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"It's a Double Edged Sword This Technology Business": Secondary English Teachers' Perspectives On a School-Wide Laptop Technology Initiative

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Perspectives On a School-Wide Laptop Technology Initiative

by

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This study reports on four clusters of conflicts experienced by secondary English teachers that

contributed to their ambivalence about technology in English instruction in the context of a

school-wide laptop technology initiative.

Abstract

In response to national technology mandates, schools across the United States have committed themselves to laptop technology programs as a way to encourage student-centered learning and critical thinking in collaborative classrooms (Getting America's Students Ready Report, 1996). This study reports on a great deal of teacher ambivalence about technology in English instruction, in the context of a school-wide laptop technology initiative. Four larger clusters of conflict contributed to this ambivalence: a) conflicts around institutional control in implementation of the laptop program and teacher agency, b) conflicts around political pressures for standardized testing and technology mandates, c) conflicts around technology uses in the curriculum and technology allocation in specific class types, and d) conflicts around professional identity and the challenges that both student and teacher technology use brought to these identities. The study concludes that these teachers needed to be given greater agency in planning and implementing the laptop technology initiative, and in revising their curriculum to embrace this new technology, as well as the necessary professional development to prepare them for such an educational innovation.

"It's a Double Edged Sword This Technology Business": Secondary English Teachers'

Perspectives On a School-Wide Laptop Technology Initiative

Introduction

Schools across the United States have committed themselves to laptop technology programs as a way to encourage information processing and problem solving, student-centered learning, and critical thinking in collaborative classrooms (Getting America's Students Ready Report, 1996). In a larger historical context, laptop technology initiatives are the latest in a long line of technological discoveries that enhance the narrative of progressive goals of technology envisioned for education, literacy, and learning (Selfe, 2000). Cuban (1993) summarized succinctly the impulses underlying that narrative. These include: a) the impulse for being up to date with the computerized job market and daily life routines, b) the impulse for creating opportunities for active and collaborative problem-based learning through interactive telecommunications-based classrooms, and c) the impulse for productivity, achieved with the latest, fastest, and most economic computerized tools.

The positive goals of technology for education cannot, however, be realized by computers alone; computers are only a part of a complicated scenario of educational change. The key element in the change process is the teacher. As Fulkerth (1992) explains, "the most important component in a change process is not the innovation itself, but the beliefs and practices of the people who are affected by it" (p. 1). Yet, previous research suggests that teachers are often not part of the leadership that discusses, plans, and makes decisions about educational change (Fullan & Stiegelbauer, 1991;Toll, 2001).

As technology continues to be implemented into school systems in a top-down fashion, policy makers and administrators, who seem to be preoccupied predominantly with the issues around computer availability in American schools, often fail to realize that physical availability of technology is not enough to bring about the change they advocate for (Cuban, 2001). It is *how* teachers and students use technology and how they envision technology as a part of curriculum and within individual school systems that can make a difference.

Few empirical studies have examined English teachers' perspectives on the complex challenges that information technology brings into English classrooms (Baker, 2001; Barrell, 1999; Karchmer, 2001; Windschitl & Sahl, 2002). There is also little research that examines teachers' perspectives on open-ended technology initiatives that might allow for a modicum of freedom, flexibility, and creativity among administrators infusing technology into school systems (Harris, 2001; Putt, Henderson & Patching, 1996; Zhao, 1998).

This study brings secondary English teachers' perspectives into the discussion on technological change in English instruction, recognizing their salient role in this process. It also examines secondary English teachers' perspectives in the context of a school-wide laptop technology initiative. As such, the study addressed the following research questions: 1) What are secondary English teachers' attitudes towards technology in English instruction in the context of a school-wide laptop technology initiative? 2) What are the sources and influences that shape these attitudes?

Background

The term *technology,* as it applies in this study, is associated predominantly with computer technology, electronic communication (the Internet, e-mail, chat-rooms), and multimedia design tools (digital audio and video). The definition is inclusive in that it embraces

the machine--hardware and its peripherals (printers, scanners, or servers), software (Inspiration, PowerPoint, or Censor-a central monitoring system), as well as educational applications (multimedia presentations, online discussions or reading). Even though the teachers in this study tended to use the terms *technology* and *laptop technology* interchangeably, we must bear in mind that most of the teachers in this study focused on their experiences with laptop technology rather than desktop technology itself. This is because they were part of a laptop program implemented in their educational setting. Windschitl and Sahl (2002) have noted the unique characteristics of laptop computers with regard to both the technology itself (portability, unlimited access at school and home, network connectivity and telecommunications functions, high processing power) and the broader issues accompanying the introduction of laptops into the school system that involve "curricular, administrative, fiscal, and even cultural concerns" (p.170).

English instruction, as understood in this study, is inclusive of learning and teaching theory and pedagogy in the secondary English classroom. Thus, much of the discussion about instruction in this study focuses on how technology influences secondary English teachers' beliefs about literacy and its teaching, their perceptions of its fit for the high school English curriculum, as well as its influence on teachers' perceived roles in the secondary English classroom.

The term *educational change,* as it applies in this study, refers to change that involves implementation of school-wide initiatives of either a pedagogical or technological nature, such as the introduction of a new math program or television into school systems. The implementation of a school-wide wireless laptop program presented in this study is an example of educational change as defined in this study.

Finally, my position in this study was that of an insider, who had studied technology application in English education and used a great deal of technology in university teaching and professional presentations. To guard against personal biases and the tendency to speak for my informants, I shared my data analysis and writing with my informants and also with outside readers to verify my interpretation of my informants' perspectives (Stake, 1995).

Laptop Programs and Teachers

Research on the latest educational initiatives such as laptop technology programs, viewed by their proponents as a lever for change (Getting America's Students Ready, 1996; NCLB, 2002; Zehr, 2000), continues to support the tendency among legislators and administrators to exclude teachers' perspectives. The scant research available (Gottfried & McFeely, 1997/98; Healey, 1999; Ratnersar, 1998; Wilkes, 2001) tends to focus on access and program implementation issues rather than on teachers' and students' perspectives with regard to this particular technology's influence on their educational experiences. For example, Minkel (2002) reports on Maine's Department of Education initiative to bring laptops into middle schools, focusing on the costs (a 372 million dollar four-year contract with Apple Computer), technology deployed (Apple ibooks), and the population involved (33,000 students and 3,000 teachers). Zardoya and Fico (2001) also included repair and maintenance as well as well as professional development procedures in their published laptop project overview.

Rideout (2002) cited the most common methods of laptop technology implementation in the school system. These included: a) providing wireless laptops to each student and teacher at and/or outside the school site, b) providing only the teacher with the laptop and not the students, and c) providing wireless laptops in a mobile cart to be used in any areas of the school building. Although Rideout's school district started to investigate the three methods in different school

settings (middle and high schools), the results from this research are not yet available, since as of this writing, the research is still in progress.

Despite a general tendency among legislators and administrators to exclude teachers in the planning and implementation of educational change, there have been some successful attempts to elicit teachers' perspectives on laptop technology, implementation policy, and its potential for improving instruction and students' learning. For example, Parr's (1999) study on New Zealand teachers' perspectives on a laptop program implemented into their middle and high school systems noted that providing resources and professional training were not sufficient, in themselves, to ensure a higher percentage of teachers teaching with technology, for, as she argued, "there still appeared to be a need to connect technological knowledge with pedagogical knowledge" (p.5). She also found that the teachers in her study had little awareness of the possibilities that technology could open up for their instructional practices and they tended to use technology as "the electronic equivalent of a content-based textbook" (p.5).

More recently, Windschitl and Sahl (2002), in an ethnographic and interview study on laptop computer use among middle-school teachers, found that teachers' decisions about the use of laptop technology in their classrooms were shaped to a great degree by the social context of the settings in which they were teaching. The researchers classified the settings in which teachers interacted into two broad categories: "learning about" settings, and "learning how to" settings (p.188). In the "learning about" settings, teachers learned about the school's "institutional priorities and performance expectations, and the range of uses for technology that was proper and possible in that context" (p.188). In the "learning how to" settings, the teachers focused on "their immediate concerns about using laptops in specific classroom situations" (p.190). Learning about settings were characterized by "institutional voices" (p.188) and included faculty

meetings, parent meetings, and regional laptop "summits" with faculty from other schools, whereas learning how to settings were characterized by "conversational voices" (p.190) and included professional development workshops, informal conversations among teacher colleagues, or shared planning periods. Both settings not only exposed the teachers to ideas, trends, and thinking, but also shaped their own use and beliefs about technology in their own classroom practices.

This study continues to examine teachers' thinking about laptop technology initiatives, uncovering their perspectives on laptop technology in English instruction in the context of a school-wide laptop technology initiative, the Voluntary Laptop Initiative (VLI). All names of informants, geographical locations, and educational institutions are fictitious.

Methodology

Research Design

This study was informed by qualitative research methodology rooted in interpretive symbolic interactionism (Blumer, 1969) and case study design (Creswell, 1998). In using interpretive symbolic interactionism, the researcher was able to seek teachers' understandings of technology, as perceived by the teachers themselves, who in their capacity as "actors" involved with the laptop program initiative, not only reflected on their belief systems and instructional practices with laptop technology, but also on the origin of these beliefs and practices. Using a case study design allowed the researcher to ascertain multiple rather than single interpretations among English teachers participating in the laptop program. The researcher obtained these interpretations in a single high school context during a period of two academic years, from October 2000 to May 2002.

Context of the Study: The Voluntary Laptop Initiative

The key agents in promoting the Voluntary Laptop Initiative were the superintendent and the community. The program sponsors provided wireless Internet connected laptops to students on a lease basis upon entrance into the program. The area Educational Services Board sponsored 60 % of the VLI initiative. Students' parents covered the rest of the cost, which amounted to a $25 per month payment for three years. A school district foundation offered support to students who needed financial assistance to be able to join the program. The standard technology that both teachers and students had access to through the VLI initiative included the following items: carts with access to power units, projectors with wide screens, Censor and Blackboard, which is the central monitoring system for teachers to monitor individual students' screens and to post announcements to all students simultaneously, and finally access to software programs such as Microsoft Word, Excel, PowerPoint, and Inspiration, as well as a wireless Internet network system. The school offered intensive laptop technology training to teachers during summer institutes and throughout the academic year. In addition, the school hired technical support and technology teacher specialists to assist both teachers and students in troubleshooting technical problems and in integrating technology into their learning and teaching.

Participants

The informants for this study were a group of six secondary English teachers who joined the school-wide wireless laptop initiative and who volunteered to participate in this study. Reflecting the racial makeup of the English department, they were all Caucasians; they varied in age, gender, teaching experience, technological background, and importantly, attitudes towards technology. Detailed teacher profiles are presented in Table 1 below.

<div align="center">Insert Table 1 about here</div>

Data Collection

Interviewing was the primary source of data collection. Interviews were conducted with an open-ended protocol, asking teachers how they felt about laptop technology implementation and the professional support they received from the administration, as well as how they perceived laptop technology affected their professional identity and beliefs about literacy, and the English curriculum. The protocol questions were supplemented with follow-up questions asking the teachers either to elaborate upon what they were saying or to clarify what was confusing to the researcher in teachers' interpretations. The researcher also interviewed laptop program administrators and curriculum and staff development coordinators to learn about the program's evolution as well as to juxtapose teachers' perspectives with administrators' thinking as well as their programmatic agendas.

 The secondary sources of data collection in this study were classroom observations supplemented with teachers' classroom artifacts. The purpose of the secondary sources was to corroborate and clarify emerging interpretations from the interviews as well as to generate probes for future interviews (Creswell, 1998). The secondary sources also allowed the researcher to juxtapose teachers' beliefs about technology with their actual technology applications in their classroom practices.

Data Analysis

Interview transcripts and observation field notes were annotated with in-text commentary such as questions, preliminary interpretations and coding systems as well as cross references to other teachers' thinking and relevant theory. To extract coding categories, the researcher relied on two methods: open and axial coding (Strauss & Corbin, 1998) and clustering (Bogdan & Biklen, 1992). The first method allowed the researcher to identify general coding patterns

("open coding") and to compare/contrast these patterns for an individual teacher and across different teachers ("axial coding"). Table 2 features open and axial coding with annotated commentary as applied in this study.

Insert Table 2 and 3 about here

The second method helped the researcher to cluster smaller coding patterns into bigger coding categories. For instance, within the "perspectives codes" cluster, the researcher included some of the following categories: "attitudes/feelings," "personal conflicts," "administration/teacher visions," "classroom challenges," and "curricular and instructional dilemmas." The bigger coding clusters constituted subsequently emerging themes (Miles & Huberman, 1984), which were then inductively analyzed in light of the major research questions (see Table 3 for an example of theme coding, "Teachers' perspectives on technology and the laptop program implementation"). Major themes from this study are discussed in the findings section below.

Findings

When asked to describe their attitudes towards technology, secondary English teachers in this study answered this question with an analysis of numerous conflicts and dilemmas that technology posed to them in their daily classroom practices. As a result of these multiple dilemmas, the teachers in this study revealed a great deal of ambivalence about technology in English instruction in the context of a school-wide laptop technology initiative, often oscillating between resistance and acceptance. Therefore, the discussion of the findings in this study focuses on an explication of teachers' ambivalence in light of four larger clusters of conflict that contributed to this ambivalence. These conflicts include: conflicts around institutional control in implementation of the laptop program and teacher agency; conflicts around political pressures

for standardized testing and technology mandates; conflicts around technology uses in the curriculum and technology allocation in specific class types; and conflicts around professional identity, and the challenges that both student and teacher technology use brought to these identities.

Institutional Control and Teacher Agency: "It was pretty top down."

On an institutional level, teachers experienced confusion as to the manner in which the laptop technology initiative was implemented. Even though the laptop program was purported to be voluntary for both the teachers and the students, in practice, many teachers reported they had little control over the decision to join the laptop program. Mark related: "I was, [told] that if I didn't, I might not be able to teach the advanced placement upper level students that I've taught for some time, and I didn't want to jeopardize that." Pam reported a similar situation: "I was told that the eleven AP class would be a laptop class and I had to be trained." Thus, as Pam commented, laptop technology initiative was "pretty top down…they proposed the program, and then it was approved by the board, and then we were told that people needed to get on board." To a certain degree, Mark felt that the administration made the decisions about the program based predominantly on the community's input. School administrators failed to consult the teachers, the people who were going to be most directly affected by the technology innovation. Mark explained:

> We were on the sidelines both from the planning and implementation … It was
>
> essentially a community question, "Is my student going to be a laptop student or is he or
>
> she not? " We were really out of the mix. This is something the Superintendent was
>
> going to do and he did it. He had to modify it slightly, but none of the modifications came
>
> from us. They were imposed by the community.

As indicated by their comments, the teachers in this study felt that the administration did not seek their input in the implementation of the program, and by doing so they took teacher agency away. As Claire noted, the question, 'What do you think of this, should we do this?' was never asked. As a result, Mark noted that the teachers resigned themselves to the fact that "that there does not seem to be any alternative" to this tendency of administrators to "think it up" and "tell us," as they implement innovations into school systems.

Interestingly, the administrators believed that the teachers were sufficiently involved in the planning and implementation of the program. A program supervisor remarked: "With the committee, especially in staff development and curriculum, we had several teachers from an elementary level and from high school." It is worth noting, however, that staff development decisions came after the community and the administration had already approved the program. Whatever the actual case, the teachers claimed that they were not part of this group of stakeholders and decision makers.

In making recommendations about the way the laptop program should have been implemented so that the teachers had not felt deprived of control on an institutional level, Joan commented succinctly on two critical conditions. The first one was "more communication," as she argued,

> One word would be more communication. There were board members, principals, some
> of the administrators, who went off to San Francisco, Seattle…. They went to a
> conference and looked at programs. To my recollection, they never came back and
> reported to us what they found, shared it. If they did, it was just bits and pieces.

Including teachers was Joan's second condition. She argued: "There was a team of administrators, people working to put the program together that weren't teachers. I'd like to see

the teachers more involved from the start, right from the planning stage." Mark agreed with Joan: "I'm sure as a group, I'm sure we, teachers, would like to have input," instead of being "left out of the loop."

Political Pressures: "The school district…wants… kids to do well on an English Regent's."

Additionally, on an institutional level, the teachers felt conflicted about the expectations imposed on them with regard to both national and state curriculum goals and technology integration mandates. On one hand, they experienced political pressure to prepare students for standardized testing, for which they were held accountable. As Pam commented, "The school district…wants to make sure that we're preparing kids to do well on an English Regent's because our scores are sent out to people in the community." The pressure for standardized testing, the teachers reported, was accompanied by institutional pressure for technology integration in their classroom practices. Joan spoke of the latter type of pressure: "The curriculum and technology…. The district gets into these things and they're pushing us and saying, "This is what the kids are going to be facing in college or even in a business. So they need to know how to use all these things." The teachers on the other hand, were not sure if, as Pam observed, there was time "for exploring computer literacy," amidst "all kinds of demand to have kids write and be able to pass the Regents and write the four tasks and there's demands that they have to cover certain amount of books." What was even more disconcerting to the teachers was the fact that Regent exams did not allow for technology use during the actual examination at all, for, as Pam explained, "Regent's exams are not written [on the computer]. It's all in paper."

Colin found the controversy over typing at the exam problematic in his own teaching as well, for, as he believed composing on the computer and composing with a pen and paper were "two different ways to produce." He even claimed they "go against each other." In his

elaboration on the nature of this conflict, he recalled his own experiences of composing with a computer and pen and paper. He explained: "I draft and write a lot on the computer. [When] I sit down and I start doing it on a piece of paper, I get very nervous and I can't think." The problem that he confronted he explained was due to the fact that he could not "go back and change it or move this paragraph or start over again." Similarly, he felt that he was sending conflicting messages to the students in his classroom when he taught his students academic writing using the computer, and, at the same time, asked them to compose with pen and paper for the exam purposes. As a result, he felt that his writing instruction was not only confusing to the student but also counterproductive in terms of his overall curriculum goals. He elaborated further on this conflict:

> [In the classroom,] you're asking students to sit down and write an essay that they can't necessarily block and move and restart or do any of those kinds of things. So, it becomes somewhat counterproductive in the sense that you're conditioning them for certain type of thinking and then when they go to write their essays on paper during their exams, they almost have to do their thinking ahead of time, which is not entirely what happens with the laptops. A lot of times I will encourage them to write and then go back and change.

Colin reported the students demanded an explanation when confronted with conflicting instruction, "Why are we doing this? I have this laptop. Why do I have a laptop if I have to write this thing out?" In response to such enquires, he referred students to the Regent's exam booklet that required students to create handwritten exam essays.

Institutional Pressure: "Use it all the time or most of the time."

The teachers in this study were also sometimes conflicted about the way technology was implemented into their individual practices on an institutional level. In Mark's words, the

teachers resisted the institutional pressure to "use it all the time or most of the time," for they feared that "technology runs the risk of becoming perhaps the be all and end all." What they wanted, however, as Mark commented, was for technology to "settle into its rightful place among the other bags of tricks that we, teachers, use with our students." Along the line of this argument, Pam felt that the community's pressure for universal technology integration conflicted with her perception about the degree of its use in the classroom. She believed that the community's perspective was influenced substantially by the district's push for technology integration. Pam explained the nature of that conflict: "Parents are buying into [thinking that technology is the only way to go]. They buy into it…and the expectation for it far exceeds what technology's going to accomplish in a classroom in the way that we use it now." As indicated in this quote, Pam emphasized the fact that the teachers in this study were not buying into the agenda that the district and the community were trying to sell to them. Claire spoke to the same conviction: "I'm also not entirely sold on having them in the classroom every day either," because, as she argued, she believed the technology, as an educational innovation, did not bring a pedagogical change into her instruction, unlike other educational reforms in her teaching career such as cooperative learning (Keyser, 2000) or whole language (Moorman, Blanton & McLaughlin, 1994) instructional approaches did. She elaborated:

> Other reforms were more pedagogical. This is not a different way of thinking, to me, it isn't anyway, or a different way of delivering information. It's just faster and has some possibility that you wouldn't have otherwise in a classroom.

On still another level, Pam was also concerned that the way technology was implemented took teachers' attention away from "bigger" and more important issues around technology use in

the classroom such as ethical and curriculum issues. She elaborated in more detail on this

problem:

> We get bogged down in, "You can send your paper to the mail drop box," "Kids don't
>
> have to hand out their papers to you, they can send it to someplace else and you can get it
>
> on your computer." The big issues are still out there, floating around, visual literacy with
>
> computers, [or] ethical issues with computers…. We're not addressing them because we
>
> are stuck in minutiae …we're just railing around.

She saw these efforts of technology implementation misdirected, for she described them

as focusing on the wrong outcome, as she commented, " it's like [analyzing] paper and

pencil rather than ideas that you can produce with it."

Additionally, some teachers noted that even though the administration pushed for

technology integration in the classroom, the school system was not ready to embrace technology.

Teachers were still required to save students' writing assignments in paper format and in manila

folders. This sent a double message to the teachers with regard to the value of technology in their

instruction. On one hand, they were being encouraged to use technology in their practices; on the

other hand, they were not allowed to store student writing electronically. Mark reported:

"English teachers are required to keep documentation on their student's work in paper form."

The same requirement came from the district supervisors who assessed teachers' work in their

classrooms, and required "a certain number of papers, a certain type of paper and that physical

evidence has to exist."

Curricular and Content Conflicts: "We privilege in a classroom a different type of literacy."

Some teachers were not sure, either, if technology fit in at all into the school curriculum,

because, as Pam argued, "We are very narrow in our ideas of literacy" and "We privilege in a

classroom a different type of literacy," which she described as "traditional literacies, reading, writing." Mark grounded this type of conflict in a larger socio-cultural change, where, he believed, modern technology played a significant role. Mark argued:

> Reading and writing seems to be extremely important right now. The results get published in the newspapers all over the state for different schools who test their kids in reading and writing and yet the popular culture seems to be going in a completely different direction. It's all oral and acoustic.

He worried about the resulting disjuncture between the literacy practiced by the students in their real lives and the literacy required from them in the school. He was also unhappy to discover that for many students, academic reading and writing "becomes a school thing" and that such literacy "doesn't have anything to do with real life" for, as he commented, "the only time they do this is in school." Mark's concerns seemed to call for the need to revise the curriculum to address the issues around conflicting literacy agendas in the outside and inside school student practices.

The teachers in this study were also confused about certain curriculum requirements regarding technology use in the English classroom. For example, Colin explained that according to the tenth-and eleventh-grade curricula, "the teachers have to know how to use a scanner and they have to incorporate it in something." Joan elaborated a bit on that expectation: "In the tenth-grade curriculum, from the state it says, 'must have experience with the computer and scanner and manipulating text and a picture together.'" However, for the teachers in this study, as she argued, the use of the scanner was not "something that we would have been doing as a natural course with technology in the classroom." They would rather focus on "things like research online or [electronic] communication with book authors, but because it was in the state curriculum, we made sure… that everybody has scanned something and done something with it."

Thus, the conflict described here pointed to the difference in need perceptions between the administrator and the teacher. It also showed the tendency among policy makers and teacher educators not to consult the teachers' opinions with regard to the curriculum design and technology integration.

The teachers were also ambivalent among themselves on a conceptual level about whether technology fit with the English curriculum or not. Jewel, for example, argued that technology "is more applicable in the English content area than in math," for, as she commented, "we're writing more, we should be reading more often than some of the other content areas. And all that fits into the technology, which gives access to all this information." Mark, however, was of the opposite opinion. He believed that technology "lends itself more" with what "the math teacher next door was doing." Mark argued:

> I am dealing with words, the meaning of words, the subtleties of words and so forth. Students have textbooks and novels and poems and where she is having them do calculations and other kinds of things, it just seems that it lends itself more…language arts deals in skills.

> He also felt that the content areas that rely heavily on information such as social studies or biology lend themselves more to technology use than what he was teaching, the language and the skills.

Some teachers were not sure if technology fit with certain class types, either. Pam was the teacher who had the strongest feelings about this conflict, for she believed that technology did not seem to fit the AP class at all, which she considered, a "very traditional English class," where the focus was supposed to be primarily on helping students develop the academic literacies required in high-stakes exams. She was conflicted about how to prepare AP

students to take high-stakes exams and, at the same time, integrate technology into "a tight

curriculum," where "they read probably more books than other kids…They are writing papers all

the time, and there is, the issue of discussion that is very important." Pam chose to abandon

technology for instruction in an AP classroom, as she explained, "I am not willing to sacrifice

right now how kids are doing on the AP exam because it is a high-stakes exam. I am not going to

sacrifice that for technology." She admitted, however, that she was not opposing technology per

se: "I'm not opposing it." She only disagreed with the administrators' decisions as to which

classes should be become part of the laptop technology program, for, as she explained, their

decisions conflicted with her needs:

> The class where the technology is available, it seems irrelevant to me, except in terms of
>
> greater communication and including more people and all that. And the classes that I
>
> don't have the technology available to me, something always occurs to me about how to
>
> use it.

Pam's experience pointed to the differences between the administrators and the teachers

in their visions of technology fit with a particular class type. Perhaps the conflict could have

been avoided if the administrators had sought teachers' input in making decisions about which

classes could benefit most from technology availability for their instruction.

Professional Identity Conflicts: "It flies in the face of what I'm trying to achieve."

Teachers in this study were ambivalent about technology not only because of the

conflicts they experienced on an institutional level but also because of a number of dilemmas

they faced on a personal level. Many sources of these dilemmas focused around teachers'

perceptions of their professional identities and the challenges that either student or teacher

technology use brought to these identities. Jewel, for example, was conflicted about how to

"follow the curriculum" and, at the same time, integrate technology. She found achieving both goals difficult in her classroom, for, as she noted, "the amount of curriculum that I was supposed to cover this year is too much when I start incorporating the laptops." She also learned that technology did not always help her achieve the curriculum goals. She recalled many situations where technology proved to be inefficient or even counterproductive, as she pointed out, "it would almost backfire and it didn't function like I'd thought." Joan, also felt that sometimes technology and content "clashed," especially when she could not "think of a way to implement the laptop with [the] content," for, as she commented, "there really isn't any purpose." Even though she admitted, "I haven't been at a point where there is no purpose to it, if nothing more than taking notes, or using it to keep track of information," she was not pleased when the computer was used in this way in her classroom, for, as she explained, she felt technology hasn't really been totally integrated." In many situations, she had to admit: "We could use pen and paper." Other teachers confronted the same dilemma. Claire also realized that a lot of her technology uses in instruction were a replication of what she had been doing before in her non-laptop classes. Claire shared:

> A lot of the things I did on the machine are things I would have done on a ditto before or on the board. It's just that it's sitting in front of them instead of on the board or on an overhead or whatever that I used before.
>
> In her explanation for choosing technology over her old instructional practices,

Claire stated that she "was just trying to get the kids to use their laptops every day," because she felt the need to do so since they were in the laptop program. She admitted, however, that she "didn't see any value of doing it that way instead of on a piece of paper except for maybe saving the piece of paper." Mark also admitted that he was often skeptical about whether technology

was better than more traditional methods that he used in his own teaching. He argued: "Anytime I use it, I'm not sure that it was worth it because I can still see ways that I could have gotten done what I got done more quickly, more effectively, more efficiently than with this." Pam also felt that using technology for writing was "still replicating a process that one can do with a pencil and paper," which, in turn, conflicted with Colin's earlier argument about composing on the computer being different from composing using pen and paper.

At other times, the teachers felt ambivalent about technology when it went against what they were trying to accomplish in their instruction. Mark, for example, despaired when he realized that his students "tend to not capitalize because [of] Internet chat rooms and email. In the interest of speed of reply, they don't hit the shift key anymore" because, as he argued, "it flies in the face of what I'm trying to achieve," which was helping students with "reading, writing, speaking, and listening, and doing them as effectively as possible in their native language." Jewel was also disappointed to realize that her encouragement to use the Internet for research assignments brought about unprofessional PowerPoint presentations. The presentations were shallow in interpretation and critical analysis of the presented data, for students were "just grabbing the information off the Internet. Throwing it on their PowerPoint …and called that a presentation," which contrasted with her expectations of them, "I want there to be more interpretation of the information on their part." Additionally, she felt the presentations lacked serious thought about the influence of the medium on the message. She complained: "I want them to take more responsibility for what they're doing. And really think about why am I putting this sound on? Why am I using this document or using this text?"

A lack of technology expertise contributed to a great deal of ambivalence on some teachers' part about technology in their own practices. Pam, for example, felt very uncomfortable

about being expected to guide students in their learning with the help of technology when she, herself, was not familiar with it at all. She reported that she experienced that type of dilemma when she asked students to access information on the Internet for one of her class assignments. She compared that type of experience to the situation where you are "sending fourteen-year-olds into the Wild West without any adult guidance." She was confused about this situation, because she believed the teacher should assume the role of the guide: "We need to see ourselves as guides," and yet, as she acknowledged, "that's very difficult when you haven't been there yourself." Mark described this conflict from his own perspective: "It is like using the wrong size wrench or the wrong tool for some job." And he was conflicted about his lack of technology expertise because "Not having the proper tool often makes the job harder to do than if you have no tool at all." Claire was also conflicted about her technology expertise: "I don't like feeling like I don't know what I'm doing;" [at the same time I'm] feeling "more empowered by it all because I'm able to learn it." Similarly, Joan experienced an emotional roller coaster about technology, for it also sparked in her the feelings of excitement about "new possibilities" and "anxiety" because "[there was] rethinking [of] the way I had done things for many, many years."

Finally, the teachers in this study experienced feelings of professional ambivalence about technology when it posed moral dilemmas for them. Jewel, for example, struggled emotionally when technology forced her to perform a role she did not think she should be doing. Thus, she resisted "policing" what the students were doing to "make sure they're doing this right and not doing this," because "It's taking what we think we're supposed to be doing, teaching, in a classroom." She was also conflicted about the use of Censor as an aid in policing, because, as she argued, even though she was able to "freeze their screens" and stop them from doing what kept them off task, she found this solution problematic. "It defeats the purpose. Now they're not doing

the English work and they're not using their laptop. I can't let them sit there and do other things either." Pam found policing problematic for still another reason. She believed that monitoring with Censor, or to use her words, "playing twenty first century detectives," kept teachers' "focus away from the real issue of student integrity, [and] academic honesty." She also worried about the degree of monitoring some teachers exercised in their classrooms. She explained: "Some of us have become equally fascinated with their ability to catch them via the computer ...you highlight this and click that and you can find out how long it took them to write the paper." Pam considered such an attitude problematic, for it got teachers "trapped with small issues rather than focusing on the big issues such as ownership, [or] freedom of speech."

Claire and Mark's sources of moral dilemmas were grounded in certain institutional decisions. As Claire indicated, the administrators had made promises to students that "textbooks would be on CD…. that they wouldn't have to use paper anymore, that they wouldn't need a printer, that they could just send everything to the teacher on the server." The teachers, who knew that "That doesn't always work," had to deal in their classroom with the students' disappointment about those promises.

<div align="center">Discussion and Implications for Policy and Practice</div>

Teachers and Laptop Technology Implementation

On an institutional level, the teachers in this study did not have much "agency" (Sarason, 1996), for they were excluded from the planning and implementation of the laptop program in their school system. As many teachers in this study commented, the laptop program was a top-down initiative, the implementation of which was based predominantly on the input of district stakeholders, school administrators, and community members. Although a top-down model in the implementation of educational change has been a common practice among legislators and

administrators (Cuban, 2001; Fullan & Stiegelbauer, 1991; Popkiewicz, 2000), the administrators interviewed in this study felt that teachers were sufficiently represented on the curriculum and technology planning committees.

The difference in perspectives between the teachers and administrators in this study can be attributed to what Fullan and Stiegelbauer (1991) referred to as administrators' "naïve" assumption that "teachers were involved because teachers were on major committees or project teams" (p.127). Fullan and Stiegelbauer felt that such assumptions constituted "one of the great mistakes" (p.127) over the past 30 years in the implementation of educational initiatives. According to these researchers, in relying on such assumptions, administrators reveal that they seek teachers' "acceptance" and "facilitation" (p.127) in the implementation of the innovation rather than their involvement in the planning and decision making about the innovation. Fullan and Stiegelbauer's argument seems to hold true for this study as well, for the teachers were involved in the final stages of the program implementation, yet excluded from the earlier process of planning and decision-making.

An alternative model to laptop technology initiative in this study needed to blend the top-down and bottom-up strategies (Fullan, 1993). Within such a model, policy makers and administrators would have had to give teachers "agency" (Sarason, 1996) in both the planning and implementation of an innovation. An example of the top-down and bottom-up model is a site-based-managed schools framework (Dee, Henkin, & Pell, 2002), which depends primarily on teachers to introduce and implement educational innovations. Within site-based-managed schools, management teams composed of administrators, teachers, and community make decisions collaboratively about all aspects of innovation implementation from budget through curriculum to goal setting.

The teachers and administrators in this study also differed in their visions, expectations, and needs perceptions with regard to laptop technology integration in the curriculum and individual classrooms. The teachers wanted laptop technology to be introduced to their classrooms gradually and based on their own judgment or perceived needs. They needed time to experiment with it, time to learn how to build it into their existing curricula, and a released time from other responsibilities to facilitate this learning process. They also wanted agency to make decisions as to when, where, and to what degree to use laptop technology in their individual practices.

The administrators, on the other hand, who saw laptop technology as a means to achieve progressive goals of technology envisioned for education, pushed for its use almost anywhere and anytime. A classic example of such thinking was the administrators' decision about laptop technology in AP classes even though the teachers felt that students in academic classes were more likely to benefit from laptop technology than students in exam-oriented AP classes, because the latter classes privileged traditional literacies of reading and writing, and were also assessed with traditional tools (pen and paper) in national examinations.

The pressure from the administration for the teachers to use technology universally, however, proved to be counterproductive, as teachers admitted that often they felt obliged to use technology even though they might not have felt the real need for it. At other times, this pressure forced the teachers to use technology in an instrumental way, which in practice meant merely substituting the old tools with new technology tools and replicating the tasks they engaged students in with traditional tools, using the new tools. As the teachers sadly realized in this study, there was not much instructional value in such technology uses.

Again, what the teachers in this study needed was more open communication and collaboration on the administrators' part, which might have helped the teacher and the administrator first to identify and then to work around the differences in perceived needs and expectations of technology's role in instruction across different class profiles. Such communication would have also prevented teachers' disillusionment with the laptop technology implementation policy, and, consequently, their ambivalence about the program's value in the English curriculum on institutional and classroom levels.

Laptop Technology and the English Curriculum

Although previous research suggests that technology can generate new ideas for lesson preparation and instructional practices (Bruce, 1997; Leu, 2002; Parr, 1999), the teachers in this study often struggled to envision the possibilities that technology could offer to their practices. As reported above, the instrumental uses of technology tended to parallel the tasks with which they engaged their students when using traditional tools such as note taking or filling in outlines, for example. Reeves (1998) referred to such a limited technology use as "learning 'from' technology," as opposed to learning 'with' technology" (cited in Lou, Abrami & d'Apollonia, 2001, p.453). In the latter view, students are engaged in real-world tasks such as exploring, analyzing, and interpreting information, solving complex problems, and communicating effectively with others. The teachers in this study admitted that they were dissatisfied with their use of technology for "learning from," but also noted that they were still unclear about how to integrate it for "learning with" in their English classrooms.

Another reason for teachers' ambivalence and limited use of technology in this study was a conceptual disagreement among individual teachers. While the teachers in this study agreed that their current curricular goals were not tied closely to technology, they could not agree as to

whether technology fit with the English curriculum on a conceptual level. This is because the teachers in this study held different "images of 'what counted' as learning activities in specific content areas"(Windschitl & Sahl, 2002, p.198) and the roles they envisioned for technology in facilitating such learning activities. As discussed earlier, some teachers in this study felt that technology was more applicable in the English content area than in math, for example, since they believed students in the English classroom were writing and reading more often than students in a math classroom. Others, however, argued that technology lent itself more to content areas that focused primarily on information such as biology, or history, for example, rather than with English, since the latter dealt mostly with language and skills rather than with information.

Neither were the teachers in this study unanimous about the composing process with the computer technology. Baron's (2001) argument that "writing itself is first and foremost a technology, a way of engineering materials in order to accomplish an end" (p.71), might explain the origin of the conflicting views about the composing processes with computer technology as experienced by the teachers in this study. In line with Byron's argument, teachers who were used to composing with traditional tools might have been constricted by processes such outlining and thinking ahead when they were composing on the computer. Similarly, teachers who were used to composing on the computer might have become dependent on the composing processes that the computer afforded, such as recursive thinking and simultaneous editing. Indeed this was true for some teachers in this study, who admitted that when they had to compose on paper they could not think clearly, for they were so used to thinking and editing as they went along on the computer. The blank page seemed to have interrupted that mode of composing.

Finally, the teachers in this study pointed to a curricular dilemma around a dichotomy between literacies inside and outside of school, which they found problematic both to them as

teachers and to their students as well. King and O'Brien (2002) have argued that such a dichotomy places students in "a literacy Catch 22" (p.1) situation. On one hand, they live in the world of information technology and popular culture; on the other hand, because schools tend to privilege a print-based literacy tradition in instruction and its assessment (Bruce & Levin, 2003; Traubitz, 1998), students are either disadvantaged or prohibited from drawing on literacy experiences from their lives outside of school. This study reveals that the "Catch 22" situation is further reinforced on an institutional level, as students were not allowed to use any of the computer technology that they had been using either outside the classroom or in the laptop program classroom while taking state and nationally mandated examinations.

Similarly, the teachers in this study were experiencing the "Catch 22" situation when they were not sure how to negotiate the conflicting expectations with regard to technology use in their instructional practices. On one hand, they were encouraged to use technology in their instructional practices; on the other hand, they were held accountable for teaching exam-oriented literacies that did not support technology-generated literacies. They also had to deal with students' inquiries about these conflicting agendas in their teaching.

To avoid the situation where technology that is encouraged in the classrooms is not supported in standardized examination, administrators and policy makers and teacher educators need to work toward eliminating inconsistency in requirements for standardized testing and technology mandates. As many teachers in this study pointed out, such an inconsistency sends conflicting messages about the value of technology in the English curriculum to teachers and students alike. Similarly, they will need to work towards eliminating the dichotomy between school and outside school literacies, by bringing more from the outside literacies into the school system, the goal that they envision technology has the potential to facilitate to accomplish.

This study also showed that teachers needed to be given an opportunity to discuss collaboratively the "what" of the English curriculum with regard to the new literacies for different class profiles (AP and general English, for example) and across different grade levels, as relevant to their particular teaching contexts and the needs of students within these contexts. Ideally, such conversations will result in identifying areas of the English curriculum, where technology will not only enrich the content, but also where it will become a part of it as well, such as an analysis of issues around online research, authorship, or meaning representation in multiple formats (audio, visual, text), for example. These conversations might also help the secondary English teachers themselves to resolve some of the conceptual conflicts as to whether technology fits or does not within their own discipline, by identifying the areas where it truly does fit and where it does not necessarily do so. Obviously, on an institutional and national level, administrators, policy makers, and teacher educators will need to be actively involved in these conversations in support of the design of such curricula.

Teachers and Laptop Technology

The teachers in this study felt that difficulties with time management, curriculum coverage as well as lack of technology experience contributed to their ambivalence about technology and conflicts on a personal level. Snoeyink and Ertmer (2001-2002), who called these concerns "first-order barriers" (p.87) to computer use, argued that teachers tend to voice more serious concerns, called "second-order barriers," regarding their professional competence, ability to learn new technologies, and ability to see technology uses in support of their pedagogical goals.

Lack of technology expertise often challenged veteran teachers' sense of authority and professional efficacy because they could not draw upon their otherwise vast teaching experience

(Wepner & Tao, 2002). Indeed, these teachers in this study frequently struggled to integrate technology in other ways than the ones they taught with using traditional tools. At other times, the teachers in this study felt that technology conflicted with their curriculum goals, when they realized that students' technology use resulted in poor spelling habits and superficial research and publication skills, as demonstrated in students' PowerPoint presentations. Thus, the teachers were conflicted not only about their own struggles with integrating technology in meaningful ways into their instruction, but also about technology's negative influence on students' learning and learning practices. Additionally, they were questioning some of the roles that technology and its implementation policy forced them to perform such as policing, to make sure that students stay on task and don't violate privacy and copyright laws.

All these personal conflicts and dilemmas challenged teachers' professional identity, undermining their sense of authority and perceived status. Moreover, because individual teachers in this study experienced curricular and personal conflicts regarding the laptop program in different ways, they needed personalized professional development to help them embrace their individual differences and needs. Unfortunately, what professional development the teachers in this study were exposed to had not yet developed that individual focus amidst the administration's more pressing desires to provide access to technology, financial support, basic technology training, and an organizational framework for implementation. This study suggests that individualized professional development, combined with discipline specific training, as suggested by teachers themselves and relevant to teachers' individual contexts, must accompany any technology integration throughout its entire implementation process. Lack of such focus and support is likely to result, as the teachers in this study revealed, in teachers' ambivalence about technology, and consequently, its limited use in their classrooms.

Implications for Future Research

Teachers in this study were conflicted as to whether technology was transforming the composing process or not. Much further research needs to be done to explore how computer technology affects the thinking and composing processes of writers. More specifically, it would be interesting to note the patterns of behavior that writers engage in when composing on the computers, as compared to the patterns of behavior they employ when composing with traditional tools such as pen and paper. Such a study would inform research about the roles that computer technology requires writers to play, as well as about specific functions of computer technology that writers tend to employ to facilitate them in fulfilling these roles. Additionally, such information could provide secondary English teachers and educators with insight on how to prepare students to utilize computer technology in the ways that will facilitate the thinking and composing processes required of them for efficient technology use in their writing practices.

Conclusion

As schools continue to bring more technology into English classrooms and as English teachers continue to embrace new conceptions of literacy by integrating more of this technology into their curricula, researchers, educators, and policy makers need to turn to teachers, as this study did, to learn about the conflicts such technology brings into their practices and their origin. Such insight will inform practice, policy, and research about the educational, organizational, financial, and emotional support English teachers will need to transition from traditional to technology-enhanced English curriculum and instruction. This transition itself, however, needs to be understood as a gradual, evolutionary, and highly individualized process, wherein ideally teachers will have the agency to use their own judgment, devoid of either political or institutional

pressure, about technology use in their own classrooms. Mark described succinctly the nature of such a "judgment call":

> It's going to be very gradual. So much of it is up to the individual instructor as well. Teachers, through trial and error and taking very cautious first steps, find things that work and retain them and use them. And they will find things that don't work and they will abandon them…. And that's as much as I can speculate about the future.

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Table 1 Teacher Profiles (see a separate file)

Table 2

Claire's Conflicts/Dilemmas about Technology

I Views of Technology

Print-based view	Relationships	Multiple literacies view
Interference with the old; Discourse (Gee, 2001); ICT (Carmen, 2002);		(The New London Group, 2000); Critical literacy (Alvermann, 2002); " Not personal"—"collegial-social process of learning for there is too much info to process alone;" Technology seen as " new literacy;" The machine seen as " a portal—a doorway to all info; to the world outside;" " Access to info to everyone else and everywhere"—no borders; info superhighway! (Baron, 2001).
	NOT PART OF SCHOOLING YET!	

II English Curriculum & Technology

Irrelevant to what teachers do bothers them	A tool for enhancing what they do	Transformative of teaching & content
	A support tool to do things differently (in this study this often means doing the same things, but with different tools);	Technology as " a new literacy"- hard to teach as not part of one's identity kit (Gee, 2001); " I grew up with the book and the paper."
	" A tool to integrate it with what you're doing;"	" Kids not reading books anymore;" " looking for
print-based view ←	" A reinforcement tool for grammar & vocabulary;"	graphic" –kids immersed in technology- new Discourse
	"Technology doesn't change the way I educate the kids; it's just the method of *delivery*, not the focus in the classroom."	(Gee, 2001). Compare to Mark's view of technology- great similarity!
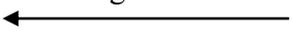
III Teaching English & Role of Technology

Distraction- threat to authority	See potential & drawbacks- double edge sword	Powerful tool for enhancing instruction
	" A computer can give you access to other people's analysis, but cannot help	Access to more info; Fits into the roles of a teacher as a "coach &

you analyze better."

"Skipping the thought process"—students don't work hard on analysis; they access other people's analysis before they do their own analysis;" Depriving students of the cognitive learning phase—(cf; Jewel, Pat).

facilitator;"

Helps to "dress up a topic to look more fun"- more engaging;

"Great for research."

Table 3

Theme Coding: Teachers' Perspectives on Technology and the Laptop Program Implementation

I. Teachers' attitudes toward technology and the laptop technology

1.1. Ambivalent

- Overwhelmed

- Conflicted

- Enthusiastic

II. Factors influencing teachers' attitudes

2.1 Personal conflicts

- Teacher identity

- Competence (technology & teaching)

- Generation literacy gap

- Systems of beliefs about

  - technology

  - literacy

  - teaching

2.2.Curricular conflicts

- Views of literacy and technology as literacy

- Views of technology fit for English instruction

- Current curricular/ literacies and examination expectations vs. new technology-generated literacies

2.3. Institutional conflicts

- Administrators' vision vs. teachers' vision

- Top down model and community involvement vs. teachers' input

- Technology allocation across class profiles and grade levels

- Professional training/resources vs. teachers' needs/expectations