



Developmentally appropriate New Media Literacies: Supporting cultural competencies and social skills in early childhood education

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Abstract

Young children explore their world through manipulatives, playing with ‘technology’ that may or may not be digital. To this end, I offer an exploration into how the existing framework of the New Media Literacies (NMLs) paradigm set forth by Henry Jenkins (2006) in *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century* might be applicable to early childhood education. For the purposes of this paper, I focus on three of the twelve NML skills (*play, distributed cognition and transmedia navigation*) and how they might each be reflected in the interplay between digital and non-digital media within Reggio Emilia-inspired teaching and learning. Aligning the discussion of young children’s media use with NMLs might allow for greater examination of the potential positive benefits of digital and non-digital media and technology.

Keywords

digital media, early childhood education, New Media Literacies, Reggio Emilia-inspired practices, technology

Introduction

There is, to say the least, uncertainty among researchers, parents and early childhood professionals about how technological, electronic and screen-based tools can best coexist in children’s daily lives alongside traditional non-digital

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tools, implements and manipulatives. For example, as evidenced by recent discussions regarding digital e-books as compared to analogue print books for young children. Historically, much of the literature on young children and media has dealt with the negative effects of mass media, as well as how parents and educators might provide children with the means necessary to protect themselves from these harmful aspects. However, these conversations deal less often with the social, physical, intellectual, cultural and emotional growth that children may gain from experiences with media of various formats – mass, digital, non-digital or otherwise.

To this end, I offer an exploration into how the existing framework of the New Media Literacies (NMLs) paradigm, as set forth by Henry Jenkins (2006) in *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, might be applicable to early childhood education. Aligning the discussion of young children with NMLs might have a twofold benefit: (1) allowing for more flexible definitions of ‘media’ and ‘technology’ that encompass both digital and non-digital forms that are truly reflective of young children’s environments; and thus (2) allowing for greater examination of the potential positive effects of media and technology. The pace of technological innovation makes it difficult to study its effects on child development, which is why it might be increasingly important to study the ways in which children themselves continually make meaning in translating ideas between mediums, be they paper and clay, or digital photography and video. In light of the forthcoming revised National Association for the Education of Young Children (NAEYC) Position Statement on Technology and Young Children, which has not been updated since 1996, policy and pedagogy must focus on large- and small-scale ways to support the social skills and cultural competencies that will enable and empower young children of various social, economic and ethnic backgrounds to be successful in preschool, grade school and beyond.

The NAEYC Position Statement on Technology and Young Children is intended to support early childhood professionals in the USA in making informed decisions about how best to integrate media and technology into their classrooms (National Association for the Education of Young Children, 1996). Technology and media are now vastly different from those of 15 years ago and are far more ubiquitous. Educators, health professionals, parents and advocates for children’s health and well-being have voiced their caution regarding the NAEYC update (Campaign for a Commercial-Free Childhood, 2010; Cordes and Miller, 2000).

Additionally, in the position statement *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8*, the NAEYC cites that

‘with children spending more time in adult-directed activities and media use, forms of child play characterized by imagination and rich social interactions seem to be declining’ (National Association for the Education of Young Children, 2009). Such a statement, though, potentially oversimplifies what we define as media use, isolates it from meaningful play experiences, and may need to be re-conceptualized (Parette et al., 2010). When pedagogical interventions in early childhood education regarding media are aligned with developmentally appropriate practices, educational facilitators might consider what is known about child development and learning, about the child as an individual, and the social and cultural contexts in which children live.

The rationale for the NAEYC *Position Statement on Technology and Young Children* revision underscores three pressing concerns about the negative effects of media and technology on young children: (1) that media and technology are taking time away from activities that may seem more important to development and learning during the early years; (2) a fear that two-dimensional screen media may inherently affect brain development; and (3) the content of screen media, particularly as they relate to violence, stereotypes, advertising and obesity (Schomburg and Donohue, 2009a). The revision rationale acknowledges that there is a lack of definitive research on the effects of digital technology, positive or negative, on the development of young children, and emphasizes the problematic nature of making generalizations about ‘technology’:

- Too often we equate “technology” with electronic media only. Yet . . . technology is a term that can apply to any tool that helps us . . . to work . . . to learn . . . to play. [. . .] We might think of technology as providing digital manipulatives for children . . . tools that serve the same purpose as Froebel’s gifts or the Montessori materials . . . or any of the other materials that we provide for young children in our programs. Technology provides us with digital tools for learning. We should be asking: What can children learn from these tools? What can they DO with these tools? (Schomburg and Donohue, 2009a, p. 3)

We cannot fully discuss media literacy for very young children without looking at all of the materials with which they work, learn and play. Both digital and non-digital media can extend that which can be done. I propose that NMLs, which Jenkins (2006, p. 4) defines as ‘a set of cultural competencies and social skills that young people need in the new media landscape’, might provide a response to the crux of these evocative questions. As expressed in the Pearson Foundation’s white paper *The Digital World of Young Children: Impact on Emergent Literacy*, while the MacArthur Foundation has primarily sponsored

studies focused on older children, such as the Jenkins (2006) report, 'these efforts do provide valuable information about the digital media environments that surround preschoolers as they develop emergent literacy skills' (Blanchard and Moore, 2010, p. 5). Although the NML literature has, to date, not addressed early childhood education specifically, Jenkins (2006) proposes a guidepost for learning that, although not explicitly cited, seems indebted to the work of constructivist early childhood educational theorists, including Piaget, Vygotsky and Papert. As such, there may be important overlaps between NMLs and early childhood education, with the focus for this current study being on Reggio Emilia-inspired early childhood education programmes. This is not to say that NMLs do not apply to early childhood configurations based on other philosophies, such as the Head Start, Bank Street or Montessori models. However, for the purposes of this exploratory paper, I have chosen to begin with this school of thought.

Before directly comparing the NML and Reggio literature, I would like first to provide some context for the ways in which definitions of media, literacy and media literacy are evolving in education, as well as to outline the main points of the Jenkins (2006) white paper. I will also address the ways that, as it stands, the NML white paper does and does not address early childhood education.

Understanding 'new', 'media' and 'literacies' in early childhood education

Many educators and researchers have attempted to address the literacy skills that children will need to succeed in the 21st century and, in doing so, have discovered something of a paradox. As learning becomes more individual, it also becomes more social (Weigel et al., 2009). In our wider culture, personalized media coexist with social media in complex ways (Lévy, 1997). What makes NMLs 'new' is that they seek to bridge the gap between the sometimes-isolated conceptualizations of digital learning and social learning, focusing on the critical thinking and reflection skills necessary to participate actively in an increasingly complex digital media environment (Gee, 2010; Hobbs and Jensen, 2009). As Jenkins (2006, p. 4) writes: 'The new literacies almost all involve social skills developed through collaboration and networking. These skills build on the foundation of traditional literacy, research skills, technical skills, and critical analysis skills taught in the classroom.' NMLs do not displace traditional print literacy or mass media literacy; rather, they expand the possible interpretations and creations of texts.

The very idea of there being more than one 'medium' in which to be literate is rooted within a larger context, one that encompasses pluralistic conceptualizations of learning opportunities, including multiple ideations of literacy (Coiro et al., 2008; Kahn and Kellner, 2005; Kellner, 1998, 2006), as well as multiple intelligences (Gardner, 1983, 1993, 1999) and multiple levels of 'digital divides' (Ball-Rokeach and Jung, 2008; Norris, 2001). Young children's literacy development, of which print is certainly still central, can also include symbolic, technological and multi-modal ways of meaning making (Bearne, 2009; Burnett, 2010; Flewitt, 2008; Hill, 2007; Kress, 1994, 2003; Levy, 2009; Willett, 2005; Wohlwend, 2009). Many very young children are currently coming to preschool and other early childhood programmes with a different set of literacy skills than did previous generations (as did generations before them), although research into this age group is quite limited (Hagood, 2003; Hourcade et al., 2010; Lamont, 2008; Lankshear and Knobel, 2003; Marsh et al., 2005; Parette et al., 2010; Stephen and Plowman, 2008; Yelland, 2005). If we are truly to engage with all children when and where they are, then we must consider recognizing the relevance of multiliteracies.

The NML white paper and the early childhood gap

The NMLs address gaps in participation, transparency and ethics but, as it stands, there is a fundamental age discrepancy in the NML literature as early childhood education has not been brought into the conversation. Such a discussion might be a launching point for understanding how the NMLs could help to bridge early childhood and K-12 formal learning experiences.

Jenkins (2006) proposes NMLs in order specifically to address today's challenges to meaningful pedagogical intervention. The paper avoids generalizing today's children as 'digital natives', 'Generation 2.0' or 'iKids', for such labels may frame the digital experience as an inherently natural part of all children's lives (Buckingham, 2006; Livingstone and Helsper, 2007). Such assumptions ignore three core problems: (1) the *participation gap*, defined as 'the unequal access to the opportunities, experiences, skills and knowledge that will prepare youth for full participation in the world of tomorrow'; (b) the *transparency problem*, or 'the challenges young people face in learning to see clearly the ways that media shape perceptions of the world'; and (c) the *ethics challenge*, or 'the breakdown of traditional forms of professional training and socialization that might prepare young people for their increasingly public roles as media makers and community participants' (Jenkins, 2006, p. 3).

In terms of early childhood education, another hurdle might be a *scaffolding gap*, whereby young children from low-income backgrounds receive little direction or support from caregivers in their early literacy experiences, potentially widening the participation gap, even between children with equal access (Neuman and Celano, 2006). Other research suggests that children from middle- and upper-class families are not adequately supported in their new media use partly due to ‘moral panics’ regarding popular culture and digital technologies, as well as parental confusion regarding best practice and resources (Cohen, 1987; Marsh et al., 2005). Children across the socio-economic spectrum can benefit from caregivers that embrace an asset, rather than deficit, model of children’s daily encounters with a wide range of multimedia texts and practices (Robinson and Mackey, 2003).

In addition to reassessing the evolving definition of literacy and why we should teach media literacy, the majority of the Jenkins (2006) white paper focuses on describing and extrapolating the twelve core media literacy skills that constitute the NMLs. These areas include: *play, performance, simulation, appropriation, multitasking, distributed cognition, collective intelligence, judgement, transmedia navigation, networking, negotiation and visualization*. As described, these NMLs are more lifelong metacognitive skills for critical thinking than an explicit blueprint for digital technological literacy.

There are some theoretical and practical ways in which the NML white paper currently implicitly and explicitly addresses early childhood education. NMLs are informed by the constructivist, constructionist and experiential learning theories of Dewey, Piaget, Vygotsky and Papert. Emphasized throughout the paper is the crucial partnership between school, afterschool and home with regard to encouraging and nurturing children’s inherent intellectual curiosity. Of very young children, Jenkins (2006, p. 60) writes: ‘The first five or six years of a child’s life are formative for literacy and social skills, and parents can play an important [role] in helping children acquire the most basic versions of the skills we have described here.’ One example of this basic version of NMLs with regard to preschool-age children is described within the report’s section on performance, through a discussion of Wolf and Heath’s (1992) book *The Braid of Literature: Children’s World of Reading*. Jenkins (2006, p. 29) describes a reciprocal relationship between very young children’s real and imaginary worlds, noting:

- Children do not simply read books or listen to stories; they re-enact these narratives in ways that transform them, and in this process, the authors argue, children demonstrate they really understand what they have read. This play helps them to

navigate the world of stories and, at the same time, elements of stories help them to navigate real-world social situations.

The NML white paper highlights the importance of understanding each young child's learning and communication ecologies. While it identifies a range of NML activities that might be deployed in school or afterschool programmes to address these core skills, these examples are primarily limited to middle- and high-school-age children. This lack of rich discussion of the possibilities of NMLs in early childhood education may simply be a product of limited research into media literacy and very young children. In an extensive review of media literacy literature, Buckingham (2004) identified a significant gap in research on younger children, particularly in the area of the Internet and new media. The Fred Rogers Center, in a network scan of media- and technology-based resources available to early childhood target groups, concluded that 'there seems to be little awareness of the concept of media literacy in the field of early childhood education' (Schomburg and Donohue, 2009b).

This omission may also reflect a general cultural divide between including pre-K and K-12 in the same conversation. For example, *Waiting for Superman*, the recent emotionally charged documentary about the American educational system (Guggenheim, 2010), only spent about one minute in the 102-minute movie on any education prior to kindergarten. Funding for early childhood education programmes in the USA is often among the first items to be struck from a budget. This is ironic considering that high-quality early childhood education, according to 2000 Nobel Laureate in Economics James Heckman, is perhaps the best possible investment in human capital 'to increase workforce capabilities, raise productivity and social cohesion and assure America's economic competitiveness in the global economy' (Heckman, 2010, p. 1). The USA is the only developed nation that does not offer voluntary, nationally available, quality early childhood education programmes to underserved families. It is equally as important, if not more so, to have a discussion about media literacy education, domestically and possibly globally, in terms of birth up to eight years old (Bazalgette, 2010).

This paper aims to explore the ways in which early childhood educators and caregivers of very young children working in the Reggio way might utilize NMLs when they mentor, teach and model behaviour to children. The NML white paper aims:

- ... to challenge those who have responsibility for teaching our young people to think more systematically and creatively about the many different ways they might

build these skills into their day-to-day activities in ways that are appropriate to the content they are teaching. (Jenkins, 2006, p. 21)

However, in many ways, these basic concepts are not at all 'new' to early childhood education. Many of these skills are already integral parts of early childhood philosophies and curricula; they just have not been extracted or named in this way before. Simulation is happening in the block area. Collective intelligence is going on in the dramatic play area. Multitasking is being practised at snack time. Delving into the relationship between the NMLs and early childhood education might contribute to a larger dialogue about children and media, one that sees parents, children and teachers as empowered digital and non-digital media users. All the NML skills are relevant to very young children's classroom experiences, as well as their home experiences. For the purposes of this paper, I will focus on three of the 12 NML skills (*play*, *distributed cognition* and *transmedia navigation*) and how each can apply in digital and non-digital ways to Reggio Emilia-inspired teaching and learning.

The interplay of NMLs and Reggio practices

Some of the very foundations of NMLs may be fundamental to progressive forms of early childhood education, such as those inspired by the infant-toddler programmes of Reggio Emilia, Italy, which are grounded in democratic and empowering educational principles. I would like to give a very brief overview of the history of Reggio Emilia-inspired practices in Italy and the USA, while cautioning that I can at most describe only the general tendencies of working with the Reggio philosophy, as it can be interpreted in many ways and is observed differently in classrooms in various countries and cultures.

During the rebuilding of Italy, following the Fascist dictatorship of World War II, the Italian government gave each town a small allocation of money to restore their community. The *provincia* of Reggio Emilia sought to invest in the future through rebuilding schools. Local middle-school teacher Loris Malaguzzi became the driving force of that restoration, which was inspired by freedom from oppression and the area's long history and tradition of cooperative work. Following a time of great ferment and intellectual restriction, the educators of Reggio Emilia found encouragement in the practices of Dewey, Vygotsky and Piaget (Gandini, 2008), echoed by the NML theoretical grounding. In a constructivist approach, the Reggio philosophy is tied to a belief in which children's questions, cognitive knots and investigations lead to

learning. Metaphorically, this approach can be likened to going to where children throw the ball and throwing it back to them (Khokha, 2010). Of the image of the child in Reggio, Malaguzzi (1994, p. 56) writes:

- Those who have the image of the child as fragile, incomplete, weak, made of glass gain something from this belief only for themselves. We don't need that as an image of children. Instead of always giving children protection, we need to give them the recognition of their rights and of their strengths.

This is in sharp contrast with today's societal perception of children as being in need of protection from, for example, the ills of the mass media (Wurm, 2005). From the beginning, the Reggio Emilia approach considered education as 'a communal activity and sharing of culture through joint exploration of children and adults who together open topics to speculation and discussion' and a clear partnership between parents, educators and children (Edwards et al., 1998, p. 7). Other key aspects of the Reggio Emilia approach are: small-group, long-term and project-based learning; reflection through teacher and student documentation; and the environment as the third teacher or the interplay of space and relationships.

In the late 1980s/early 1990s, touring exhibitions and cross-cultural exchanges between American and Italian educators inspired a number of preschools in the USA to consider adapting the Reggio approach to their own cultural contexts (Gandini, 2000). The North American Reggio Emilia Alliance (NAREA), formed in 2002 during the NAEYC Conference in New York, serves as the US network of educators, parents and advocates inspired by the Reggio Emilia education project (North American Reggio Emilia Alliance, 2008). While cultural restraints make replicating Reggio impossible, many American educators are attempting to articulate what is true of their local communities and relevant to their cultures within the classroom (Wurm, 2005).

Howard Gardner, who has previously partnered with the NML research group through the GoodPlay project, has also greatly contributed to the exploration of Reggio Emilia in an American context through Project Zero at the Harvard University Graduate School of Education (Project Zero et al., 2003; Project Zero and Reggio Children, 2001). In the foreword to the foundational Reggio book *The Hundred Languages of Children*, Gardner (1998, p. xvii) writes: 'Reggio successfully challenges so many false dichotomies: art versus science, individual versus community, child versus adult, enjoyment versus study, nuclear family versus extended family; by achieving a unique harmony that spans these contrasts, it reconfigures our sclerotic categorical system.'

Reggio may also challenge the dichotomy of digital versus non-digital media in the lives of young children.

I would next like to present an initial exploration into how the philosophy of Reggio Emilia-inspired early childhood education in the USA might embody the NML skills of *play*, *distributed cognition* and *transmedia navigation*, within the context of children expressing themselves through the interplay of digital and non-digital media and the practice of social skills and cultural competencies. I hope to point out some similarities in terminology and principles between NMLs and this educational philosophy in order to forge a broader range of alliances and advocates for early childhood education in the USA, as these parallels have not yet been drawn in the literature.

Play

Jenkins (2006, p. 22) defines play as ‘the capacity to experiment with one’s surroundings as a form of problem solving’. Acknowledging the contributions of developmental psychologists and cultural anthropologists, Jenkins notes that play ‘is key in shaping children’s relationship to their bodies, tools, communities, surroundings, and knowledge’ (p. 22). From their earliest learning experiences onward, ‘children try on roles, experiment with culturally central processes, manipulate core resources, and explore their immediate environments’ (p. 22). Jenkins also promotes play in terms of engagement, with adults helping children to tap into ‘free-form experimentation and open-ended speculation’ (p. 24).

What distinguishes Reggio Emilia-inspired play theory from other early childhood educational philosophies is that it proposes to demonstrate:

- ...convincingly that preprimary children can use a wide variety of graphic and other media to represent and thereby communicate their constructions much more readily, more competently, and at a much younger age than we (in the United States and other countries) have customarily assumed. (Katz, 1998, p. 28)

This conceptualization of play, much like the NML definition of play, is rooted in a universal respect for children’s competency with and mastery of mediums. To this end, ‘play is highly valued for its ability to promote development, but no more so than the complex and long-term projects in which children and teachers become engaged’ (New, 1998, p. 274). Within this philosophy of curriculum-generated play, a teacher’s observation of children’s play leads him or her to include materials or techniques that he or she thinks will support children’s spontaneous interests (Bennett et al., 1997; Stegelin,

2005). This support is reflected in the school's physical space by an *atelier*, or studio, and an *atelierista*, or artist in residence, who supports the teachers and children in making their learning visible (Edwards et al., 1998; Trepanier-Street, Hong and Donegan, 2001). Reflective abstraction may be demonstrated through a variety of media, be they language, drama or photography. In this *spiral curriculum* approach (Bruner, 1977), children are encouraged by adults at each stage in their development to return to the same ideas at increasingly sophisticated levels of understanding.

In terms of Reggio and technological play specifically, Malaguzzi viewed computer literacy as just another of the hundred languages of children. He saw potential for children's self-awareness, pleasure and gratification in learning how to manipulate, respond to and communicate with computers (Malaguzzi, 1996). Malaguzzi emphasized the symbolic, haptic and emotional potential for building relationships through technological play. Foundational Reggio scholar Carlina Rinaldi (2006, p. 139) views technology as part of an ecology of languages:

- . . . an ecology where technological languages can be of fundamental support if we let the computer and other forms of technology become tools, media capable not simply of adding but of multiplying, able that is to create something new and unpredictable. It is our hope that they will be able to act as a support to creativity.

In the Reggio classroom, digital tools are not isolated from non-digital tools in a computer lab; rather, they are available among other tools in the classroom environment and used within larger projects. As young children and adults fluidly interact with digital and non-digital media, they may be reshaping the boundaries for the impact of information technologies both on play and *as play* (Yelland, 1999). Experimentation and media manipulation, within a full ecology of digital and non-digital languages, are key qualities of play for both NMLs and Reggio.

Distributed cognition

Distributed cognition is defined by Jenkins (2006, p. 37) as 'the ability to interact meaningfully with tools that expand mental capacities'. In terms of its manifestation, 'Work in distributed cognition focuses on forms of reasoning that would not be possible without the presence of artifacts or information appliances and that expand and augment human's cognitive capacities', or devices that externalize memory or processes (p. 37). This skill does not necessarily revolve around technology, for distributed cognition 'is also

about tapping into social institutions and practices or remote experts whose knowledge may be useful in solving a particular problem' (p. 37). This cognitive skill involves thinking across 'brain, body, and world', and is closely related to the social production of collective intelligence (p. 38).

The aspect of Reggio Emilia education perhaps most closely aligned with distributed cognition is the process of documentation, in which both children and adults take part in order to make learning visible. Documentation externalizes memory and processes, creating artefacts that expand children's and adult's cognitive capacities. It is seen as a professional art form in Reggio, and involves both digital and non-digital media, such as PowerPoint presentations, short books and posters (Hong and Trepanier-Street, 2004). Video in particular can serve as a tool of the mind for children and adults, for instant revisiting and reflection of a classroom encounter (Forman, 1999; Hong and Broderick, 2003). Documentation serves three key functions:

- ... provide[s] the children with a concrete and visible "memory" of what they said and did in order to serve as a jumping-off point for next steps in learning; provide[s] the educators with a tool for research and a key to continuous improvement and renewal; and provide[s] parents and the public with detailed information about what happens in the schools, as a means of eliciting their reactions and support. (Edwards et al., 1998, pp. 10–11)

While Foucault may seem incongruous with a discussion of early childhood education, Malaguzzi and others working in the Reggio Emilia tradition acknowledge Foucault's contributions to understanding the social co-construction of visibility and political discourse of the documentation process (Moss et al., 2000; Naughton, 2005; New, 1998). Documentation should not be confused here with display, which may be a result of societal and cultural pressures for children to mass-produce artefacts in preschool for their parents' delight or as 'proof' of learning.

Rather, documentation is designed to display the distribution of 'cognition as collaboration' (Levine et al., 1993, p. 599). It is part of a process of negotiated learning, or a dynamic system of causes, effects and counter-effects via design, discourse and documentation (Forman and Fyfe, 1998). Documentation highlights the importance of multiple perspectives in decision-making. The process in Reggio focuses on 'increasing opportunities for children to experience various, conflicting, and sometimes confusing perspectives [. . . thus supporting] children's predisposition to challenge one another's views, all the while providing opportunities for them to revisit, revise,

and review their theories and their hypotheses' (New, 1998, pp. 271–272). This helps children to become comfortable with and even excited about the unknown. It can also serve as a catalyst for social relations around technology among parents, teachers and children (Bers et al., 2004; Trepanier-Street, Hong and Bauer, 2001). Similar to how distributed cognition is described in the NML white paper, documentation in Reggio involves thinking across brain, body and world (Clark, 1998).

Transmedia navigation

Jenkins (2006, p. 46) explains transmedia navigation as 'the ability to follow the flow of stories and information across multiple modalities . . . Transmedia stories at the most basic level are stories told across multiple media'. Invoking Kress, Jenkins (p. 47) describes how the way that children use multiple modes of expression may change how composition is taught thus:

- . . . students must learn to sort through a range of different possible modes of expression, determine which is most effective in reaching their audience and communicating their message, and to grasp which techniques work best in conveying information through this channel.

George Forman, one of the leading researchers into Reggio, perhaps writes most explicitly about transmedia navigation, proposing that children learn by trafficking through different media. He (1996, p. 57) writes:

- Each medium . . . orients children to different aspects of the subject matter. Each medium makes certain questions more *askable* than other questions. And in order to eventually find the solution to any problem, children have to ask of the event many different types of questions. Thus by using a variety of media to represent a single phenomenon, we are helping children ask better questions.

As such, art media are 'tools to help children make their ideas visible, their thoughts, theories, and perspectives, and in the process traverse the terrain of their own bias in order to construct a new understanding of the subject' (Forman, 1996, p. 56). Wire, paper, blocks, clay and string all allow for different forms of expression. Cross-comparison conversations are important, for talking can be a deliberate attempt to reconcile differences between media or answer questions raised by others. It is important to note that the trafficking through media is not uni-directional, as it is paramount to revisit the initial

representation of the idea or narrative. Forman (1996, p. 58) writes:

- The traffic through different medium should not be treated as a linear progression, say from two dimensional first then on to three dimensional media, or from a written script to the acted play. Traffic needs to flow in a cycle where children return to the first representation.

In both the NML and Reggio theories, digital and non-digital modes of expression are important tools in the construction, deconstruction and reconstruction of concepts and narratives. The benefits of trafficking and navigating through and across media seem to align closely in both theories.

Implications for the media literacy and early childhood education landscapes

Merging the Reggio philosophy with NMLs might allow for more flexible definitions of 'media' and 'technology' that encompass young children's exploration of and expression through digital and non-digital forms, thus enabling a greater examination of the potential positive effects of media and technology. Putting these theories with similar approaches and terminology into conversation with each other might also shine a light on opportunities for validating early childhood educational experiences within a framework that has thus far been exclusive to K-12.

In aligning Reggio and NMLs, we promote children as inherently capable human beings with rights and agency and, in doing so, potentially move away from a deficit model of children and media and towards an asset model. As media literacy scholar Faith Rogow (2002, online) writes:

- We don't wait until children are capable of deciphering the intricacies of a Toni Morrison novel before introducing them to the alphabet. It makes no more sense to wait until children are developmentally able to fully comprehend media messages before introducing them to media literacy skills. To the contrary, if we see media literacy as vital to life in the "Digital Age," then we should begin the acquisition of that literacy as early as possible.

Children are both consumers, creators and distributors of media, tools and technology. As such, very young children are not becoming people – they are people. Such a perspective may complicate the automatic neocolonialist segregation of children and adults into 'digital natives' and 'digital immigrants'. Technological enquiry through play, distributed cognition and transmedia navigation, as described in the NML white paper, might be a way for children

and adults to collaborate in each others' learning processes. We can better support future and current early childhood educators as lifelong learners themselves, as teachers also need to know how to use both digital and non-digital tools, and what uses are appropriate for children, in ways that are intentional and authentic to each teacher and child's learning ecology.

Primarily, discussions of media literacy have taken place within a digital or mass media framework. However, it is important that we support all the languages that children acquire during their early years. We should conceptualize media literacy as thinking critically, becoming confident and expressive, and sharing ideas in different forms in order to add depth to children's understanding of representation and meaning making. Like all developmentally appropriate tools, children and teachers should also be able to discern among tools, only choosing (if given the choice) to use a digital tool if it is the best one available. The affordances of different tools may lend themselves better to theory testing or theory construction.

Future enquiry into the dialogic commonalities between early childhood education and digital media and learning literature might attempt to better understand where mass media and informal home learning fit into very young children's media literacy development. For the purposes of this paper, I have focused on a broader definition of media and the formal Reggio classroom. The challenge of modern mass media might be to provide children with opportunities to use cinematic and virtual reality to explore their inner fantasies of control and empowerment over their real-world environment (Ashton, 2005; Barrett, 2009; Davies, 1997; Dyson, 1997, 2003; Hill, 2010; Kinder, 1991; Marsh, 1999, 2004, 2010a, 2010b; Paley, 1984; Seiter, 1999). Mass media can provide characters, objects and events that, collectively, can help a child build a unique meaningful world in which to play mentally, although that potential for imaginative play beyond the text is highly dependent on content and a child's overall media diet (van der Voort and Valkenburg, 1994). Media literacy regarding mass media can also help preschool-age children develop general habits of enquiry (Rogow, 2007; Singer and Singer, 1998, 2005; Singer et al., 1981).

Although I have primarily discussed formal education settings, there is also a need to study further the relationship between school and home settings for media literacy and fluency development for very young children and parents. New initiatives, such as the Fred Rogers Center's Early Learning Network, a broad-based Web platform for under-served and under-resourced teachers, home-based caregivers and families of young children, providing digital media- and technology-based resources to improve learning and development

for young children, might help in bridging the scaffolding gap mentioned earlier (Fred Rogers Center, 2010). The base of research going forward from this paper should be supported by observation and interviews with teachers, parents and children of various socio-economic, racial and geographic backgrounds in the American Reggio community in order to better understand their conceptions of media literacy.

We must be mindful of the context in which digital and non-digital tools and content are helpful or harmful to children's development. While children might have ever increasing digital and non-digital technologies with which to interact, what remains constant is that very young children have socio-emotional, physical, cultural and cognitive needs that must continue to be met, while potentially integrating media mastery into a range of other activities. One way to increase awareness is to include very young children in the conversation about NML and media literacy in general. I have attempted to do so via an initial investigation into the ways in which the NML skills of play, distributed cognition and transmedia navigation are currently promoted in Reggio. There is great potential for investigating the relevance of other NML skills within Reggio, as well as the application of NMLs to other early childhood educational theories, as there are many different philosophies and cultural contexts within the realm of early childhood education. In bringing NMLs and early childhood education literature into the same conversation, I am not trying to impose a relationship between the two, but rather to promote partnerships between academics, policy-makers and early childhood educators in order to find organic ways to highlight and improve current teacher and family practices.

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