Introduction

Connecting Conversations about Technology, Learning, and Identity

Cynthia Carter Ching and Brian J. Foley

In 1995, Sherry Turkle's *Life on the Screen* opened up a new field of research, that of interpretive and descriptive studies of human behavior in online environments. Her work exposed a multiplicity of virtual selves and posed provocative questions about the relationship between technology and identity. When asked to respond to rampant speculation at the turn of the millennium about the future of computing, Turkle asserted that "the question is not what will technology be like in the future, but rather, what will *we* be like, what are we becoming as we forge increasingly intimate relationships with our machines?" (2003, p. 1).

While Turkle was certainly not the first scholar to demand that attention be paid to the impact of our technological tools upon our physical and psychological selves (e.g., Haraway, 1985), her question of "What are we becoming?" reflected a growing concern. In fact, over the past two decades a substantial body of scholarly work has emerged to deal with this question from numerous academic fields. Authorities in media studies describe broad ways in which human activity and culture have changed, for good or for ill, due to an influx of technology (e.g., Postman, 1993; Rheingold, 2000; Trend, 2001). "New Literacy" scholars assert that because of changes in social media, multi-media, and writing tools, the very definition of what it means to be a literate person is evolving away from print-based communication (Cope & Kalantzis, 2004; Lankshear & Knoble, 2007; New London Group, 1996). Cultural studies and feminist psychology research detail the ways in which a "cyborg" mentality evolves from the intimate fusion of humans and machines (e.g., Haraway, 1985; Hayles, 1999). According to the cyborg model, the nature of human activity and psychology fundamentally changes as we incorporate more and more digital technology into our physical surroundings, our daily activities, and even our very bodies through medical and wearable technology (Haraway, 1991).

From an identity perspective, much of the scholarship on technology's influence in the vein of Turkle's prescient question seems to be describing a unidirectional model of impact: our communities and our selves, physical or virtual, are altered in accordance with the affordances or structures of the technologies we employ. Another specific example of this unidirectional model is the current concern over videogames and their effects on children's attention and health (e.g., Chan & Rabinowitz, 2006; Vandewater, Shim, & Caplovitz, 2004). In many versions of this conversation, particularly as research studies are taken up by media outlets, identity and agency take a backseat to mass effect, as if popular culture presents consumer technologies, and cognitive deficits and obesity automatically follow in their wake. Yet there is an alternative perspective suggesting that perhaps the power of technology lies in the human side of the equation – in the meanings we create, and in the ways we both welcome and resist technology's presence in our culture, our physical and social surroundings, and our personal lives.

While originally published in 1954, long before the word "technology" became synonymous with computing, Martin Heidegger's *The Question Concerning Technology* encapsulates this alternative philosophy. Heidegger asserts that "[T]he essence of technology is by no means anything technological. … We ask the question concerning technology when we ask what it is. Technology is a means to an end. … Technology is a human activity. These two definitions belong together" (1982, p. 4). Heidgegger suggests that perhaps there is only one side of the equation, the human side, and thus, the distinction between technology and its object is a false dichotomy, insofar as we develop and harness technologies to achieve human goals. In recent years, some research on gender and technology, largely from an ethnographic tradition, has painted quite a different picture than a unidirectional model (Gajjala, 2004; Margolis & Fisher, 2002; Selfe & Hawisher, 2004). According to this research, and in accordance with Heidegger, technology is situated within the meaningful histories of individuals and communities, and its impact is largely determined by the agency of those who manage to harness its expressive or exploratory potential.

The constellation of chapters in this book investigates, and perhaps complicates, the relationship between influence and agency in the emerging field of technology and identity. The research contained in these pages details how the use of technology creates possibilities and imposes constraints, how individuals make choices and are denied choices, and how identities both shape and are shaped by technology tools and experiences. The individuals and communities described are diverse: from young

children to adults, from struggling inner-city youth to privileged and resource-rich schools, from a focused examination of a single ethnic group to multicultural communities in physical and virtual spaces. Throughout the different studies in the book, however, there remains one constant: an emphasis on *learning* as the context, or even the main point, of investigation in all our research.

A Learning Research Perspective

Why learning? The simple answer is that we are all educational researchers. Learning, broadly defined, is what we do. It is the thematic glue that binds us together, both professionally and personally, and it is a large part of our own identities. In fact, the genesis of our idea for this book occurred when some of the chapter authors presented together in a symposium on "Technology and Identity" at the annual meeting of the American Educational Research Association. When we began thinking seriously about the possibilities for a book, we considered what perspectives might be missing from our original conference cohort and what additional work should be represented. We sought out other colleagues to complete the comprehensive vision we had, and the whole book eventually took shape.

In a broader sense, though, our focus on identity would be incomplete if we did not include a focus on learning. The evolution of identity spreads across the entire lifespan (Case, 1985; Fivush & Buckner, 2003; Harter, 1999), and an awareness of self and the ability to critically examine self-representations are considered developmental milestones on the road to reflective adulthood (Erikson, 1968; Harter, 1990). From a developmental research perspective, learning about the self is one of the most important kinds of learning that humans do. Furthermore, identity, as instantiated via motivations or personal epistemologies, mediates all other kinds of learning in some way and can be viewed as an analytical lens for examining learning in general (Gee, 2001; Wortham, 2006). If we take the perspective that learning is situated within communities, then learning and community identification are fundamentally connected (Lave & Wenger, 1991; Wenger, 1998). As researchers studying identity, therefore, we must examine not only individuals and their learning but also the social and cultural contexts, practices, and technologies, digital or otherwise, that shape and are shaped by the development of selves (Goffman, 1959; Holland, Lachiotte, Skinner, & Cain, 2001).

Thus, we focus not just on technology and identity, but also on the intersection of learning, technology, and identity. This intersection is an

underdeveloped area in the fields of educational research and educational technology. It is high time that basic conversations about learning and technology explicitly include questions of identity as an integral part of the discussion. Beginning over three decades ago, authors like Seymour Papert (1980), Jan Hawkins (1985), Idit Harel (1990), and Yasmin Kafai (1995) revealed the human face of educational technology research and called for empowering computer applications and other technology developments that would lend themselves to learners' personal expression and exploration. Yet the vast majority of research on educational technology in formal or informal learning environments has relied primarily on instrumental, cost-benefit analyses, and standardized knowledge assessments (see reviews by Culp, Honey, & Mandinach, 2005; Means & Olson, 1997).

This instrumentalist perspective has several unfortunate consequences. First, a focus on standardized knowledge assessment limits our examination of the role of technology in learning to strictly cognitive effects, rather than a broader investigation of technology's potential relationships to social and emotional development. Second, cost-benefit analyses are often short-term in scope, and thus do not account for the emergent and shifting roles of various technologies in learning across the lifespan. Finally, an instrumentalist view of technology and learning encourages a preoccupation with the *effects of* technology rather than *engagements with* technology, and it certainly does not afford the possibility of abandoning a focus on effects altogether and dealing instead with complex activity systems of individuals, communities, cultures, and technologies (Barab, Schatz, & Scheckler, 2004).

Nevertheless, some scholars have taken up the effort of investigating technology designs and learning environments with a focus on individual and collective identities (e.g., Bers, 2001; Goldman-Segall, 1998; Pinkard, 2005; Steinkuehler & Williams, 2006). Many of them, but by no means all, are represented in this volume. Our approaches vary widely, however, and that is another reason for this book: to expose and make explicit the different methods, theoretical backbones, and researcher stances toward technology and identity that exist in this emerging field.

Developmental and Sociocultural Approaches to Identity

The challenge of reconciling differing approaches is present throughout the broader area of identity research. Different fields describe identity in widely diverging ways, and approaching identity development from a

holistic perspective typically requires drawing on research traditions in multiple fields (Buckingham, 2008; Nasir & Cooks, 2009).

A traditional psychological model depicts a healthy adult identity as a coherent set of traits, dispositions, values, and beliefs about the self that can remain relatively unchanged across a wide variety of situations and contexts (Harter, 1997; Marsh & Hattie, 1996). Although developmental psychologists describe childhood through adolescence as being occupied with the process of developing a consistent self-concept (Harter, 1999; Kroger, 2007; Marcia, 2002), in a traditional developmental model, the intensive period of identity development then mostly halts, and adulthood becomes largely concerned with ensuring that the resulting self-concept is integrated, internalized, and realized through life choices (Erikson, 1968; Higgins, 1996). Individuals can choose to represent the self in different ways depending on social cues and contexts (Markus & Nurius, 1987; Schlenker, 2003), but ideas about the self are not necessarily changed through this process. From a psychological perspective, identities may evolve over the lifespan and in response to consistent social messages, but a core concept of self should be sustainable, resilient, and resistant to temporary external influences.

A sociocultural or anthropological model, however, looks very different. Identities are often described as flexible enactments, which only become visible via individual or joint practices displaying and realigning varying aspects of our selves (Goffman, 1959; Wenger, 1998). Identities are not viewed as static clusters of traits, but rather they constantly shift and are repositioned in conjunction with social influences: a mutual refiguring of the individual and his or her cultural world (Holland et al., 2001; Lave & Wenger, 1991). Furthermore, some researchers argue that the very nature of the self is inherently in flux, such that identities are narratively constructed, deconstructed, and reconstructed throughout the entire lifespan in the ongoing and everyday process of telling and retelling stories about ourselves to different audiences (Connelly & Clandinin, 1990; Ochs & Capps, 1996).

Given these two diverging approaches, it seems that identity can be figured as both a developmental construct and a fluid ongoing process. Not coincidentally, research on technology and identity often falls out along some parallel lines. One approach is to assert that identity development is a critical function of childhood, adolescence, and early adulthood, and to investigate the ways that technology can participate in that developmental process. In this model of inquiry, the self that develops and is expressed is not limited to the technological environment; rather, technology functions as a tool for the development of selves (or aspects of selves) that are more

consistent across environments and that drive future identity development going forward. A different approach, and one that has become more common in recent years with the rise of digital authoring technologies and immersive online environments, is to frame technology as a tool for identity exploration and experimentation. According to this approach, so-called identity play takes place in various contexts and throughout the lifespan. This work is more informed by a fluid model of identity and examines how representations of the self or ideas about the self are constructed through use of online environments or other digital media. We have organized our volume into two parts in accordance with this broad distinction.

Overview of the Book

Part I contains research that investigates relationships among technology, learning, and identity from a developmental perspective. While much identity research focuses on adolescents, Chapter 1 by Cynthia Carter Ching and X. Christine Wang starts off the book at an earlier point in the developmental spectrum. The chapter describes a study in which a classroom of kindergarten and first-grade students create digital photo journals about their lives and emerging academic identities at school. Ching and Wang analyze children's journals to determine the kinds of self-representations children construct and what kinds of stories children tell about themselves in school through their photos and captions. Borrowing from Foucault, Ching and Wang investigate the potential for the digital journal activity to function as a type of "technology of the self" for young children. The authors find that although children demonstrate significant self-awareness and agency in their journals, it is also the case that Foucault's concerns regarding self and power are both visible and important in the perhaps unlikely context of early childhood education.

Chapter 2 by Alan Davis and Daniel Weinshenker takes a close look at the process of constructing the self through narrative by tracing the evolution of personal stories through the phases of conception, production, presentation, and post-reflection. Through two case studies, Davis and Weinshenker articulate how urban youth can create digital narratives about themselves and thus embrace a sense of agency and imagined futures. One function of Chapter 2 is to describe the affordances of an after-school setting focused on digital video production and digital storytelling for urban youth to engage in self-representation and self-reflection. But beyond the description of the project itself, the chapter also takes a longitudinal developmental approach and follows up with

the two case participants five years after the initial project, to investigate
the long-term impact of the digital storytelling process. Looking across
both of the first two chapters, we find that they are similar, in that the
authors examine the potential of digital media and digital authoring to
function as focal points for critical periods of identity development, and
both chapters approach this work from the perspective of constructing
the self through storytelling.

In Chapter 3 by Carol Cuthbertson Thompson and Lisa Boullion Diaz,
the book moves from learners constructing digital stories about their own
identities, to youth creating digital media about published urban-fiction
stories and co-constructing identity and agency in the process. Thompson
and Bouillion Diaz investigate the relationship between the identities of
inner-city youth and the organization and constituent practices of a com-
munity technology center in which they participate. The chapter describes
the collaboration among a technology center and its adult mentors, com-
munity youth, and an urban fiction author. While the explicit goal of the
activity is for youth to design Web sites about popular novels, Thompson
and Bouillion Diaz examine how the prospects and identities of these youth
are altered by their increasing engagement and technology skill develop-
ment, how their emerging web pages mediate youth-adult negotiation of
design sensibility and authority, and also how the voices of the partici-
pating youth affect center staff and researcher conceptions of technology-
supported learning.

No assemblage of research on identity and development would be com-
plete without a diagnostic assessment, and Chapter 4 by Marina Bers, Alicia
Doyle-Lynch, and Clement Chau provides just that as the final contribu-
tion to Part I. The chapter describes the development, testing, refinement,
and application of an instrument for measuring "positive technological
development" (PTD). This is diagnostic assessment with a twist, however,
in that, while many developmental instruments are designed to identify
deficits or delayed function as compared to some normative standard, Bers
and colleagues take as a starting point the assumption that many youth
are already using technology in powerful and positive ways. Building on
the positive youth development movement, the authors articulate a devel-
opmental trajectory from baseline technology use toward an exceptional
youth technology stance that focuses on caring, competence, confidence,
connection, character, and contribution. The chapter describes the diag-
nostic instrument itself and also provides a rich description of youth con-
structing a virtual city as an example of how PTD constructs are embodied
in youth technology practices.

Part II of the book focuses on research that examines the continuous construction and exploration of identities via technology and within technology-rich environments. Participants in the studies described in this part of the book jump back and forth between multiple identities across environments, or even display different identities simultaneously or on a moment-to-moment basis. Whether participants are seemingly unaware of these shifts or explicitly engaging in identity play, these studies of selves-in-flux demonstrate the profound complexity of interactions among person, place, and social world.

Chapter 5 by Brian Foley, Melanie S. Jones, Pamela Aschbacher, and Cameron McPhee introduces Whyville.net, an interactive science-learning community where teen and "tween" users interact via avatars they design themselves as visual representations of their Whyville identities – literally *constructing* their online selves. The authors use surveys and focus groups to investigate relationships among users' real-life identities, real-life appearances, and their Whyville avatars and find that, when it comes to identity experimentation or identity representation, many youth do both; that is, they create multiple identities on the site over time, such that some avatars are reflective of their own physical appearance and demographics, and some are not. Young users' reflections on their identity experimentation, in particular the activity of creating and using avatars that are of a different gender and/or race, can lead to powerful insights about racial and gender bias, including the conclusion that "you can make friends easier on a boy face."

In Chapter 6, Claire Charles unpacks the tensions involved in "young femininity" through an examination of performative gender within technology-rich curricula across two settings: a privileged girls' school and a public co-educational middle school. Charles finds that the girls at both sites in her study inhabit a world of contradictions. They display powerful agency and skill through their mastery of a wide variety of technologies, yet they cannot seem to escape a sense of objectification. In one case the idea of female-as-object is internalized, as the girls themselves ruthlessly evaluate feminine physical appearance. But in another case male gaze is explicitly enacted, normalized, and accepted in the classroom, as boys at the co-educational school use a simulation game to create a female victim. Through the examination of both cases, Charles reminds us that technology does not itself create or deny opportunities for agency or objectification, but rather that technology activities and technology users are situated within complex webs of gendered meanings, contexts, and relationships.

Chapter 7 by Caroline Pelletier and Natasha Whiteman examines the construction and negotiation of fan identity in two contexts: an online fan

site for discussion of a particular videogame, and a videogame-making project in an after-school club. The authors examine how participants in both contexts use talk, activity, and artifact construction to position themselves in relation to videogames, to one another, to fandom in general, to fans of other videogames, and to a larger community of game players and non-players. While enacting fan identities occurred in both the game-making and fan site contexts, students in the afterschool program discovered, in true constructionist fashion, that their identities as game players were altered by their emerging identities as designers. Beyond the details of each study, Pelletier and Whiteman use this comparative investigation to advance larger points about the materiality of digital representation, the false dichotomy of product versus product when examining a videogame and how one learns to play it, and the artificiality of strict boundaries between physical and virtual communities of fan identity.

Concluding the volume is Chapter 8 by Deborah A. Fields and Yasmin B. Kafai. Through a detailed case study of one girl in an after-school program where students can participate in an online immersive environment, the authors pose several critical questions highlighting the complexity and challenge of identity research in online contexts. Fields and Kafai ask, When tracing the activity of an individual across physical and virtual worlds, how do we treat the identities that are enacted in different spaces? Is it fair to assume that what is enacted in the physical world is the "real" identity, and that the "play" identity inhabits only the virtual world? Does keeping these enactments distinct or separate make sense, particularly when the virtual identity engages in morally ambiguous or problematic behavior that the physical identity eschews? Finally, how does a person learn how to *be* in an immersive online environment, and what correlates exist to the social and peer influences that contribute to learning in the physical world? The authors provide provocative answers to these and more questions in this final chapter.

Constructing the Self in a Digital World

Before moving on the research studies themselves, we feel the title of this volume deserves some attention. Readers may find this odd coming at the *end* of the introduction, but the explanation builds on what has already been said.

First, the phrase "constructing the self" stems from our assertion that, whether as a developmental phenomenon with a teleological end point or as an evolving and ongoing lifelong exploration, selves are always being actively built and rebuilt. Much of the meaning we derive from life on a

daily basis emerges through the process of reflecting on our experiences and converting them into narratives about ourselves (Bruner, 1992; Ochs & Capps, 1996). Further, self-construction occurs within actions both profound and mundane. Several of the chapters in this book describe contexts or curricula that are explicitly pedagogical in nature, designed to afford crystallizing opportunities for deep self-reflection and self-transformation. But these are not the only activities wherein self-construction takes place. Particularly at this point in history, when popular culture and the consumer marketplace provide endless options for self-positioning and self-expression via everyday choices, constructing the self has become a nearly constant activity (Giddens, 1991; Walkerdine, 2003). So although it is easier to see the explicit process of self-construction when engaging with a student selecting photos for a digital journal, or watching an online user creating a virtual avatar (meticulously crafting face and body parts, thoughtfully choosing personality attributes from a list, carefully preparing text for an "about me" description), as modern subjects, we are in fact constructing our selves every day, in whatever environments we inhabit.

Second, the phrase "in a digital world" encompasses any and all of the environments in which we might locate ourselves (or our selves). With this phrase we indicate not only virtual spaces, but also a physical world that has digital technology embedded within it, surrounding us and becoming increasingly normalized. Regardless of whether we are interacting via avatars or text within a virtual environment, using computer or handheld technology with our physical bodies, or reflecting on technologies across spaces, the assertion of a "digital world" still applies. Young adults in the Western world today inhabit a universe that has, from their perspective, *always* been populated by mobile phones, computers, websites, videogames, and wireless technology (Bennett, Marton, & Kervin, 2008). Because the learners in all of the studies contained in this volume are children, youth, or young adults from the United States, Britain, or Australia, this is their universe (and ours, whether we acknowledge it or not).

In sum, the world is digital, and we construct our selves in it.

References

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