



Digital Renegades in America: Changing Metaphors to Realize the Potential of Technology in Education

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Introduction

In 2001, Marc Prensky introduced a new metaphor to the educational landscape. He suggested that the rising generation were growing up in a time so filled with new media that they were “digital natives,” while those born earlier were “digital immigrants.” In this view, because the digital natives are growing up immersed in a sea of technology, the ways they learn, interact, and envision the world are markedly different. In contrast, the older generations or digital immigrants, are more plodding and hesitant when it comes to change and technology and, as a result, are behind the times when it comes to learning, teaching, and being. The result is an approach to schooling that marginalizes teachers (digital immigrants) and enthrones technology as the unquestioned savior of the rising generation (digital natives).

Since its inception, the digital native/digital immigrant metaphor has become the defining metaphor among teachers and many others for the role of technology in education. However, the unquestioningly Pollyanna-ish view of technology’s good and dreary view of teachers and their agency inside the classroom is ill-suited to the needs of a society, such as ours, facing a need for more democratic approaches and practices in schools. Furthermore, the outright dismissal of teachers runs counter to the idea of teacher agency and power and the notion that teachers are tools of democratic renewal and growth (Dewey, 2004; Freire, 1970; Giroux, 2005). As a result, the digital native/digital immigrant metaphor needs to be put aside and we need a new metaphor to help guide our thinking and actions as we confront the perils and potentials embodied in new technologies in the classroom.

The Digital Native/Digital Immigrant Metaphor and its Limitations

According to Prensky, digital natives grow up immersed in a digital world that operates in significantly different ways than the world of previous generations. As a result, these students are increasingly disconnected from traditional schooling methods. For example, proponents of this view claim that digital natives prefer to access information in a non-linear fashion driven by needs in the moment (Prensky, 2001; Smolin & Lawless, 2003); digital natives tend to multi-task and take in multiple streams of information/stimulus simultaneously (Prensky, 2001); and digital natives prefer authentic or project based learning (Smolin & Lawless, 2003). Any one of these tendencies positions students in stark contrast to traditional approaches to teaching.

Prensky cautions those digital immigrants who work with digital natives in the classroom to be respectful of the learning style of the digital native. According to him, the natives will not “go backwards.” Instead, teachers must catch up. Doing so means changing and updating both our content and our methodology. Prensky urges teachers to create a much richer content that includes sociological issues, ethical considerations, political discussions, and other concepts

that will help students be more productive users of the vast amounts of information that they have at their fingertips. Our methodologies must “go faster, less step-by-step, more in parallel, with more random access, among other things” (2001, para. 19). In fact, in later writings, Prensky explained that ultimately digital natives and their facility with technology would lead humanity to a heightened consciousness and level of intellectual achievement (2009).

These two mutually exclusive categories, digital natives versus digital immigrants, set up a rigid, oppositional binary. This binary does not make room for members of one group to exhibit any of the tendencies or traits of the other group—except with “accents” (Prensky, 2001), which marks us as outsiders (Gee, 2008). Furthermore, the metaphor bases these distinctions not on real differences but on simple generation lines. According to adherents to Prensky’s metaphor, if you were born before a certain year, you are a digital immigrant; later than that and you are a digital native. The idea for delineating such a neat and tidy definition of digital immigrant/native is based on access to technology. According to Prensky, the change is based on, “the arrival and rapid dissemination of digital technology in the last decades of the 20th century” (2001, para. 3). It is assumed that because of what is supposed to be ubiquitous access to digital technologies, these newer generations of students “*think and process information differently [than those born earlier]*” (2001, para. 4, italics in original). Unfortunately, the majority of writings about the characteristics of digital natives and digital immigrants are founded on anecdotes and assumptions as opposed to research.

First, access to technology does not appear so easy to read. Simply being born after a certain year does not mean that one has unfettered access to computers and technology. Even when computers and Internet access are available in a home, research has shown that a number of factors—placement of the computer, rules and types of use, and the value of technology as an educational and/or recreational tool—impact the experience students have with computers (Downes, 1998; Kerawalla & Crook, 2002). Some parents model more advanced uses of the computer for students and involve them to varying degrees in using the computer and related technologies in new and interesting ways (Thrupp, 2008). Other parents may view overuse of the computer as harmful to children and, therefore, limit time or function of the computer (Hargittai & Hinnant, 2008). In other words, “the availability of a computer does not necessarily mean genuine access” (Bennet & Maton, 2010, p. 323).

Even school access is not as clear cut as it might be. Campbell (2006) found that low access to technology outside of school was counteracted by high levels of access to computers at school at one disadvantaged school. On the other hand, Facer & Furlon (2001) found that the ability of access at school to remediate lack of access at home was uneven at best. Other research shows a similar mixed bag of results. Despite the emphasis on increasing schools’ connectivity, it appears that the answer is not as simple as increasing the number of computers in the classroom. In other words, measuring true access to new technologies is more difficult than simply counting computers or Internet connections at home or in schools.

Furthermore, the digital native/digital immigrant binary positions the digital natives as the future of our world, while the digital immigrants are mired in past. This rhetorical move harks back to similar calls of science throughout history, which have attempted to mark science as simply good and positive with no critical examination of consequences—unintended or otherwise. More importantly, this positioning effectively cuts off all power or worth of the previous generation that may or may not rely on pencil and paper, which renders them old and obsolete (Bayne & Ross, 2007). Prensky himself suggests that the biggest challenge facing teachers is how to teach old concepts in new ways because, it is implied, the old ways simply will not work.

By invalidating, with a few quick keystrokes, the powers, abilities, and, by extension, the agency of digital immigrant teachers to offer anything of substance to the lives of their students, the digital natives, Prensky creates of these teachers a second class citizenry, which as some researchers have pointed out draws on colonial notions of value and worth (Bayne & Ross, 2007; Brown & Czerniewicz, 2010).

Another criticism of the digital native/digital immigrant metaphor is the idea that age is the single most important factor in determining attitudes and facility of use in regards to technology. In fact, Bennet et al. (2008) found that there is as much difference in ability and attitude among the digital natives themselves as there is between the natives and the immigrants as a whole. Other researchers point to factors other than age as being the driving factor in explaining difference. Monroe (2004) suggests that race significantly impacts adoption and valuing of technology and posits that these cultural values have much to do with what some have called the digital divide. Helsper & Eynon (2010) claim that more important than age are experience, gender, and education level. Similarly, Gui & Argentin (2011) found that family cultural background and gender are more accurate in explaining how a person uses and values technology. In summary, it seems that age is not the best way to distinguish approaches to technology use and may, in fact, be a very poor way to explain such differences.

Brown & Czerniewicz (2010) go further, though, suggesting that experience is the single best way to explain a person's ability to use technology and the ways in which he or she thinks of technology, while age has no statistical importance. In their study, there did emerge a group of younger students who exhibited the characteristics associated with digital natives, but instead of being a representative portion of the group, these students were only 12% of the younger students. Interestingly, 4% of the older students (the supposed digital immigrants) exhibited these same characteristics. This underscores the idea that the digital native/digital immigrant metaphor is not exclusively driven by a generation gap and that even the digital native generation is not as homogenous as Prensky's metaphor leads one to believe.

Thinking systematically, the digital native/digital immigrant metaphor is set up in such a way that it limits our vision of what is possible both with technology in education and with teachers. Since the underlying assumption of this metaphor is one of the unquestionable good that technology does independent of our actions, the whole goal of this metaphor becomes adoption and integration of technology. If, as Prensky suggests, the digital native has gone beyond what digital immigrants can fathom simply by being around technology, then it would follow that the only real recourse left to schools is to buy more technology, and schools become a forum for a type of digital Darwinism—those who have the most become the most. Because as the natives are around more and newer technology, their skills will necessarily develop; they will be able to move farther ahead of digital immigrants (and cognitively more dissimilar to us on a physiological level); and they will achieve even greater things. This line of thinking leads to “the myth of equality through computers, the belief that computers will level the educational playing field” (Selber, 2004, p. 4). Such a myth further underscores the degree to which the digital native/digital immigrant metaphor works to position educators at all levels as simple facilitators whose primary job is to make sure that the rising generation has increased opportunities to be exposed to and work with more and more technology.

A New Metaphor

Given the inherent weaknesses of the digital native/digital immigrant metaphor as well as the resulting implications for schools and teachers, I suggest that we need another metaphor to understand and maximize the challenges and opportunities that burgeoning digital technologies are exerting on our context and practice. A metaphor that positions both students and teachers as potential agents in the re-construction and re-writing of an educational playing field that is designed not only to be level but also to work as a leveling force on society. In discussing the role of new media on the pursuit of freedom and equity across the globe, Evgeny Morozov (2008) talks about digital renegades/digital captives. In this metaphor, technology is not a panacea; instead it is very much a mixed bag of good and bad that needs mediation and negotiation in its use.

According to Morozov, digital technologies by themselves do not live up to the implied promises of increased freedom that surround them. It turns out, according to Morozov, that digital technologies are much better tools for tyrants and despots to use to inhibit and curtail rebellion than they are tools to aid rebels in bringing increased personal freedom to any country. Partially, this is because the same tools that make it easy to call for a flash mob protest in the streets also make it easy to document associations and contacts between the people apprehended and those they are involved with politically. More importantly, however, in Morozov's work, digital captives are those people (the majority of people) whose "political and social descent has been significantly neutered" by these technologies and who have been turned into "happy consumers of Hollywood's marginalia" (2008, para. 3). On the other hand, digital renegades are those who "leverage the power of social networks and text messaging" to work towards radical change. Unfortunately, Morozov, concludes that for most digital natives "risking the comfort of their bedrooms—with their hard-drives full of digital goodies—for the gloom of a prison cell does not appeal" (2008, para. 10).

Now, admittedly, Morozov was not thinking of the American educational context when he wrote those things. In fact, he suggested that the Internet functions differently in America than the rest of the world—especially different than it does in more repressive countries. However, I would suggest that the differences are not as great as Morozov suggests and that it is appropriate and beneficial to extend this metaphor to the question of technology in schools that we are having in our country at the present.

Schools as Birthplaces of Digital Renegades

Schools in America from the beginning of our country have been sites of increased freedom. Thomas Jefferson placed education at the center of the governmental mission of the United States when he called for government funded schooling. However, Jefferson did not construct a contention-free zone around education. Instead, by making public education a mission of the government, Jefferson placed schooling at the center of the American project of building state and national identities and, by extension, a citizenry. The skills, attitudes, and beliefs of this citizenry, then, could be substantially impacted by the type of schooling offered.

Such positioning, however, creates a certain tension in education. As Gramsci (1971) notes, "democracy, by definition, cannot mean merely that an unskilled worker can become skilled. It must mean that every 'citizen' can 'govern' and that society places him [sic], even if only abstractly, in a general condition to achieve this" (p. 40). Education is not simply an eco-

conomic endeavor; it must be about helping all people obtain a more equitable position in the visible and invisible power structures (Dewey, 2004/1916; Giroux, 2005; Guttman, 1999). In other words, it *is* about increased freedom even here in the United States.

The decisions that we make about the way schooling will and will not look have immediate impact on the lives of our students in a very real and concrete way. This idea is supported by recent findings of the Organization for Economic Cooperation and Development. Their 2010 international test reveals that in the United States intergenerational economic mobility is “particularly low” and parents’ socio-economic levels have significant impacts on the scholastic achievements of students. According to their findings, the structures of schools and classrooms are a significant factor in this social immobility.

To combat this unprecedented level of economic determinism in America what is needed are not schools that are structured to place civil peace and the economic status quo ahead of the individual; instead, public schools need to help every member of the public ready him or herself to contribute meaningfully and responsibly to public life. Such a dramatic shift in focus and attention will not be easy. In fact, as Michelli (2005) notes, “learning to be free may be as difficult as, or perhaps harder than gaining freedom” (p. 6). Learning to live and act in a participatory democracy is a process that is difficult and demands the best of teachers and students (Freire, 1992; Dewey, 2004/1916).

Regardless of the difficulties in moving to a more inclusive posture, there seems to be a general agreement among scholars that if the change is to take place, it will begin in the schools (Dewey, 2003a/1916, 1938; Freire, 1970; Freire & Macedo, 1987; Giroux, 2005; Fischman & McLaren, 2000; Westheimer & Kahne, 2004). Schools are uniquely positioned to address such change because they offer a singular choice. Should schools be a reflection of society or should society be a reflection of schools? (Dewey, 2004; McLaren, 1989; George, 2001). Dewey (2003a/1916, 1938) states that school’s job is not to be moved by society; rather the purpose of schooling is to move society to a more democratic practice. Following this ideal, Fischman & McLaren (2000) speak of schools as “laboratories of democracy” (p. 171).

For Dewey (2003a/1916) change happens as teachers make conscious choices about what are the best aspects of society and work to bring those aspects into the classroom while at the same time altering those forces that are not democratic, equitable, and just.

As a society becomes more enlightened, it realizes that it is responsible *not* to transmit and conserve the whole of its existing achievements, but only such as make for a better future society. The school is the chief agency for the accomplishment of this end. (Dewey, 2004/1916, p. 20)

One way for schools to take seriously the idea of being shapers of society is to take seriously the way we treat technology. As stated before, the digital native/digital immigrant metaphor would push us to accept that technology is a positive force in the life of students and needs no mediation or examination. Furthermore, that metaphor completely robs teachers of the critically moral position outlined by Dewey above and others. However, by taking up the metaphor of the digital renegade/digital captive, we position schools as places where not only the content of technology but also the use of technology is open to interrogation and negotiation.

Digital Renegades in Schools

When we take this metaphor and move it to an American educational context, the focus shifts away from inciting physical rebellion (although not necessarily physical activism such as the recent Occupy Wall Street movement) and moves to how we are thinking. In essence, the largest difference between a digital captive and a digital renegade is how their thinking is related to technologies. Digital captives (who can be of any age, race, gender, or experience level) are held captive because their technology use serves to position them as consumers of pre-determined bits of information and entertainment. For these people, Morozov would argue the Internet and its cyberworld become intellectual poppy fields and their adherents 21st century lotus eaters passing the time but not really engaging with anything of substance; instead, these people are simply marking time in a world set up, maintained, and directed by others. In educational terms, digital captive schools, students, and teachers see “computers as something to learn rather than something to think about” (Noble, 1984, p. 610). In this vein, Karchmer (2001) found that when talking about how the Internet had influenced literacy instruction, teachers identified rather mechanical elements and the focus turned to using the Internet more efficiently. In other words, with little guidance teaching involving new media seems to lead to a non-critical approach to learning and thinking about technology and schools produce digital captives whose lives help maintain a system that is creating a growing chasm of wealth and power in our country.

As Monroe (2004) points out when being computer literate is reduced to mastering a simple motor skill as in the example above, then its place as an important part in school curriculum is jeopardized. It becomes another add-on; one that is seen as a burden or an encroachment rather than an opportunity to be used skillfully. As a result, many students become less invested in schooling because it does not represent the worlds in which they interact; it denies their identities by denying the experiences that create those identities. If this is true, then the disconnect in schooling is not because we have too little technology, but because we have too much unexamined, un-thought-about technology. Monroe sees technology as a social arena in which identities are shaped. When schools and teachers value technology in this way, educators “can shift the focus from the *forms* and onto the *norms*” (p. 32). Technology, then, becomes a meaningful part of the educational system that leverages new opportunities to create more meaningful experiences for our students, and teachers are transformed into active agents in critiquing technology and making decisions regarding implementation and usage based on their expertise and knowledge.

This shift leads to an area of change in education necessitated by advents in technology—the approach to teaching technology. Not only is it imperative to value technology and shifting ways of making and representing meaning, but also schools must approach the inclusion of technology in education as a way as to help students access it in meaningful and robust ways. As Warlick (2002) says:

If sending students to the computer lab to key their reports into a word processor is called integrating technology into the curriculum, then it will fail. If having every student in the 4th grade use a comprehensive drill and practice math program is called integrating technology into the curriculum, then it will fail. If asking students to look up information that they could more easily and quickly find in an encyclopedia is called integrating technology, then it will fail.” (p. 6-7).

In other words, what is often called technology integration—superficial uses that inhibit the student’s ability to create meaning for and about his life and community in real ways—is really only a tack-on that does not serve students (Lankshear & Knobel, 1998). Such instruction can cause students problems in that they tune out and miss the skills that may be necessary to make it past the societal gatekeepers (Lankshear & Knobel, 2003; Monroe, 2004). Instead, teachers need to use technology and require students to use technologies in ways that are authentic to what true technology users do. Unfortunately, research shows that most teachers are only using technology as a new way to do the same old things (Mouza, 2003; Doherty & Orlofsky, 2001; Cuban, 2003; Lankshear & Knobel, 2003; Karchmer, 2001).

Additionally, doing “the same old things” can include discrimination and bias—at times in even more dramatic ways. Warschauer (2000) found in a survey of how new technologies are being used in k12 schools found that, even among programs considered “progressive,” students from low SES schools were engaging in logistical or perfunctory tasks with the technology, while students in high SES schools were using the technology for higher level skills such as critical analysis. Attewell & Winston (2003) found similar results in an individual survey of students. Students of color tended to use technology in uncritical ways to complete school work, e.g. downloading pictures into reports, while white students spend a much greater amount of time authoring information on the Internet using digital technologies. In fact, one study showed that low SES students got much less bang for their buck from home computers than high SES students resulting in what the authors termed “The Sesame Street Effect” (Attewell & Battle, 1999). This is where a technology that is supposed to help bridge the achievement gap of low SES students actually allows high SES students to leverage their language and literacy skills and social and cultural capital to better learn from the resource. In other words, in some sense, technology can not only continue discriminatory patterns of the past, but also it can magnify these patterns to the greater detriment of our most at-risk students.

Part of the reason for this is what happens to the value of information in a digital, or information, age. Lyotard (1984) suggests that when information becomes ubiquitous, as digital technologies have made it, it changes the value of knowledge and information, which in turn changes schools and schooling. In Lyotard’s model, because knowledge and information are available to so many so easily, their value shifts from being an end product to being a medium of exchange. In other words, what is valued is no longer having knowledge; it is what a person can do with knowledge—knowledge that they themselves do not have in the old sense of cognitively knowing; rather knowledge they have access to via any of multiple digital platforms. Tying this shift, then to issues of equity and social justice, Lyotard argues that as this change becomes more common, there will be a push to shift the focus of education from being an inherent right of every individual and a way to help all achieve greater freedom to simply being an exercise in cost effectiveness. In other words, education is no longer something that should be delivered at a high level of quality to all; rather, it becomes something to simply be delivered in the lowest cost way. Again, one particularly troubling result of this movement is that the students most at risk receive the education least likely to help them take on a larger role in a digitally mediated society (Cochran-Smith, 2004b; Darling-Hammond, 2005). Teachers must stand in opposition to all movements in this direction (of which there are many beyond and including technology and its role in schools). In other words, if new media are pushing us down a path that leads to less equity in schooling, then teachers must stand up and be “digital renegades”; they must actively counter such influences as these.

In this spirit, Giroux refers to teachers as “transformative intellectuals” (1988). Teachers in Giroux’s framework, “take active responsibility for raising serious questions about what they teach, how they are to teach, and what the larger goals are for which they are striving...They take a responsible role in shaping the purposes and conditions of schooling” (p. 126). Such a position stands in stark contrast to the production of “teacher proof” materials and the impetus to control teachers being exerted by the political extremes and exacerbated by the digital native/digital immigrant metaphor (Giroux, 1988, 2005; Freire, 1992).

Inside of schools, therefore, teachers acting as digital renegades enact what some scholars have referred to as a transformative pedagogy (Brown, Cummins, & Sayers, 2007; Warschauer & Ware, 2008). Under this approach, teachers help students use technology to “analyze their own lives and social problems, develop and publish material that addresses social issues or positively promotes their identities, and collaborate with distant partners to further exploration of social and identity issues” (Warschauer & Ware, 2008, p. 229). According to Selbar (2004), this type of approach is “a neglected framework in computer literacy programs that have been institutionalized in educational settings” (p. 81).

The currently prevailing metaphor of digital natives/digital immigrants offers teachers, students, and others no place to stand in enacting, or even suggesting, such an approach. However, by adopting the digital renegade/digital captive metaphor all people are provided with the space to argue against policies and practices that emphasize simple adoption and the marginalization of teachers.

So, what to Do?

Thinking more concretely about what the digital renegade/digital captive metaphor really means and what it might look like in schools I suggest some final thoughts. It is completely reasonable to equate what I have been arguing for with critical literacy in the Freirean sense. In fact, Selbar (2004) proposes critical literacy as the pedagogical basis for addressing our needs in schools with regards to technology and students. In this spirit, I would argue that critical literacy as applied to the idea of digital renegades/digital captives highlights at least two significant pedagogical goals that are indispensable for teaching in these times.

First, such a pedagogy will aim at helping students view technology as a tool to be manipulated and used with care as one synthesizes and present information. In this sense a digital renegade teacher will help students to ask questions about the structures and assumptions underlying technologies. It is important to note that such an approach does not require that teachers master multiple new technologies. While there will always be classes devoted to teaching the steps for using new technologies in schools, most teachers can simply allow students to use those technologies as they (or their peers) deem best to demonstrate the skills being taught. For example, a group of students researching an issue could create a webpage outlining the topic and advocating for a certain stance towards it or they could create a documentary video doing the same thing. The teacher would not need to know how to create web pages or how to use movie editing software. Instead, she would help students to make critical decisions about the ways in which they represented the message and would assess the work in accordance with appropriate guidelines. A significant part of this guidance would be to help students attain fluency with the dominant discourse. Students who come from cultures and families that live by other discourses lack the opportunity to gain access to the dominant discourse—the discourse in which power is brokered (Gee, 2008). Such a lack of knowledge continually marks those without it as outsiders who

are patronized, ignored, or both. Therefore, it is vital that all students have some facility with and access to the dominant discourse, and schools should be the places where these discourses are learned (Janks, 2010; Gee, 2008; Powell, 1999; Freire, 1970; Freire & Macedo, 1987). Otherwise, the power structure cannot be changed and pervading divisions of wealth and power will continue.

Finally, teachers will then help their students use the available tools to create authentic, critical products that address the lived situations of their lives. In other words, digital renegade teachers will help their students learn to use technologies in ways that promote democratic, just ways of living. In this vein, Freire (1974) posits that a major problem in working towards more equitable positions is, “our lack of democratic experience. This lack has been and continues to be one of the major obstacles in our democratization” (p. 19). In other words, coming from worlds where they are, in many ways, disenfranchised students often lack the skills to speak out in constructive, critical ways for their own interests and the interests of others. Approaching education as a way of helping students become digital renegades means empowering them with the habits of mind and intellectual skills necessary to speak out in meaningful and substantive ways about issues of injustice and exploitation.

When these suggestions are put together the result is what Freire (1974) calls “integration.” Integration is the result of one’s ability to understand the reality of the world in which one lives while at the same time refusing to become an inert piece in the sweep of time and society. Instead, it means to “make choices and to transform that reality” (p. 4). A person who is integrated assumes the ability to govern themselves (Gramsci, 1971). Or as Dewey puts it, such an education “increases ability to direct the course of subsequent experience” (2004, p. 74). Given the burgeoning pervasiveness of technology, it makes sense that a large part of this movement towards integration, or being a digital renegade, would in large measure deal with technology.

Creating classes, programs, and schools that take seriously the pursuit of integration work to leverage the opportunities afforded by technology to speak out about technology and broader issues of equity and justice are tall orders. Fortunately, as John Street reminds us, “the effect of technology on the way we live is partly determined by the images, ideas, and practices which are incorporated into it” (1995, p. 16). In other words, as we change our practices regarding technology to emphasize digital renegades we are changing technology and, furthermore, such power on our part means that there is time and space for such work.

However, if education’s driving metaphor regarding technology remains the digital native/digital immigrant metaphor, then it will be increasingly difficult to position teachers as agents of change and students will be increasingly divided economically and politically among pre-determined lines of color and familial income. However, by adopting a digital renegade/digital captive metaphor, teachers are provided with a place from which to argue against a simple adoption and implementation model of technology in schools and, thus, positioning themselves and their students as agents and potential agents in the struggle for economic and political equity.

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