International Journal of Instruction *July 2014 ● Vol.7, No.2*
e-ISSN: 1308-1470 ● www.e-iji.net *p-ISSN: 1694-609X*

Digital Natives: Fifth-Grade Students' Authentic and Ritualistic Engagement with Technology

Trevor Dietrich
Principal, Ed.D. McKinley Elementary School, USA *tdietrich@cnusd.k12.ca.us*

Sandra J. Balli
Prof., Ph.D. School of Education, La Sierra University, USA *sballi@lasierra.edu*

Thirty four fifth-grade students were interviewed about classroom learning and technology. Interview data were considered through Schlechty's (2002) levels of engagement framework to explore students' authentic or ritualistic engagement during technology supported lessons. Student engagement is defined as interest in and commitment to learning. Results indicated that students were engaged in classroom learning when using technology, particularly when they had control of the technology. Control and choices inherent in the learning task support authentic engagement with lesson content more than does technology alone.

Keywords: Technology, elementary education, classroom learning, authentic engagement

INTRODUCTION

This qualitative study explored classroom learning and technology with "digital native" fifth-grade students. Prensky (2001) first defined "digital natives" as individuals who have "spent their entire lives surrounded by…the toys and tools of the digital age … and therefore are native speakers of a digital language" (2001, p.1). Consequently, teachers are encouraged to engage students with digital tools, but to what extent does it translate into engagement with learning?

While students may engage with technology, Marzano (2011) differentiated student engagement with learning as a state in which students are emotionally ready for the learning task and perceive it as important and relevant. Earlier, Marks (2000) characterized student engagement with the learning task as a cognitive process requiring focused interest, attention, and perseverance.

Prensky (2006) proposed that in order to garner such interest and attention, teachers must engage "digital native" students with 21st-century technology. Likewise, Resnick (2002) argued that schools should fundamentally change and foster students who can be independent learners using modern technology with teachers there to consult. Tosh (2004) asserted that teachers should create a "learning landscape" where students participate actively in their learning through technologies like e-portfolios, social

networks, and weblogs. He suggested that by engaging students in a technologically advanced classroom, teachers would promote engagement and deeper levels of learning. Likewise, Van Eck (2006) challenged educators by suggesting that technology can re-engage students who have become "disengaged with traditional instruction" (p. 1). Evidence that digital natives learn in ways different from their predecessors warrants an understanding of technology's role for fifth-grade students who have generally mastered basic reading and writing skills and who are now poised to press ahead and assume more responsibility for their studies.

Authentic and Ritualistic Engagement

Schlechty (2002) described two levels of student engagement relevant to this study. The first level is "authentic engagement." According to Voke (2002), students have an intrinsic desire to engage in personally meaningful work. When a student understands the importance of what he or she is learning, and finds it meaningful, then the student is authentically engaged. It may be difficult for teachers to differentiate this optimal level of engagement with the second level, referred to as "ritualistic engagement," because the observable behaviors are similar. Ritualistic engagement, however, is engagement in learning activities for reasons other than the content associated with the activity (Schlechty, 2002).

Prior to the proliferation of classroom technology, Anderman and Midgley (1998) suggested that student freedom to select ways to demonstrate their learning fostered student engagement. Schlechty (2002) likewise recognized that engaging lessons included the freedom to take risks and further proposed that offering students choices allowed them greater control over how they learn. Along with control and choices, Marzano (1992) and Schlechty (2002) agreed that novelty was a quality of engaging lessons such that students are not asked to complete school work in the same fashion lesson after lesson, day after day.

Schlechty (2002) further identified a sense of audience as an engaging lesson quality. Likewise, Starnes (1999) and Diez (2000) found that students performed better on a task when they knew it would be seen by an audience beyond the classroom. Similarly, students engaged when tasks had real-world value beyond the classroom setting (Newmann, 1992; Brewster & Fager, 2000; Schlechty, 2002; Antonetti, 2009). Osberg (1997) along with Reed and McNergney (2000) pointed out that technology was a way teachers could bring the real-world to classroom tasks.

METHOD

The purpose of this qualitative study was to explore the extent to which technology engages "digital native" fifth-grade students in authentic learning (e.g., Hancock & Bettis, 2002; Tosh, 2004; Asbell-Clarke, 2011). It further examined the extent to which lesson qualities determined 10 or more years ago such as attention, novelty, control, choice, audience, and real-world tasks (e.g., Marzano,1992; Newmann,1992; Brewster

and Fager, 2000; Marks, 2000; Schlechty, 2002) are still essential for authentic engagement in learning for digital native students.

Participants and Setting

Participants were 34 students from six fifth-grade classrooms at three elementary schools. Classrooms included two from a private school and four classrooms from two public schools. Each classroom teacher had a minimum of three years experience teaching fifth grade, and each used technology devices in the classroom. Each classroom met minimum technology requirements of a computer, an LCD projector, and an interactive white board like a SMART Board™ or Mimio®, and one classroom had additional use of iPads. This ensured that student participants had experience with technology supported lessons.

The 34 students (all given pseudonyms) included 19 boys and 15 girls. Ethnic backgrounds included 20 Caucasians, 6 Hispanics, 3 African American, 2 Asian, and 1 each of Middle Eastern, Pacific Island, and Indian descent. Several students selected for interviews were second language learners, and along with the various ethnicities, the study population was representative of the three school populations.

Procedure

Teachers in each selected classroom assigned all students to respond to a writing prompt that asked students to describe being fully engaged in learning. Based on responses to the writing prompt, 34 students, who were proficient in articulating their thoughts about learning, were selected for individual interviews. The first author conducted pilot interviews with five randomly selected students not participating in the essay portion of this study. The pilot interviews were not used as data for the study, but served to refine the interview process.

The semi-structured interviews lasted approximately 30 minutes and featured the following four questions.

- Describe a time when you were so into the lesson that you didn't want it to stop, even when the recess bell rang.
- Describe the lesson during times when you felt you were really learning. What tasks were the students doing? What was the teacher doing?
- Describe the lesson when you felt bored or when you couldn't wait for the lesson to be over. What tasks were the students doing? What was the teacher doing?
- If you could tell your teachers one thing about the way you learn that would help them improve their teaching, what would it be?

Follow-up questions were open-ended and probed particular answers to elicit further understanding of student experiences.

Data Analysis

The interviews were audio recorded and transcribed verbatim. NVivo9 (QSR International Pty-Ltd., 2010) software was used to organize the text-based data for

analysis. A transcript of each interview underwent line by line coding. Line by line coding names each line of raw data in order to ensure that no potential pattern goes unnoticed. In this way, interview data can "take on vivid meanings" (Charmaz, 2006 p. 50). Student interview comments were subsequently categorized and examined for patterns. Patterns were considered for indications of authentic or ritualistic engagement with learning based on how student comments referred to the technology being used and the lesson content being taught.

RESULTS

The majority of students recognized that using technology such as interactive whiteboards, iPads, and computers was generally an engaging way to learn. Findings regarding these devices and their intersection with authentic or ritualistic lesson engagement follow:

Interactive Whiteboards

Teachers who used interactive whiteboards impacted students' perceptions of the technology supported lessons. Frank offered, "He sometimes puts the video…from his computer…on the Promethean Board [interactive whiteboard], and we like doing that a lot. It's like sort of watching a movie but we're still learning. It's like grabbing our attention." Frank spoke generally about learning, so it could be assumed that if the technology invited Frank's attention to content that interested him, then he was authentically engaged. On the other hand, it is somewhat unclear whether Frank was more interested in the technology itself, or whether the technology served as a tool to enhance his interest in the content.

Emma described taking notes when the teacher used the Promethean Board. "It's really fun to do because sometimes she lets us do a problem on the board." Emma added that she wished she had her own interactive whiteboard at home. Gabe acknowledged the Promethean Board in his classroom as well. "It's cool. They sometimes call us up to do stuff on it. I like doing that." Gabe commented about waiting while other students had their turn, "I just want to go. I'm just waiting, trying to get my turn up on the Promethean Board." Gabe said the use of technology gets his attention. Ernie offered the reason, "We don't know how it works so it interests us. We're like 'how's it doing that?' We are pretty interested." Justin offered similar sentiments, "Well, it's cool technology." Heidi said, "I think it's good to use technology on the overhead [interactive whiteboard] or go to the computer lab because then you're having fun."

Emma, Gabe, Justin, and Heidi described the "cool" and "fun" aspects of the technology. These descriptions, along with "waiting for a turn," could suggest that the technology itself, rather than the lesson content engaged students. In this case, perceived focus on the technology, coupled with little or no mention of the lesson content, aligns more with ritualistic engagement where students engage in the lesson for reasons other than the content. Nevertheless, according to Schlechty (2002), students

can learn with either authentic or ritualistic lesson engagement, but authentic engagement is optimal.

Fay referred to the daily oral language activity, "I like the Promethean Board, it makes me pay more attention…I like learning with electronics." Her advice for teachers, "I would tell them to use more electronics because that grabs my attention and keeps me going," she said. When asked if the traditional whiteboard keeps his attention, Justin said "Not really." Indeed, no student referred to the traditional whiteboard as an engaging lesson tool.

Fay and Justin suggested that traditional visual aid tools do not grab attention in the same way as digital tools. Attention has been previously identified as a lesson quality that supports authentic learning. Fay did not specifically refer to lesson content, but she paid "attention" and indicated that the technology "keeps me going" on task. Attention and persistence suggests authentic engagement if the content is perceived as meaningful.

iPads

One of the three participating schools had iPads available for instructional use. This interactive electronic device prompted Irvin's comment, "I like doing iPad stuff." Of the fifteen interviews conducted at the school, thirteen students referenced the iPad. When asked what the teacher did to keep the students excited about learning, Billy replied, "We usually use technology such as iPads which is really fun." He added a use for the iPad saying, "We can make sentences and put our own skits on it and show it to our teacher." Kaleb described why he liked the iPad, "Because you get your own independent time to actually find out yourself without him telling you, so it gets more challenging."

Referring to the application "Puppet Pals," Billy described using the iPad to create skits with animated puppets and voices to show the class. Darren characterized the application with a sense of choice and control, "We had to pretend we were teaching complete novices about pronouns. You can press record and you can move the Puppet Pals around and you can use your voice for them…that was really good." Ernie added, "It's generally fun because she has this weird application where there are these characters, and you talk into it and they'll repeat it once you start recording…we'll do that for English and History sometimes."

The iPad opportunities afforded the students control in using the electronic device for making sentences and creating skits. References to novel ways to demonstrate understanding of the content suggested authentic engagement with learning, and Abigail submitted that such learning can feel like play:

> We do writing assignments where we play on Puppet Pals and Doodle Buddies [another iPad application] and you just want to touch the iPad and it makes you want to do more than just write answers on a sheet of paper…It's electronic and you just want to touch it because it's new and it's cool…you feel like you're just playing…and it feels like you really aren't at school.

Other times the teacher used the iPad as an incentive for desired learning behaviors. Carol mentioned, "Our teacher brought out the iPad and if we answered the right question she let us make a design on the Doodle Buddies….You just wanted to get the right answers so you could do that. It could be more fun than just writing out the answers on a sheet of paper."

One of the benefits of the iPad is that it differs from the interactive whiteboard because it offers more learner involvement and control. Those who described the lesson content in connection with control of their own learning and audience presentations suggested authentic engagement. On the other hand, the opportunity to use technology as a reward for correct answers was more consistent with ritualistic engagement.

Computers

Students liked technology-supported lessons, preferring to be the ones using the technology rather than observing others use it. This was further evidenced in student perceptions about computers. Computers, now common in classrooms, still capture student interest. As Frank put it:

> When we're in the computer lab…sometimes the teacher would say we are going to do a project [and] you have to do some research…We would be happy because we are actually being on the computer but we're [also] learning about what we are doing in that project.

Fay summed up the sentiment saying, "I like to use computers." When students discussed using computers, they typically referred to the opportunity to choose research topics as well as answer computer assisted questions and receive instant feedback. Jackie reported, "Right when you click to check answers it tells you what things you got right or wrong. Then you're not waiting around wondering…you get to instantly figure out what you did wrong." Students at each school described using computers for research. For example, Gillian said, "With electro-magnets and science, we had to go on Google to find out about it. We also researched a person. It had to be a Native American…who helped the United States." Heidi added:

> We were learning about presidents. We sat down at the computer and we started learning about things and he [the teacher] was telling us about these web sites that would be good. And I felt like sort of discovering new things about different people and kind of how it all works together.

Irma agreed, "What we do is PowerPoint on the computer and I really enjoy that stuff. It's really fun and it helps you learn." Jackie appreciated the time her teacher spent working with computers, "I think he's pretty good because…we would go in the computer lab and go on certain websites and do stuff." Irma added, "I did a PowerPoint about volcanoes and every time I researched something I'm learning a lot and learning how they form and a bunch of cool stuff."

One of the projects typically assigned fifth-grade students is a State report. All of the students reported that they learned a great deal from the State report project; however, none of the students indicated that the teacher provided the information. Steve said, "She really didn't teach us, we had to type it on the computer to learn a lot." When asked how he learned so much about his State, Nick simply stated, "I searched it on the computer." Paul expressed why learning with computer support was important to him, "Because sometimes you can't picture stuff in the book…or picture stuff in the mind. But when you go on the computer, you can actually see it for yourself with your own eyes." With this project, technology was used to incorporate real-world investigative learning without students relying on their teacher to provide the information.

Adding to the accumulation of student comments that referenced why integrating technology with student control works, Todd said "It just makes me concentrate more because it's just me I guess…I'm doing the actual work, and it's just me instead of the teacher or another kid." Nancy concurred with Todd's notion of focusing on the task more easily when using the computer independently, "I researched it and I just kept reading because it was really interesting after a while." Deepening interest in the content, student control, and perseverance, as suggested in these descriptions is the essence of authentic engagement.

Other student comments summed up perspectives on the independent use of computers. Paul reported, "I think it's great because we use the computer to pull up pages for our homework and stuff…she doesn't have us look at a worksheet and be boring." Jackie agreed that searching the Internet for answers to questions is preferred to the prescribed text, "If you're just reading it from the book, and you have questions and just continue reading, you can't learn."

Using computers authentically engaged digital natives because, according to students, it was more than simply completing a pre-determined computer exercise. Rather, they were responsible for their own learning, they prepared presentations for an audience other than the teacher, they had choices such as in the State report, and using computers and the Internet aligned with the real world outside of school.

Technology and Disengagement

Students offered caveats regarding the use of technology as an educational tool. Henry, referring to the interactive whiteboard to make corrections in front of the class, lamented "I'm sort of nervous, especially during the daily oral language because there are a lot of things wrong in there…I'm like, oh man, and I get pretty nervous." Ernie likewise described the pressures associated with using the interactive whiteboard, "I try to do the best that I can so I don't look foolish in front of everyone else." Carol, from the same class, identified how the interactive whiteboard could be less than exciting. She said, "When we're doing DOL and you're correcting it and you're just like, 'when will it stop? Can you make it more exciting?'" According to Carol, the daily oral language lesson could be improved if she was in control of the technology rather than

observing other students in control. She added, "I just think it seems like everything is going to take a longer time because you're not actually doing it."

Students found the interactive whiteboard engaging when they used it, less so when the teacher used it for extensive presentations, and students were disengaged when other students used it. When asked about other students' turns, Irvin said "Sometimes I wander off." Nick added, "I don't really care, but it is fun writing on it," referring to his own turn. When asked if he paid attention when other students were using the interactive whiteboard, Russ along with Todd simply stated, "Probably not," and "Really, truthfully, no." Gabe agreed, "I just want them to call me so I can get up there." Billy reiterated the importance of finding a balance in who uses the technology, "Well it is technology and it's not something I get to use every day, so it would be a lot more interesting to get a little offer to use it once in a while."

These students referred to the technology itself rather than the lesson content, suggesting ritualistic engagement, or even disengagement when observing others. Students raised an interesting point for consideration. When the technology required student demonstrations in front of classmates, their feelings ranged from excitement to have a turn, to anxiety if challenging task foreshadowed potential embarrassment.

Technology Proficiency

Some students acknowledged frustration if teachers lacked proficiency in integrating technology with lessons. In most cases, teachers were using the interactive whiteboards as nothing more than traditional whiteboards. Irvin said, "Usually it's kind of like a worksheet on the Promethean Board…we fill it out." Luke commented, "She just copied the math book on there. We have an eBook so we just do the lesson on there so she doesn't have to write everything down."

Others expressed confusion when the teacher was not experienced with technology, suggesting that the more technically capable teachers know how to engage students. Mandy reported that when teachers get confused with how the technology works, she would just prefer the traditional whiteboard. Consequently, a lack of teacher technical skill prompted some students to suggest that the novelty associated with technology had worn off. Paula complained, "Sometimes it's over the top where she has like an hour long slide show…For me I don't really need a whole bunch of technology. I'm good with just a whiteboard and a pen." While this comment was an outlier among digital natives; it did allude once again to who controlled the technology and learning. Carol concurred, "She's using the Promethean Board and she just keeps going and going and it doesn't look like you're ever going to stop taking notes. It's like, 'can I go to sleep now?'" Without incorporating other engaging qualities such as student control or choice, students can become increasingly disengaged during long teacher-directed presentations.

Technology Access

Technology appeared most engaging when students had individual access to a device. Debbie proposed that students should have access to their own iPad in the classroom. She highlighted students' desire to be active participants, "Then we could all do it…ourselves…it will stay in our brain and we'll learn it." Ernie noted some pitfalls, however, in a one-on-one technology-student learning model.

> I think that would help pay attention for some people but not all of them because some would do other things on it like they would be searching for no reason…I think it would help out a lot but if someone was watching them though.

DISCUSSION

This study sought to explore the extent to which technology engaged "digital native" fifth-grade students in authentic learning using Schlechty's (2002) levels of authentic and ritualistic engagement.

Attention and Novelty

Student interviews confirmed that technology in the classroom grabs attention because it offers novelty and variety compared to lessons taught in a traditional manner. Attention can come just from the fact that some students may not have access to newer technology, and therefore they do not understand how it works. The novelty of technology devices, particularly when introduced by a proficient teacher, promotes student recognition of its educational value to support information access, communication, and a way to demonstrate acquired understandings.

However, if the teacher simply uses the device to show lecture notes and "drone on" about a particular topic, the novelty of the digital device wears off in time. Likewise, when devices are predominately in the control of the teacher or other students, attention wanes, and the technology is viewed as another teacher tool for direct instruction. At most, less effective integration between technology and the content could signal ritualistic engagement for the external reason that the technology itself may be interesting.

Control and Choice

Student comments demonstrated that technology supports authentic engagement, but typically, and most notably, only when individual students had access and control of the technology themselves. Students repeatedly noted that the State report project with individual computer access offered choice in which State to study together with control of which websites to use, what information to gather, and how to depict learning. When control and choice were present, student comments focused more on the lesson content and less on the technology itself. Hence, although technology is necessary to prompt engagement for digital natives, it is not sufficient in and of itself to spark authentic

engagement with learning the content. The opportunity for control and choice is central to learning with technology. In this way, learning is akin to learning in the real world.

Real World Learning

Students recognized the real-world use of technology to facilitate various types of learning, especially when assigned research projects. Further, students frequently described such technology supported projects with the observation that the teacher simply facilitated the learning. Outside of school, students' experience is typically rich with technology, from emailing, texting, video gaming, to information accessing via the Internet. When students were afforded the opportunity to have control, choices, and learn how to use what they view as real-world technology tools, they were more likely to be authentically engaged in a lesson.

Authentic and Ritualistic Engagement

Students were deemed ritualistically engaged when interview data suggested more interest in the technology than in the lesson information. According to Schlechty (2002), both authentic engagement and ritualistic engagement generally yield similar short term results when students are on task. However, authentic engagement, where the lesson information is paramount, aligns with the objectives of education in that students take an interest in and responsibility for their own learning.

This study concurs with previous research suggesting that digital natives, those who have lived their entire lives in the digital age, prefer technology integrated instruction over traditional instructional pedagogy (Kennedy, Judd, Churchward, & Gray, 2008; Van Eck, 2006; Resnick, 2002; Prensky, 2006; Skiba & Barton, 2006). Nevertheless, study participants recognized the limitations of technology when isolated from other engaging lesson qualities. In disaggregating authentic and ritualistic engagement for the students in this study, we suggest that when technology facilitates a meaningful outcome and when students have choices and the opportunity to control the technology to support their learning, students are more authentically engaged than when they reference the technology itself as "cool" and take little notice of the lesson content.

RECOMMENDATIONS

The results of this study clearly indicate that digital natives need 21st-century lessons that feature not only technology but simultaneously include other aspects of authentic engagement such as control, choice, and real-world tasks. As described by study participants, technology in the classroom can be engaging; however, without other essential lesson qualities, it can have the opposite effect.

In promoting technology-supported lessons, those that authentically engage students in the content, the first consideration is teacher-designed lessons that promote more student access to technology devices. Such access allows student control, versus the use of whole group instruction where the teacher is the primary technology user. For

example, interactive white boards are primarily designed for whole group instruction. Digital natives are intrigued by the interactive white board when they have a turn to use it. However, only one student or one adult is usually using the device at a time. This leaves the remainder of the students as bystanders. Student comments suggested growing boredom when classmates were using the interactive whiteboards. In order to garner its full potential, interactive whiteboards must be used as a means of learning in which digital natives take control with teachers as facilitators.

For example, teachers can incorporate other engaging lesson qualities while using whole class technology in order to minimize the time students spend watching others use it. If the lesson plan calls for one student to use the interactive whiteboard, teachers might plan a cooperative learning activity associated with the lesson or a personal response opportunity from the remaining students. The idea is to keep all students actively engaged rather than passively observing.

Second, principals should consider long range plans to increase the number of available technology devices with the goal of more student access. One way to accomplish this is to consider an open source solution where students are encouraged to bring their own technology to school like smart phones, iPads, or tablet PCs if they own such devices. As long as the infrastructure is in place to accommodate Internet access, schools can provide a 21st-century environment without the financial burden of purchasing as many individual devices.

Third, technology integration is problematic if teacher training is insufficient. Some student comments indicated that teachers were simply layering technology over previously established pedagogy. Rather than using an overhead projector, some teachers were using an interactive whiteboard, but with the same lecture style strategy. A shift in instructional delivery is necessary to capitalize on the potential engaging qualities technology offers. Rather than being the centre of instruction, teachers should increasingly become facilitators of learning with inquiry-based lessons using technology a vehicle for information access.

Fourth, the potential for students to get off task increases as the number of available devices increases. If, for example, every student had an iPad in the classroom there would be great potential for high levels of authentic learning. However, teachers must determine how to monitor a classroom full of students, each with his or her iPad, to avoid the potential of students playing non-educational games, emailing friends, or otherwise engaging in off-task behaviours.

Studies on emerging technology and the role technology plays in student engagement are essential in a rapidly changing digital world. Part of the technology lure for digital natives is having the latest, greatest device. Schools have a hard time keeping up with the pace at which technology changes. If the real world has technology that far surpasses what is available in the classroom, then classroom technology is less likely to engage students. Nevertheless, when the novelty begins to fade, teachers can still foster authentic engagement if they facilitate the use of available technology to support real-world meaningful tasks that offer students choices and control of their own learning.

Information from this manuscript was presented at the:

International Technology, Education, & Development Conference, Valencia, Spain. March 4-6, 2013

REFERENCES

Anderman, L., & Midgley, C. (1998). *Motivation and Middle School Students.* ERIC Digest, ED421281(www.eric.ed.gov)

Antonetti, J. V. (2009). *Writing as a Measure and Model of Thinking: A MIRA process.* Phoenix, AZ: Buse Printing.

Asbell-Clarke, J. (2011, September 1). The ecology of a gaming environment. *Applied Research in Virtual Environments for Learning*, 7-11.

Brewster, C., & Fager, J. (2000). I*ncreasing student engagement and motivation: From time on task to homework.* Portland, OR: Office of Educational Research and Improvement (Northwest regional Educational Laboratory).

Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis.* Thousand Oaks, CA: Sage.

Diez, M. (2000, May 3). *Teachers, Assessment, and the Standards Movement*. Education Week. Retrieved February 29, 2012, from http://www.edweek.org/ew/articles/2000/05/03/34diez.h19.htmll??qs=Diez

Hancock, V., & Betts, F. (2002, April 1). *Back to the Future: Preparing Learners for Academic Success in 2004.* Learning and Leading with Technology, 29(7), 10-14.

Kennedy, G., Judd, T., Churchward, A., & Gray, K. (2008). First Year Students' Experiences with Technology: Are they Really Digital Natives? *Australasian Journal of Educational Technology*, *24*(1), 108-122.

Marks, H. M. (2000). *Student Engagement in Instructional Activity: Patterns in the Elementary, Middle, and High School Years*. American Educational Research Journal, 37(1), 153-184.

Marzano, R. J. (1992). *A Different Kind of Classroom: Teaching with Dimensions of Learning.* Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R., Pickering, D., & Pollock, J. (2001). *Classroom Instruction that Works: Research Based Strategies for Increasing Student Achievement.* Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R., & Pickering, D. (2011). *The Highly Engaged Classroom.* Bloomington, IN: Marzano Research Laboratory.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. (1992). *The Significance and Sources of Student Engagement.* In F. M. Newmann (Ed.), Student Engagement and Achievement in American Secondary Schools (pp. 11-39). New York, NY: Teachers College Press.

NVivo (Version 9.0) [Computer software]. Australia: www.qsinternational.com

Osberg, K. M. (1997). *Constructivism in practice: The case for meaning-making in the virtual world.* University of Washington.

Prensky, M. (2001, October 1). *Digital Natives, Digital Immigrants.* MCB University Press, 9(5), 1-6.

Prensky, M. (2006, January 1). *Listen to the Natives*. Educational Leadership, 63(4), 8-13.

Reed, D. S., & McNergney, R. F. (2000). *Evaluating Technology-Based Curriculum Materials* (Report No. EDO-SP-2000-5). Washington, DC: ERIC Clearinghouse on Teaching and Teacher Educational Management. (ERIC Document Reproduction Service No. ED449118)

Resnick, M. (2002). *Rethinking Learning in the Digital Age*. In G. Kirkman (Ed.), The Global Information Technology Report: Readiness for the Networked World (pp. 32-37). UK: Oxford University Press.

Schlechty, P. C. (2002). *Working on the Work: An Action Plan for Teachers, Principals, and Superintendents.* San Francisco, CA: Jossey-Bass.

Schlechty, P. C. (2011). *Engaging students: The next level of working on the work.* San Francisco, CA: Jossey-Bass.

Skiba, D., & Barton, A. (2006, May 31). *Adapting your Teaching to Accommodate the Next Generation of Learners.* The Online Journal of Issues in Nursing, 11(2), Manuscript 4.

Starnes, B. A. (1999). *The Foxfire Approach to Teaching and Learning: John Dewey, Experiential Learning, and the Core Practices.* Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (Eric Document Reproduction Service No. ED426826).

Tosh, D. (2004, July 15). *Creation of a Learning Landscape: Web Blogging and Social Networking in the Context of E-Portfolios*. Live Journal. Retrieved May 10, 20010, from http://www.livejournal.com.

Van Eck, R. (2006, March 1). *Digital game-based learning: It's not just the digital natives who are restless.* EDUCAUSE Review, 41(2), 1-16.

Voke, H. (2002, February). *Motivating Students to Learn*. ASCD Info brief, 2(28). Retrieved March 2, 2012 from http://www.ascd.org/publications/newsletters/policy-priorities/feb02/num28/toc.aspx

Turkish Abstract

Teknolojik Okur-Yazarlar: 5. Sınıf Öğrencilerinin Teknolojiyle Otantik ve Ritüelistik Katılımları

34 öğrenciyle sınıf içi öğrenme ve teknoloji hakkında görüşme yapılmıştır. Teknoloji destekli dersler sırasında öğrencilerin otantik ve ritualistik katılımlarını belirlemek için görüşmelerden elde edilen veriler Schlechty'nin (2002) katılım çerçevesi kapsamında dikkate alınmıştır. Öğrenci katılımı öğrenmeye olan ilgi ve bağlılık olarak tanımlanmaktadır. Bulgular öğrencilerin sınıf içi öğrenmeye teknoloji kullanırken özellikle teknolojiyi kontrol ederken daha fazla katıldıklarını göstermiştir. Öğrenme aktivitelerindeki kontrol ve seçenek sunma derse olan ilgiyi sadece teknolojinin artırdığından daha fazla desteklemektedir.

Anahtar Kelimeler: Teknoloji, ilköğretim eğitimi, sınıf içi öğrenme, otantik katılım

French Abstract

Natifs du Numérique: Étudiants de Cinquième année Engagement Authentique et Ritualiste avec Technologie

Trente-quatre étudiants de cinquième année ont été interviewés de l'apprentissage de salle de classe et la technologie. On a considéré des données d'entretien par Schlechty (2002) les niveaux de cadre d'engagement d'explorer l'engagement authentique ou ritualiste des étudiants pendant la technologie des leçons supportées. L'engagement d'étudiant est défini comme l'intérêt et l'engagement à l'apprentissage. Les résultats ont indiqué que les étudiants ont été engagés dans la salle de classe apprenant en utilisant la technologie, particulièrement quand ils avaient le contrôle de la technologie. Le contrôle et des choix inhérents à la tâche apprenante supportent l'engagement authentique avec la leçon contentent plus que fait la technologie seule.

Mots-clés: Enseignement technologique, élementaire, apprentissage de salle de classe, engagement authentique

Arabic Abstract

المواطنون الرقمية :حقيقي وطقوسي اشتراك طلاب المرحلة الخامس "مع تكنولوجيا

وأجريت مقابلات مع أربعة وثلاثين طالبا في المرحلة الخامس حول التعليم في
وأجريت مقابلات مع أربعة وثلاثين طالبا في المرحلة الخامس حول التعليم في الصفوف والتكنولوجيا .واعتبرت البيانات من خلال مقابلة مستويات Schlechty (2002) في إطار المشاركة لاستكشاف إشتراك الطلاب أصيلة أو الشعائرية خلال الدروس.المدعوم بالتكنولوجيا ويعرف مشاركة الطلاب كفائدة والالتزام بالتعلم .وأشارت النتائج إلى أن الطلاب كانوا يعملون في التعليم في المدارس عند استخدام التكنولوجيا، ولا سيما عندما كان السيطرة على التكنولوجيا .التحكم والخيارات الملازمة في تعلم الدعم المهمة الاشتراك حقيقية مع محتوى الدرس أكثر مما يفعل التكنولوجيا وحدها.

الكلمات المهمة :التكنولوجيا، التعليم الابتدائي، الفصول التعليمية، المشاركة الحقيقية.