and computer literacy. All of those fields fall under the broad umbrella of new literacies (Coiro, Knobel, Lankshear, & Leu, 2008). Studies in that domain come from many different disciplines but are brought together by a common focus on the social use of technology. According to Coiro et al, new literacies are fluid, multiple, multimodal, and multifaceted. Rather than being a single construct, literacy is seen as a dynamic network of historically, socially, and culturally situated practices (Jewitt, 2008).

Exploring the academic discourse around literacy in the digital age, this paper focuses primarily on the authors and works associated with the MacArthur Foundation initiative on Digital Media and Learning. The five-year, $50 million initiative launched in 2006 and set out to investigate how digital media are changing the way young people learn, play, socialize, and participate in civic life (The MacArthur Foundation, 2009). Among other things, efforts are dedicated to the development of documents that can help educational institutions rethink their current teaching practices. The initiative book series are quite diverse in theoretical and disciplinary approaches. There is, however, an underlying common understanding of the importance of digital media - both as a subject of study and as a learning environment. According to Jonathan Fanton, president of the MacArthur Foundation, "the ability to negotiate and evaluate

information online, to recognize manipulation and propaganda and to assimilate ethical values is becoming as basic to education as reading and writing" (Fanton, 2007).

Looking into the range of issues the MacArthur series and related works cover, we can tentatively identify five broad, interrelated (often overlapping) areas of inquiry:

- New media literacies → skills
- New media literacies → challenges
- New media literacies → identity construction
- New media literacies → participation and civic engagement
- New media literacies → educational institutions/practices

A brief overview of some of the issues discussed in those areas follows below.

## *New media literacies: New skills*

In their white paper, Jenkins et al (2006) identify a number of social skills linked to the idea of new literacies in a participatory culture. Those include:

- Skills oriented towards interaction with and within the environment, improvisation and experimentation with one's identity and surroundings (play and performance).
- Skills related to the ability to locate, access, meaningfully alter and redistribute content (networking and appropriation)
- Skills related to the ability to store, process and retrieve information - individually, with the help of digital tools or within a group of people pooling knowledge towards a common goal (distributed cognition, collective intelligence).
- Skills related to the ability to shift attention between multiple streams of information or follow a storyline across multiple media formats (multitasking, transmedia navigation)
- Skills related to the ability to process, interpret and model information (simulation, visualization)
- Skills related to the ability to critically evaluate information and successfully navigate diverse environments (judgment and negotiation)

## *New media literacies: Challenges*

Scholars have approached the challenges of new media literacies coming from a broad range of perspectives. A major point of concern is the inequality in terms of access, participation opportunity, experience or knowledge - all part of what Jenkins et al (2006) call the participation gap. Young people are empowered as consumers, but sustained interest in content creation is not that common (Buckingham, 2007c; Selwyn, 2009). According to Hargittai & Walejko (2008), neither is sharing of content. Youth disengagement, decline in political knowledge, motivation and efficacy are also a central theme here (Bennett, 2007; Livingstone, 2007).

Another problematic area regards the ability to critically evaluate information in digital spaces - something that students are still struggling with (Flanagin & Metzger, 2008). This also leads to problems with credibility and trust in an online environment. A

related group of concerns involves ethics in cyberspace, online privacy, safety, issues of authorship and ownership (James, et al., 2008).

### *New media literacies: Identity construction*

In Almost all forms of participation on the Web have some aspect of identity management and impression formation. Online self-presentation involves strategically selecting identity cues and making them available to an imagined audience. This is particularly well studied in the context of social network sites (boyd, 2007; boyd & Ellison, 2007) and massively-multiplayer online games (Gee, 2003).

Ito et al (2008) point out that media content is increasingly central to practices of identity construction and the efforts of young people to negotiate their sense of self in relation to their peers.

James et al (2008) talk about new media as a space for identity play and exploration. Online, adolescents can experiment performing gender, age, race, ethnicity or social role in a low-stakes environment. Those identity rehearsals and the feedback they elicit can potentially also trigger changes in aspects of the offline self. Identity management in a digital environment is linked to media literacy skills like play and performance, but also negotiation and judgment. Young people should have the ability to navigate online spaces, adjusting their levels of self-disclosure to protect the privacy of their personal information. Decisions to assume an imagined identity should be made with view to ethical norms and accepted social practices of the particular digital environment.

### *New media literacies: Participation and civic engagement*

Jenkins (2006) explores the potential of participatory culture – a culture which provides social support and interaction, encourages creating and sharing and promotes informal learning. Participation is linked to membership in online communities and collaborative problem-solving teams, as well as to the production or circulation of media content. The capacity for civic engagement is another integral part of participatory culture. The digital tools used for creative expression, collaboration, connecting with peers or media distribution can also be leveraged to exercise active citizenship (Rheingold, 2007). One function of media literacy education can then be to provide students with the skills to do that. To better understand digital participation, Livingstone (2007) suggests that scholars in the field should look into analytic strategies to unpack the successes and failures of participatory platforms targeted to young people.

The concept of civic engagement itself is a subject of discussion. Two conflicting paradigms see youth as either very active and engaged (in online communities and peer networks) or passive and disengaged (in voting and following political news). Bennett (2007) argues that conflicting definitions of citizenship, of the structure and shape of civic duty are what causes the tension between the two sides of the youth disengagement debate.

### *New media literacies: Educational institutions/practices*

A recurring theme in new media literacies texts is the application of the ideas developed in the field to formal educational practices. The place of new technologies in learning, as well as the role of institutions in young people's attempts to navigate a digital environment, are starting points in that discussion (Ito, et al., 2008). As Buckingham (2007a) points out, today there is a striking contrast between young people's experiences with technology outside of the classroom and the learning that takes place in schools. The two environments differ not only in content and skill emphasis, but also in their dominant modes of engagement – active vs. passive, collaborative vs. individual. Jenkins et al (2006) articulate three core issues that the educational system needs to address, linked to youth's opportunities for access and participation, capacity for critical evaluation of media content and grasp of ethical norms needed to cope with the complex online social environment. Failing to support, respond or engage with young people's online activities can clearly have a range of negative consequences. Unfortunately, at present many institutions seem to be underestimating the risks (Livingstone, 2007).

## Mainstream Media Literacy Coverage

If the ideals of new media literacies promoted by the MacArthur foundation are to have an impact, they have to escape the confines of the academic community and reach educators, policy-makers and the general public. Mainstream media is an important space where new notions of literacy can potentially be debated and made accessible to a broader audience. Legacy news outlets still have the power to influence public opinion and shape perceptions of issue relevance. Jenkins (2006) phrases this in terms of the old media's ability to amplify or marginalize issues, channeling public debate around certain aspects of a problem and dismissing others.

Traditional news sources are also crucial in another context: they have the ability to convey the importance of new media skills to parts of the population that are still isolated from online participation. As of the end of 2008, a quarter of all Americans did not have Internet access and so relied solely on traditional media and interpersonal contacts to stay informed (Kennedy & Wellman, 2008). The percentage was much higher for certain ethnicities and age groups.

Major news outlets have direct impact on citizen opinion, but they also heavily influence new media content. Studies of political blogs have shown that they tend to mirror the agenda of mainstream outlets (Lee, 2007) and overwhelmingly use major media as sources (Messner & DiStaso, 2008).

For the purposes of narrowing down the scope of the analyzed materials, the present paper focuses on the literacy coverage of The New York Times. The publication is still known as the American newspaper of record and has been identified by scholars as a key gatekeeper in national news coverage (Kiousis, 2004). Research has shown that the coverage of the The New York Times influences the news agenda of many other traditional news sources (Dearing & Rogers, 1996; Golan, 2006). As for impact on new media, the newspaper is among the "champion players in the blogosphere" (Kelly, 2008, p.5) as one of the sites that bloggers most often link to.

Using the New York Times coverage as a basis for the analysis, this paper sets out to complete two related tasks. One involves looking for indicators of increased salience of literacy coverage, which may be expected if news outlets are beginning to participate in

the conversation around the new media literacies. The second and more important task is the comparison of media and academic perspectives on literacy.

## Literacy: Salience in Media

Two basic indicators can serve as measure of salience for literacy as a topic covered by the New York Times. One is the number of articles on the subject published each year; the other is their average length. The services of LexisNexis Academic (www.lexisnexis.com) were used to compile the data. New York Times materials which appeared in the results of a search with key term literacy were included in the analysis.

The results show no significant increase in the publication's interest in that topic between 1999 and 2009. While the length of the articles is relatively constant (Figure. 1), their number (Figure. 2) is decreasing. The decrease is even more noticeable when we look at the literacy coverage as a percent of the total articles published by the newspaper (Figure. 3). One additional measure compiled based on LexisNexis data was the percent of the literacy-related articles that focus on foreign countries (Figure. 4). Inspecting the articles showed that those overwhelmingly deal with issues of developing countries where literacy (in this case referring to basic reading/writing skills) of the population is an important progress indicator. That type of articles as a percent of all literacy coverage went from 18% in 1999 to 30-31% in the last couple of years.

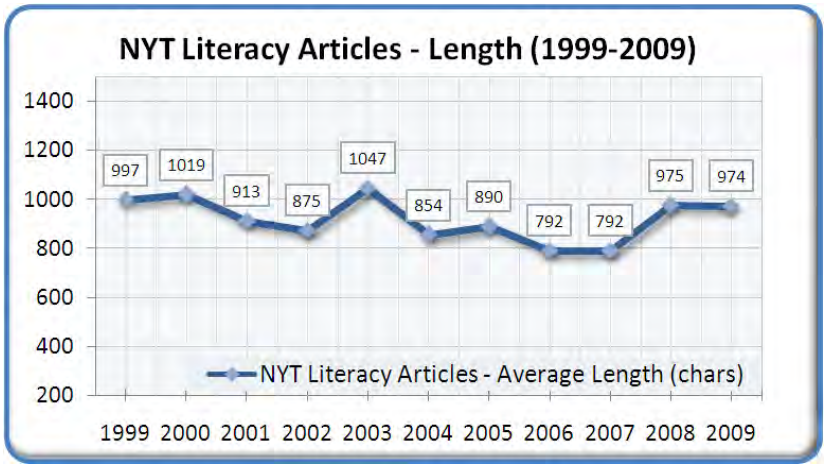



**Figure 1**

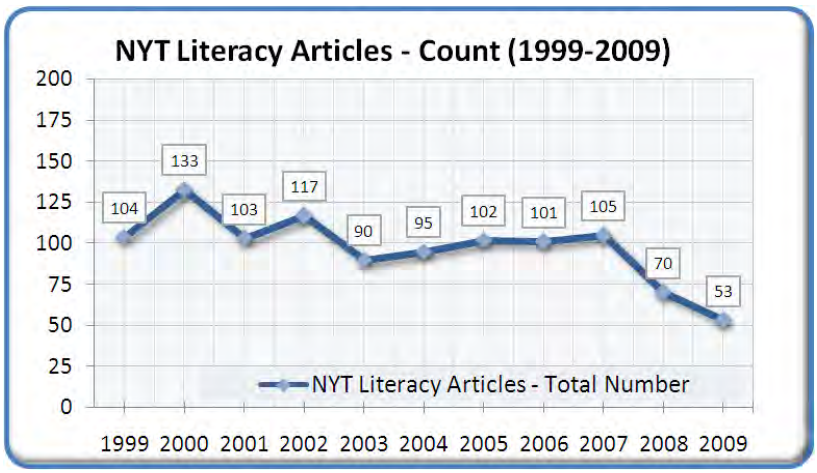



**Figure 2**

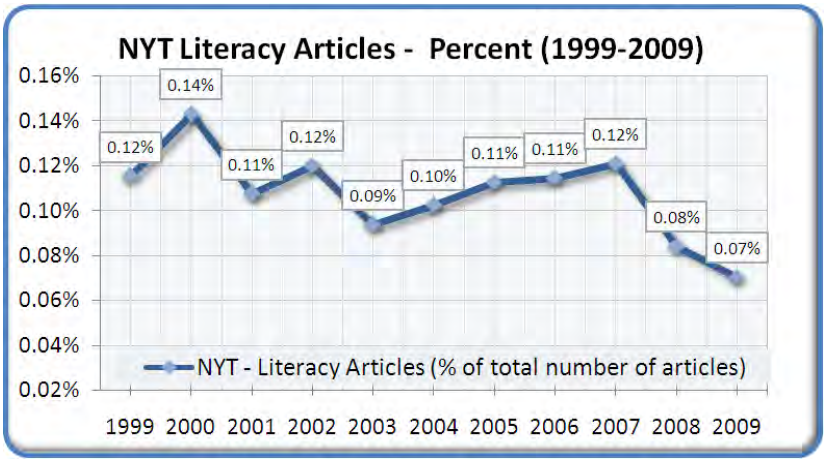



**Figure 3**


**Figure 4**

## Literacy: Frame Comparison

*Framing and semantic maps*

The circle of scholars working with the MacArthur Foundation to promote new learning practices envisions a set of literacies built around digital skills, participation, collaboration and civic engagement. In order to test whether the New York Times coverage tends to adopt a similar perspective on literacy, this study uses framing analysis based on semantic mapping.

In the context of media effects, framing refers to the idea that news outlets affect the way we think about issues by emphasizing some aspects and interpretations while dismissing others. According to its early proponents (Goffman, 1974), framing serves as a parsing tool aiding the understanding of everyday events and social interactions. The mental models constructed and activated through the use of frames are further employed in selecting appropriate courses of action.

In a study of media attitudes and public opinion on nuclear power, Gamson and Modigliani (1989) introduce the concept of media package. As the audience needs a way

to make sense of complex ideas and competing explanations, for issues discussed in the public sphere a discourse evolves to provide shared meanings. The media package consists of all the symbolic devices involved in generating that discourse. For many issues, there are several competing packages providing different interpretation. According to Gamson, a frame is the central unifying idea of a package, the organizing principle holding together all other elements. The frame sets a dominant perspective that will determine how a media text is interpreted. It serves as an organizing scheme, helping the efficient processing of media content.

Looking for dominant framing in texts on literacy, we can expect to see two diverging perspectives with different central values. One is grounded in the conventional literacy of the print era - emphasizing work with written text, focusing on institutions, endorsing the traditional hierarchical mode of learning. The other, emerging frame of new media literacies promotes digital skills, creative expression, collaboration, participation and play. Those two central constructs will be referred to here as new literacy frame and legacy literacy frame.

Most of the research done in the area supports the assumption that media framing has a powerful impact on public opinion (Shen & Edwards, 2005). Gamson's model involving a discursive process of collective sense-making about public policy issues gives other scholars (Pan & Kosicki, 2001) grounds to make the argument that framing is an essential part of public deliberation. In the context of literacy this becomes particularly relevant, as the frame one adopts will subsequently guide a range of important decisions. Different views of the skills and important issues around literacy can affect educational policy-making, preferred modes of teaching and learning, school curriculum content and parenting values.

Recognizing the significance of frames as socially shared, persistent organizing principles that structure meaning (Reese, 2007), scholars in media and political studies searched for ways to access those structures. In order to identify the frame of a text, Entman (1993, p.52) suggests looking for the presence of absence of certain "keywords, stock phrases, stereotyped images, sources of information and sentences that provide thematically reinforcing clusters of facts or judgments". The notion that we can examine a text to identify key concepts and clusters of ideas is central to semantic analysis (SA) - an automated method used in framing research.

Semantic analysis is based on the premise that knowledge can be presented as networks of words and their relationships to each other in a given context (Carley, 1993). SA software identifies the important concepts in a text based on the frequency of their occurrence. A number of words that appear frequently, but are not central concepts (transitive verbs, prepositions, conjunctions, etc.) are excluded from the analysis (Murphy & Maynard, 2000). A network (or semantic map) is constructed based on the terms which have been identified as important. One of the ways in which links between words can be assessed relies on the frequency of their proximate co-occurrence. If two concepts are related in the context of the framing applied to the text, they are also likely to frequently appear within several words of each other (Doerfel & Barnett, 1999). Once the semantic map is compiled, it can be directly interpreted based on the researcher's knowledge of the domain - or used to derive other measures and perform different types of quantitative analyses (Rice & Danowski, 1993).

Semantic network analysis has theoretic foundation grounded in cognitive processes (Scott, 2005). Words are hierarchically clustered in memory - and their meaning is retrieved through associations with other words. If we assume that some patterns of those cognitive associations emerge in written text, semantic maps could be one way to capture them. In an attempt to do that, researchers have used this type of analysis to study political debates, organizational literature, media framing of genetic testing, nicotine, the SARS crisis, artificial sweeteners and more (Hellsten, Dawson, & Leydesdorff, 2009; Murphy, 2001; Murphy & Maynard, 2000; Samkin & Schneider, 2008; Tian & Stewart, 2005).

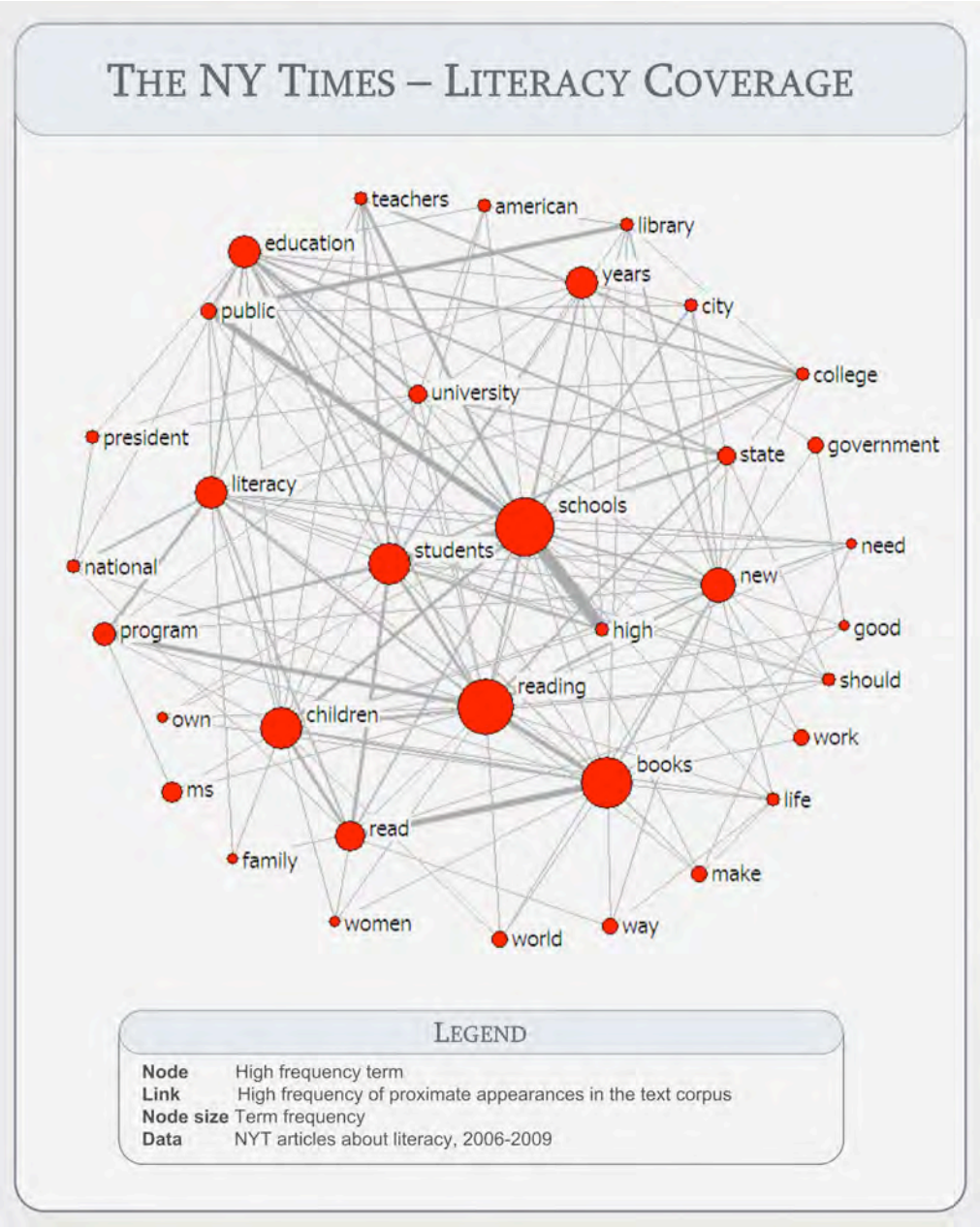
*Analysis of media and academic texts*

For the purposes of this study, semantic network analysis was used to examine and compare the dominant frames of two bodies of text. The Jenkins et al (2006) white paper "Confronting the challenges of participatory culture: Media education for the 21st century" was selected as representative of the academic discourse around new media literacies. The semantic map generated by that text serves as a model for a concept map built around the new literacy frame.

Two major factors prompted the selection of this academic work. The first one was impact - the white paper is a particularly influential work, central to the field of new media literacies (Gee, 2010). The second deciding factor was scope of representation. In order to capture a wide variety of relevant concepts, the study had to analyze a text exploring multiple aspects of media literacy. Selecting a paper focused on a single facet or problem would limit the resulting semantic map to a subset of all major concepts.
To look into media discourse, a second text corpus was compiled. It included New York Times coverage of literacy between Jan 1, 2006 and Dec 1, 2009. A total of 329 articles for that key term were acquired through LexisNexis Academic.

The main goal of the analysis was to test whether the New York Times has adopted in its coverage a frame similar to the perspective taken by the MacArthur Foundation Digital Media Learning initiative. Two software programs - WORDij (Danowski, 1993) and UCINET (Borgatti, Everett, & Freeman, 2002) were used to compile, analyze and visualize the two semantic networks. A table of differences between the text files in terms of frequency of word pairs was compiled (see Appendix A, Table 3). The in-degree and out-degree centrality (number of incoming and outgoing links) of concepts in the networks were calculated (see Appendix A, Table 2). A visualization of the relations between the top 35 concepts in both texts can be found on Figure 5 and Figure 6.

To test the similarity of the two networks, a QAP (Quadratic assignment procedure) was performed in WORDij. The networks had small in size, statistically significant negative correlation ($r = -0.17$, $p<0.001$).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Node High frequency term
Link High frequency of proximate appearances in the text corpus
Node size Term frequency
Data NYT articles about literacy, 2006-2009

**Figure 5**

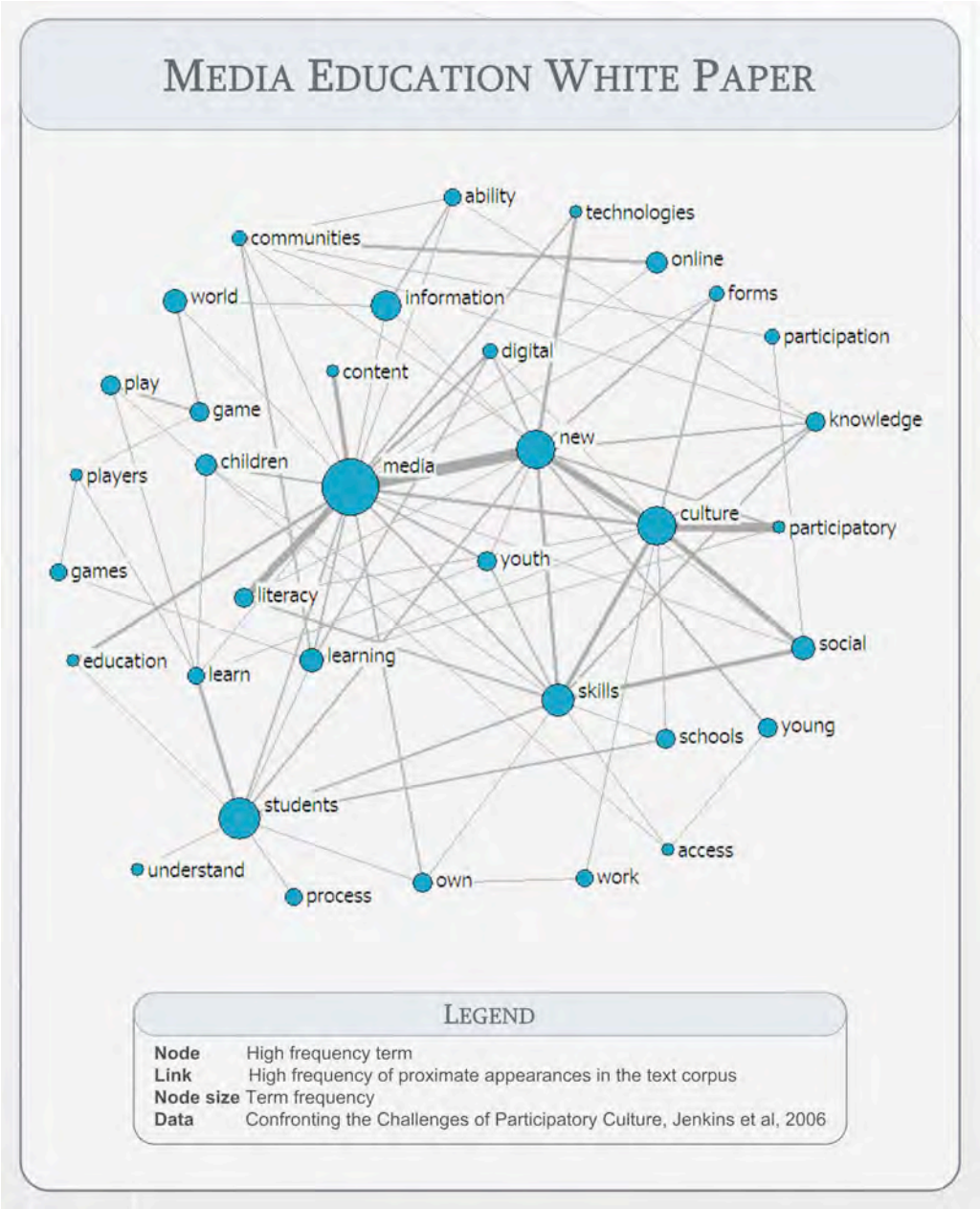


**Figure 6**

Both the statistical analyses and a visual expectation of the concept maps indicate a significant difference between the framing of literacy in the New York Times and the white paper on digital media and learning. The network generated by the white paper contains, as expected, clusters of concepts relevant to new modes of digital learning: media, culture, participation and communities; play, players and games; online, technologies, and information. The concept of literacy is, not surprisingly, connected to new media and social skills.

The newspaper coverage, on the other hand, clearly employs a legacy literacy frame. The most frequently occurring terms and terms pairs revolve around two main themes: (1) traditional literacy skills (reading, books) and (2) institutions that those skills are

historically associated with (family, school, college, university, library, government). The literacy concept here is linked to education, schools, reading and books.

The three most frequently occurring terms in the New York Times literacy coverage are *schools*, *reading* and *books*. The top concept pairs include *schools-students*, *read-write* and read-books. In comparison, top three terms for Jenkins et al are *digital*, *media*, and *learning* - and the top concept pairs include *participatory-culture*, *media-literacy* and *social-skills*. The newspaper's semantic map makes no reference to participatory or social skills, to collaboration or play. Terms like *internet*, *web*, *digital*, *technology*, and *online* do not appear in the top 100 most frequent concepts in the newspaper coverage.

There is one important note to be made here. This study does not imply that the New York Times never covers issues related to students and digital tools, online games, social networks or collaboration platforms. On the contrary, those are likely to be prominent topics appearing quite frequently in the publication. What this analysis shows is that they are not discussed in the context of literacy. As a result, young people's digital practices are excluded from debates about formal education. If the newspaper covers privacy on Facebook, this is not seen as an issue related to teaching, learning, or school curriculum.

## Conclusion

The results of this study indicate that the coverage of the New York Times employs a legacy literacy frame, stressing basic language competencies and traditional institutions. It ignores the diverse new forms of learning grounded in experimentation, collaborative problem-solving, play and creative expression. The newspaper perspective is markedly different from the new media literacies academic discourse which emphasizes a host of new social, technological and critical evaluation skills.

The two literacy frames employed by the New York Times and the MacArthur Digital Media and Learning initiative can be seen as at least partially mapping onto two distinct mindsets outlined by Lankshear and Knobel (2006). Similar to the frames in media effects literature, mindsets are clusters of assumptions, beliefs, values and practices which affect interpretations and guide actions. The first of the two mindsets described in the New Literacies book assumes that the world today is essentially the same as it was in the Industrial era. There are more - and more sophisticated - technologies available to people, but those technologies are integrated into roughly the same social, economic and cultural relationships. Contemporary practices are still seen as grounded in long-standing assumptions about the physical world, printed text, authorship, ownership, etc. As far as literacy is concerned, the New York Times coverage seems to be grounded in a somewhat similar mindset. The main focus is on traditional educational and social institutions. The practices of learning are linked to the reading of printed books. Technology is rarely mentioned in the context of literacy, new social spaces and practices on the web are all but completely absent from the discourse.

The second mindset described by Lankshear and Knobel (2006) sees the world today as qualitatively different. It acknowledges the transformative potential of technology and recognizes possibilities for new modes of social interaction, economic transactions and cultural expression. It is debatable whether this second mindset should be linked (something that Lankshear and Knobel suggest) to specific age groups or to O'Reilly's (2005) Web 2.0 ideas. It can, however, be associated with the values of participatory

culture (Jenkins, et al., 2006), a concept which shifts the focus from the affordances of new technology to the communities built with and through it.

As Lankshear and Knobel (2006) point out, while the second framework they outline allows for new literacies, the first one does not. Adopting the legacy mindset as a central frame in their coverage, mainstream media fail to address the social, technological and cultural forces that are changing the practice of learning. As educational institutions still endorse conventional literacies, the gap between young people's experiences within and outside of school is expanding (Buckingham, 2007b). Media coverage contributes to that process by treating formal education and online activities as two separate, independent worlds that young people can magically move between. Bringing those two worlds together, at least in the news, may be a small step towards a real change in our understanding of classroom learning.

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## Biographical Statement

*Katherine Ognyanova is a Doctoral Candidate in Communication at the University of Southern California. She does research with a broad focus on transformations of the media system and social aspects of technology. Katherine is interested in the application of network analysis methods to communication and media studies. As a research assistant at USC, she works on projects exploring scientific collaboration and virtual team formation and studies the impact of new media on engagement and intergroup dialogue in local communities. Katherine holds a B.Sc. in Computer Science and M.A. in Virtual Culture from the University of Sofia, as well as an M.A. in Communication from USC.*

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# Appendix A

**Table 1: Top 15 most frequently used terms in the New York Times literacy coverage and Jenkins et al's white paper**

| Frequency - Top 15 Terms | | | |
|---|---|---|---|
| The New York Times | | White Paper | |
| 1 | schools | 1 | digital |
| 2 | reading | 2 | media |
| 3 | books | 3 | learning |
| 4 | children | 4 | participatory |
| 5 | students | 5 | culture |
| 6 | new | 6 | education |
| 7 | education | 7 | new |
| 8 | years | 8 | technologies |
| 9 | literacy | 9 | young |
| 10 | read | 10 | social |
| 11 | late | 11 | information |
| 12 | program | 12 | skills |
| 13 | ms | 13 | participation |
| 14 | state | 14 | core |
| 15 | university | 15 | literacy |

**Table 2: Top 15 most central terms in the New York Times literacy coverage and Jenkins et al's white paper**

| Degree Centrality - Top 15 Terms | | | |
|---|---|---|---|
| The New York Times | | White Paper | |
| 1 | reading | 1 | new |
| 2 | schools | 2 | media |
| 3 | students | 3 | students |
| 4 | literacy | 4 | skills |
| 5 | children | 5 | social |
| 6 | books | 6 | participatory |
| 7 | new | 7 | culture |
| 8 | education | 8 | children |
| 9 | high | 9 | digital |
| 10 | public | 10 | core |
| 11 | read | 11 | youth |
| 12 | state | 12 | literacy |
| 13 | federal | 13 | game |
| 14 | health | 14 | learning |
| 15 | university | 15 | ability |

**Table 3: Comparative frequencies of term pair occurrence in the New York Times literacy coverage and Jenkins et al's white paper**

| Term Pairs - Comparative Frequencies in the NYT and the Jenkins et al White Paper | | | | | | |
|---|---|---|---|---|---|---|
| | Term Pair | NYT Frequency | White Paper Frequency | NYT Proportion | White Paper Proportion | Z-Score* |
| 1 | new media | 7 | 43 | 0.001 | 0.057 | -19.67 |
| 2 | participatory culture | 0 | 34 | 0.000 | 0.045 | -19.14 |
| 3 | media literacy | 0 | 29 | 0.000 | 0.038 | -17.67 |
| 4 | new culture | 0 | 22 | 0.000 | 0.029 | -15.38 |
| 5 | social culture | 0 | 19 | 0.000 | 0.025 | -14.29 |
| 6 | social skills | 0 | 17 | 0.000 | 0.022 | -13.52 |
| 7 | skills culture | 0 | 15 | 0.000 | 0.020 | -12.70 |
| 8 | media content | 0 | 14 | 0.000 | 0.018 | -12.27 |
| 9 | digital media | 0 | 13 | 0.000 | 0.017 | -11.82 |
| 10 | media education | 0 | 13 | 0.000 | 0.017 | -11.82 |
| 11 | new technologies | 0 | 13 | 0.000 | 0.017 | -11.82 |
| 12 | core skills | 0 | 10 | 0.000 | 0.013 | -10.36 |
| 13 | media culture | 0 | 10 | 0.000 | 0.013 | -10.36 |
| 14 | online communities | 0 | 10 | 0.000 | 0.013 | -10.36 |
| 15 | skills new | 0 | 10 | 0.000 | 0.013 | -10.36 |
| 16 | new forms | 0 | 9 | 0.000 | 0.012 | -9.83 |
| 17 | new participatory | 0 | 9 | 0.000 | 0.012 | -9.83 |
| 18 | core culture | 0 | 8 | 0.000 | 0.011 | -9.27 |
| 19 | forms culture | 0 | 8 | 0.000 | 0.011 | -9.27 |
| 20 | game world | 0 | 8 | 0.000 | 0.011 | -9.27 |
| 21 | new knowledge | 0 | 8 | 0.000 | 0.011 | -9.27 |
| 22 | digital learning | 0 | 7 | 0.000 | 0.009 | -8.67 |
| 23 | game play | 0 | 7 | 0.000 | 0.009 | -8.67 |
| 24 | information ability | 0 | 7 | 0.000 | 0.009 | -8.67 |
| 25 | learning communities | 0 | 7 | 0.000 | 0.009 | -8.67 |