

An In-Depth Look at Getting Started in Brazil

Torie Gorges and Teresa Lara-Meloy, SRI

Ann Berger Valente and Lia Cavellucci, LTNet Brasil

February 27, 2009

Table of Contents

| | |
|---|----|
| <i>Executive Summary</i> | 3 |
| <i>Introduction</i> | 6 |
| Methodology | 7 |
| Local Context | 8 |
| Indaiatuba | 8 |
| Goiânia | 10 |
| <i>Findings</i> | 11 |
| Effects of <i>Getting Started</i> on Teacher Technology Use | 11 |
| Confidence with technology | 11 |
| Use of technology with students | 12 |
| Personal technology use | 14 |
| Changes in teachers' planning | 14 |
| Challenges | 16 |
| Effects for school leaders | 16 |
| Effects of <i>Getting Started</i> on Pedagogy | 17 |
| Correspondence of <i>Getting Started</i> and <i>Essentials</i> | 18 |
| Integration of <i>Getting Started</i> and Other Technology Programs | 19 |
| Critical Factors for Success | 21 |
| <i>Recommendations</i> | 24 |
| <i>Conclusion</i> | 26 |
| <i>References</i> | 28 |
| <i>Appendix A: Evaluation Design for Getting Started Case Study in Brazil</i> | 29 |
| <i>Appendix B: Instruments</i> | 34 |

Executive Summary

Intel's *Getting Started* course offers teachers an introduction to software productivity tools and student-centered approaches to learning. In this case study, a follow-up to one completed in March of 2008, we examine the effects of *Getting Started* for teachers in Indaiatuba and Goiânia in Brazil. We collected data from three types of course implementation. In Indaiatuba, teachers take the course in the context of a variety of other technology-integration programs. In Goiânia, some teachers took *Getting Started* as an isolated professional development opportunity, while others took it in the context of a larger school reform/technology integration program. By making comparisons across these three implementations, we have been able to find critical factors for success of the course. Data collection methods included interviews, classroom observations, and a survey.

We aimed to answer the following research questions:

1. How well has *Getting Started* helped teachers use information and communication technology (ICT) in support of their teaching practice?
2. How have the pedagogical features of the course affected teachers' beliefs and practice?
3. How does the *Getting Started* program fit with Intel *Teach Essentials* (online or face-to-face) goals in the country?
4. What can we learn about the functional value of the course from studying examples of how it is integrated with other types of training, reform, and classroom practice in local schools?
5. Based on this study, can we determine reasonable early-stage benchmarks that can be used more generally in evaluations of the course?

We found that *Getting Started* had been successfully implemented and was having positive effects for most teacher participants. Highlights of the findings are as follows.

Teachers gained confidence with technology. Many were less afraid of computers and were pleased that they could participate in an increasingly digital world.

Teachers began taking their students to the computer lab. In schools where there was a focus on integration of technology with teaching and supports such as access to computers, tech support staff, and encouraging school leaders, teachers began to use computers with their students. Although the activities they assigned to students were not always student-centered or innovative with respect to technology use, they represented a step forward for teachers who previously had not used technology in their teaching practice.

Teachers used technology for personal purposes. Teachers used the skills they learned from *Getting Started* to do things like work on university coursework and communicate with friends online.

Few teachers made direct use of the teacher tools they created in *Getting Started*. Although teachers enjoyed the course, their primary need was for tools they could use

directly with students, not tools for teacher purposes (such as the Weekly Lesson Planner and Classroom Inventory included in the curriculum).

The primary pedagogical change made by teachers was to take students to the computer lab. They did not make changes to their teaching practice in the regular classroom. Student-centered pedagogy is already much talked about in Brazil. Teachers were already familiar with the pedagogical concepts introduced in the curriculum. Although many enjoyed the opportunity to reacquaint themselves with the ideas, they did not make changes to their regular teaching practice as a result of the course.

Teachers believe that *Getting Started* is a necessary base for *Essentials*. It may not, however, provide sufficient background for all teachers. Teachers who took *Essentials* after *Getting Started* felt that it helped them, but that there was still too much and too complex content in *Essentials*.

***Getting Started* can be successfully integrated with other technology-integration programs in schools.** Schools in Indaiatuba and Goiânia are using *Getting Started* as a part of large-scale technology integration movements. The course fits well with these other programs and they appear to complement each other.

There are many important factors in the success of *Getting Started* in Brazil.

- Alignment with other school/municipality programs and goals
- Availability of technology resources
- Scheduling the course over a long period of time (e.g., short sessions once or twice a week as opposed to the full course in one week)
- External motivation for teachers to use technology in the classroom (e.g., a requirement to use the computer lab with students once a week)
- Strong master teachers and ongoing technical and pedagogical support
- Supportive school leaders and communities of teachers
- Common planning time dedicated to discussion of tech integration
- A critical mass of participating teachers in a school

Overall, the course was very successful in two of the three implementation scenarios and moderately successful in the third. When the course was coupled with other programs and supports, teachers went beyond the expectations of the course (which focuses on teachers' own uses of technology) and began using technology with their students. When it was implemented as an isolated professional development activity, teachers showed some increase in their own confidence with technology but did not use it regularly to support and enhance their work.

Our findings indicate that *Getting Started* can be most effectively implemented within the context of broader technology-supporting reform. Additionally, in cases where teachers are eager and encouraged to begin using computers with their students, as was the case in Brazil, some adaptations or modifications could make *Getting Started* more directly useful for the classroom. First, the products teachers create could focus on what teachers can do with students in the computer lab, rather than on the teachers' own use of technology. These

activities could model student-centered pedagogy, supporting the course's secondary goal of exposing teachers to this type of teaching. Second, the Action Plan activity could be adapted to allow teachers to create a lesson plan, so they can make direct use of the tool. It is important to note that if teachers are hoping to use technology with their students, it is important that they are supported in their schools in the areas listed above, such as availability of technology resources, technical and pedagogical support, and time for planning for technology use.

Introduction

Intel's *Getting Started* course offers teachers an introduction to software productivity tools and student-centered approaches to learning. In the course, teachers participate in an inquiry learning process, gaining technology skills as they create products designed to be useful to them in their teaching work: grading spreadsheets, classroom rules presentations, and newsletters to send home to parents, for example. The course culminates in the development of an action plan which gives teachers a framework for planning the inclusion of technology in their lives as teachers.

Initially launched in late 2006, *Getting Started* has been implemented in countries in Asia, Africa, the Middle East, and Latin America. In February and March of 2008, the Education Development Center, SRI International, and local evaluators collaborated on case studies in five countries: Brazil, China, Costa Rica, Nigeria, and Vietnam (EDC & SRI, 2008). In November of 2008, in collaboration with LNet Brasil, SRI revisited Brazil to gain a deeper view of how the course has influenced its participants. We visited schools in Indaiatuba, in the state of São Paulo, which we had visited in the earlier case study, as well as schools in the state of Goiás. The two locations provide a diversity of contextual factors and teachers' experiences with the course, allowing us to examine what factors contribute to a successful implementation of *Getting Started*. The research questions included the following primary questions, focused on the main goals of the course:

1. How well has *Getting Started* helped teachers use information and communication technology (ICT) in support of their teaching practice?
2. How have the pedagogical features of the course affected teachers' beliefs and practice?

Because *Getting Started* is an introductory program and acts as a stepping stone to other forms of training and support, we also focused on the following questions:

3. How does the *Getting Started* program fit with Intel *Teach Essentials* (online or face-to-face) goals in the country?
4. What can we learn about the functional value of the course from studying examples of how it is integrated with other types of training, reform, and classroom practice in local schools?
5. Based on this study, can we determine reasonable early-stage benchmarks that can be used more generally in evaluations of the course?

Prior global research on the *Essentials* program suggests that it is a complex course and teachers often feel unprepared for it; frequently modifications are made in the implementation of the course to make it more appropriate to the background, skills level, and schedules of the teachers. We wanted to see if teachers who took *Getting Started* prior to *Essentials* felt better prepared for the latter course's rigor. Additionally, both Indaiatuba and Goiânia have a number of potentially complementary programs (described below), and we wanted to understand how those programs worked in combination with *Getting Started*. Finally, we wished to take the information gathered in this case study and distill it into a set

of benchmarks for success of the course that may be useful to others planning to implement the course or to evaluators of those implementations.

Methodology

To study *Getting Started's* impact in Brazil, we interviewed participating teachers (PTs), master teachers (MTs) and *multiplicadores* (“multipliers,” whose function is teacher technology training), school leaders, and staff of the local education authorities. We also conducted classroom observations, primarily of teachers using the computer laboratories at their schools. Evaluation participants came from four schools in the state of Goiás (three in the city of Goiânia and one in a small neighboring city) and nine schools in the city of Indaiatuba. The table below outlines evaluation participants and data collection methods.

Table 1. Evaluation Participants and Data Collection Methods

| Participant | Data Collection Method | Indaiatuba | Goiânia |
|--|------------------------|------------|---------|
| Teachers | Interview | 18 | 11 |
| School Leaders | Interview | 4 | 1 |
| Master Teachers/ Multipliers | Focus Group | 6 | 2 |
| <i>Dinamizador*</i> | Interview | 0 | 1 |
| Local/state education authority officials and staff | Focus Group | 4 | 2 |
| Teachers/Students | Classroom Observation | 7 | 4 |

* The role of a *dinamizador* is to assist teachers in using the computer lab with their students.

In Indaiatuba, several of the teachers, master teachers, and school leaders had also participated in the earlier case study, conducted in March. Because the Brazilian school year starts in March and finishes in December, our two case studies allowed us to see the beginning and end of one school year. Schools and teachers were selected by LTNet and the local education authorities, and the schools varied in size, length of time the school has had information and communication technology (ICT) or an ICT program for students, and level of participation in other technology programs. The PTs had generally volunteered to take the *Getting Started* course, so they were a self-selected population. Interviews were conducted in Portuguese by SRI and LTNet staff, jointly. LTNet staff translated for one SRI researcher who did not speak Portuguese.

In addition to qualitative data collection methods, we used a survey to collect data from a large sample of teachers in Indaiatuba. The sample included 355 primary school teachers who had participated in the course. Most were experienced teachers: 15% had more than 20 years of teaching experience, 50% had between 10 and 20 years, 30% had 3 to 9 years, and 5% had less than 3 years. Most were general education teachers (75%); the remainder taught subjects such as physical education or art. The survey was administered in late November and early December, 2008, by members of the municipality’s technology office.

Interview, focus group, and observation protocols, as well as the survey, were developed by SRI, building upon the protocols designed for evaluation research on the course by EDC and SRI. The MT focus group instrument asks interviewees about their training experience, any PT training they have conducted, and how the training has affected their classroom practices. The PT interview instrument asks interviewees about the accessibility of computer

technology in their schools and their views on how *Getting Started* has changed their classroom practices. The school leader interview instrument asks about interviewees' plans for implementing *Getting Started* in their schools, their views of the course's effect on teachers, and their goals for reform and plans for their school. The classroom observation protocol focuses on use of technology, student engagement, teacher-student interactions, and student-student interactions. The survey asks teachers about access to technology, beliefs about student-centered learning, frequency of use of technology, and utility of the *Getting Started* course.

Local Context

As mentioned above, both Goiânia and Indaiatuba implemented *Getting Started* in concert with other technology and student-centered learning programs. In this section, we describe the context in which *Getting Started* was implemented.

Indaiatuba

Getting Started began to be implemented in late 2007 in Indaiatuba's municipal school system, which includes public nursery and primary schools serving infants through fifth-graders. The municipal schools are administered by the Secretary of Education's office, a part of the municipal government. The mayor of Indaiatuba has made a significant political and economic investment toward bringing educational IT into the school system.¹ Indaiatuba's MTs were trained in October, 2007 on Version 1.0 of the curriculum, and shortly after, began offering the course to teachers. By November, 2008, 426 primary grade teachers had taken the course, which was offered to them at a variety of times (afternoons, evenings, and weekends) to fit their schedules.² An initial group of PTs took the course in late 2007 or early 2008, and a second group took the course in June through August of 2008. The majority of PTs in our study participated in the first group. Initially teachers volunteered to take the course, but the Secretary of Education is now offering a bonus for teachers who take the course outside of regular working hours. There are plans to continue offering the course so that all or most of the teachers (including those at the nursery level) will take the course eventually. Each course is led by an MT and has about eight PTs. Two-hour sessions are held once or twice a week over the course of several months, for a total of 32 hours of

The Secretary of Education in Indaiatuba offers a bonus for teachers who take the course outside of regular working hours.

class time. Make-up sessions are available if a PT misses a session, and PTs can use computers at the *Bosque do Saber*, a municipality-run education and training center, to practice what they are learning.

Indaiatuba's implementation plans go beyond the teaching staff. Most school directors, pedagogic coordinators, and Secretary-level employees (such as pedagogic supervisors, psychologists, and speech therapists, all of whom play a major role in teacher training in Indaiatuba) have taken the course. Each of these groups had its own dedicated time for

¹ Indaiatuba is privileged among Brazilian municipalities in terms of socioeconomic status; it is rated as one of the top 10 municipalities in the country in quality of life.

² Teachers in Brazil may work between one and three shifts a day: morning, afternoon, and evening. Offering the course at a variety of times is a way Indaiatuba is attempting to make the course available to all teachers.

taking the course; they did not take the course with teachers although they follow the same curriculum.

Implementation of *Getting Started* (called *Fundamentos Basicos* in Portuguese, or Basic Fundamentals) is one facet of a municipality-wide increase in use of ICT at schools in Indaiatuba. Most schools in Indaiatuba have a computer lab with 18 computers, and until recently most had an IT teacher who would take half a class to the computer lab at a time, while the classroom teacher stayed with the other half in the classroom. Survey data showed that 92% of respondents have access in a computer lab in their school, and other teachers have access elsewhere in the school; only 1% said they do not have computer access at school. Most (91%) also have Internet access at school. In an effort to integrate ICT into the curriculum rather than teach it as a separate subject, over the course of the 2008 school year, classroom teachers were expected to transition to taking their classes to the computer lab themselves, integrating ICT content with classroom content. Teachers are expected to take their classes to the computer lab about once a week.

Some of those teachers who were previously IT teachers are now MTs for *Getting Started*, and they serve the municipality as a whole. In early 2008, their role included not only offering the course but also helping teachers determine how to use ICT with students and to support them in the computer lab (later in the year, as described below, MTs played less of a role providing direct support to teachers in the computer labs). In addition to the MTs, teachers continue to receive support from substitute teachers and others at the schools with an ICT background. They also have support from the Secretary-level technicians, who deal primarily with technical, rather than pedagogical, issues.

The municipality is offering *Getting Started* to support teachers as they integrate ICT into their classrooms. Additionally, it is investing in physical resources: most schools now have a computer lab with at least 18 computers, an interactive whiteboard, and several “digital tables.” There are plans to increase the number of computers in each school to 36 (which is the approximate class size) so that students do not have to share. Teachers have received some training on use of the whiteboards and tables, and many are already teaching their students to use these resources. A few schools, which do not have computer labs, have Classmate PCs for students and laptops for teachers.

In Indaiatuba, 92% of survey respondents have a computer lab in their school and 91% have Internet access at school.

Indaiatuba has adapted the *Getting Started* curriculum to include a technology platform they had previously introduced at their schools: Oracle’s thinkquest.org, which is a protected Internet environment designed for schools. Last year, Indaiatuba teachers received professional development on and access to Oracle’s thinkquest.org, and it is currently being used as part of the ICT initiatives from the Secretary of Education. ThinkQuest adds a Web 2.0 element to *Getting Started* and its use within the course is intended to increase teachers’ comfort with and use of the portal. In addition to having discussions during course time based on discussion questions in the *Getting Started* curriculum, teachers post their thoughts on ThinkQuest and are able to respond to one another’s ideas.

Finally, technology has become an important skill for Indaiatuba's teachers to have because of increased emphasis on municipality-wide, technology-based projects, such as the "virtual book." The virtual book project is a part of the *Ler Faz Bem* (loosely translated, "Reading Is Good for You") initiative. In it, classes of students participate in a municipality-wide contest to produce the best book, using technology as a medium. The winning classes receive software and the winning teachers receive laptop computers.

The municipality plans to continue to train new teachers with *Getting Started*. They are also considering use of the *Essentials* course.

Goiânia

Two different implementation models of *Getting Started* were used in the state of Goiás (in the metropolitan area of the capital Goiânia), and the change from one model to the other is mostly a result of new partnerships and staff changes at the state and local Secretary of Education offices after the election in late 2008. Educational technology training and professional development is provided to public school employees through the Secretary of Education's regional *Núcleos de Tecnologia Educacional* (Educational Technology Nuclei or NTEs). Because NTE teacher trainers, called *multiplicadores* (multipliers), offer a variety of courses, and include *Getting Started* in their repertoire, the terms MT and multiplier are often used interchangeably. Two veteran multipliers were the MTs in the first model. One of these two MTs also trained a new cohort of MTs for the second model.

In late 2007, MTs trained 40 youth- and adult-education teachers in Goiânia on Getting Started. Additionally, the course is required of all staff at five Brazil Telecom Educação Digital schools.

In late 2007, two MTs trained 40 youth- and adult-education teachers in Goiânia on *Getting Started* Version 1.0 for one week. The more veteran MT of the two purposely targeted schools with little access to technology and teachers with little or no prior experience with computers. About 20 morning shift teachers traveled to a school with a computer lab for 3 hours of training each afternoon. The afternoon shift teachers did the same, but did so in the morning and with a different MT. There has been little follow-up with the teachers who participated in this first cycle of *Getting Started* trainings. Many of them have stayed in the same schools; some of the schools where they work now have computer labs; about a third of them have moved to new schools, become administrators, and two reportedly work in supporting technology use as a *dinamizador* and a multiplier.

The second implementation of *Getting Started* in Goiânia fits into a coherent system of reforms pushed by the new Secretary of Education administration. Instead of being an optional professional development opportunity offered to individual teachers, *Getting Started* and *Essentials* are required of all staff at the five Brasil Telecom Educação Digital (digital education) pilot whole-day schools. The state of Goiás aims to transition all elementary schools to a whole-day model, where students attend regular academic classes in the morning shift and stay on all afternoon to participate in a variety of workshops, such as computer, dance, music, and sports. Five whole-day schools (*Escolas Integrais*) received computer labs and *Getting Started* training as part of the Educação Digital project.

In May 2008, a veteran MT trained the initial group of *Getting Started* teams including four members of each of the five schools (principal, coordinator, *dinamizador*, and administrator) and six multipliers (who became the lead MTs for the training of teachers in June 2008.) This training of trainers took 24 hours and was delivered over the course of 1 week. Teachers and administrative staff received 24 to 30 hours of *Getting Started* training during the course of 1 week in June 2008. *Essentials* was introduced in a similar fashion, starting with the training of trainers in July 2008, followed by the teacher training in September 2008. After both courses, teachers at each school created classroom projects that satisfied both the *Getting Started* Action Plan and the Educação Digital's technology project requirements.

Findings

Findings from the study are organized by research question. We begin with an examination of the effects of the course on teachers' use of technology. We then look at its impact on pedagogy, the fit between *Getting Started* and *Essentials*, and the integration of *Getting Started* with other technology programs in Indaiatuba and Goiânia. Finally, we present "critical factors for success" of the *Getting Started* course, based on the experiences of teachers in Brazil.

Effects of *Getting Started* on Teacher Technology Use

The first research question asks how well *Getting Started* has helped individual teachers use technology in support of their teaching practice. We found that there were shifts in teachers' confidence in using technology, use of technology with students, and personal technology use. For example, 69% of teachers surveyed said that they use computers more often than they used to, and 64% said they use the Internet more often.³ Impacts were seen in terms of teachers' use of technology for planning work, although these effects were not as strong. The course has also had some effects for school leaders.

Sixty-nine percent of teachers survey said that they use computers more often than they used to, and 64% said they use the Internet more often. Most teachers felt they had gained confidence with technology through taking the course.

Confidence with technology

In both Goiânia and Indaiatuba, the clearest finding was that most teachers felt they had gained confidence with technology through taking the course. Frequently, they said they were no longer as fearful about taking their students to the computer lab. A school leader said that as a result of the course, she hears her staff saying they can use technology and sees them acting on that ability. In contrast, that same school leader had earlier in the year told us that it was "too soon" to see the impact of the course on the teachers in her school. Generally, teachers in Indaiatuba whom we interviewed both in March and November sounded more confident later in the year. In March, they tended to say, "Maybe I'll try" using technology, while in November, they reported on a variety of projects they had already done using computers. Survey data from Indaiatuba confirm this shift in confidence.

³ Surveys were only given in Indaiatuba; therefore all survey results reported are from Indaiatuba only.

Teachers were asked to rate how advanced they were in technology use last year and this year.⁴ Results are shown in the table.

Table 2. Teachers' Changing Views of Themselves as Technology Users

| <i>Describe your level of using technology in your teaching...</i> | Last Year | This Year |
|--|------------------|------------------|
| Expert User | 4% | 9% |
| Advanced User | 10% | 30% |
| Intermediate User | 49% | 53% |
| Novice User | 31% | 7% |
| Never Used Technology | 6% | 1% |

Note: Levels of technology use were defined as follows:

- Expert User: I depended on technology daily for many important aspects of my work as a teacher.
- Advanced User: I frequently used technology in my work as a teacher.
- Intermediate User: I used technology in some of my work as a teacher.
- Novice User: I used technology a few times, but not in my work as a teacher.
- Never Used: I never used computer technology.

The shifts are striking: while 31% of teachers said that last year they were novices, only 7% said that this year they are novices. Similarly, only 10% of teachers said that last year they were advanced users, while 30% said that this year they are advanced users. The percentage who said they never used technology dropped from 6% to 1%. Although these data are based on self-report, they nevertheless represent a shift in the way many teachers think about themselves in relation to technology.

When the data are broken down by when teachers took the course, the first group of teachers (who completed the course around February or March, 2008) appears to have changed more markedly in their self-assessments than the second group (who finished the course in July or August). The difference between the groups is not surprising given that the course was initially offered to less technologically-experienced teachers, and it suggests that the course may have a higher impact for teachers who are less familiar with technology.

Use of technology with students

Teachers in Indaiatuba and some teachers in Goiânia were participating in a variety of other technology programs which, together with *Getting Started*, obligated them to translate their new technology skills into lessons and activities for students that involved technology. As was the case last year, many teachers saw the pedagogical aspects of *Getting Started* as “pedagogy for the computer lab” rather than pedagogy to be more generally applied to their teaching practice. Discussion of student-centered learning is common in Brazilian schools, so what was important and new for these teachers was not the concept of student-centered learning, but how to use technology themselves and how to bring that technology to their students.

Many teachers saw the pedagogical aspects of Getting Started as “pedagogy for the computer lab” rather than pedagogy to be more generally applied to their teaching practice.

⁴ It is important to note that this survey was not conducted at two points in time. In November, teachers responded to the following two questions: “Think about LAST YEAR. From the options below, please select the one that best describes your level of experience using technology in your teaching LAST YEAR” and “Think about THIS YEAR. From the options below, please select the one that best describes your level of experience using technology in your teaching THIS YEAR.”

As noted above, teachers in Indaiatuba were expected to begin taking their students to the computer lab once a week. The lessons taught in the computer lab were expected to integrate technology use with curriculum content; rather than using lab time as “technology class,” the time was to be used to extend the content learned in regular classes. Two major, municipality-wide projects gave teachers a clear place to start with technology: the Ler Faz Bem virtual book project and the Toyota-sponsored environment project. Most teachers mentioned one or both of these projects when describing what their students had done in the computer lab. To create virtual books, for example, students typed in a word processing program, created multimedia slideshows, and drew with painting programs. Teachers noted that word processing programs were useful for revision of writing, and the Internet provided a new place for students to conduct research. Other projects were school-based; one teacher described a history project in which students used the computer lab to research the history of the Portuguese royal family’s visits to Brazil. Indaiatuba teachers also made use of ThinkQuest to have students post comments on stories or pictures, respond to questions, and send messages to one another. The teachers we observed appeared more comfortable using the lab than they had in our visit earlier in the school year.

**Stories of Impact:
Connections between
Home and School**

One teacher noted connections that technology enables between school and home for her students. Students go to the computer lab during class, and then go home and ask their parents to take them to cyber cafés. While the class was studying animals, one student came into class with a picture of a seal that he said he had found online at the cyber café with his mother. The teacher said that through technology, she can show her enthusiasm for learning to her students, and they in turn pass that enthusiasm on to their families.

In Goiânia, teachers whose schools were participating in the Educação Digital program reported frequent use of computers with their students. An art teacher said she used to teach class with paper and pencil, but now she uses text and images on the computer. Another mentioned several kids’ websites that she likes to have her students visit. A third described a project in which her students were creating a “magazine of vertebrate animals” using a word processing program to create a table with the types of vertebrates and an index with definitions. Teachers whose schools did not have more comprehensive technology programs, however, reported much less use (or no use) of computers with their students. One teacher took students to the computer lab for the first time during the evaluation visit.

Although many teachers are taking their students to the lab more frequently, the assignments they give to students are not always reflective of 21st-century learning principles or innovative uses of technology. A common activity is to have students memorize a text in class and then type it in the computer lab, which appears to be a test of memorization and typing skills more than an opportunity for critical thought. One class used computers to read a Word document with information the teacher had compiled. However, there were examples of creativity: one teacher had students write their own versions of a familiar fairy tale on ThinkQuest; a music teacher sought out YouTube music videos (so that she could show students a concept rather than describe it), had students research music

Although many teachers are taking their students to the lab more frequently, the assignments they give to students are not always reflective of 21st century learning principles or innovative uses of technology.

history, and was planning to have students create a video; and in another class, students wrote stories about their photos with plans to eventually turn the photos into a movie. These examples suggest that there is movement toward innovative use of technology and student-centered learning, but that there is still a distance to go.

Personal technology use

Although much of their focus was on how to use technology with their students, teachers also talked about their personal uses of technology and seemed on the way to becoming more technology-literate. In this area, there appears to have been change for almost all of the teachers we interviewed, including those in Goiânia who did not have as many supporting programs. Teachers were proud of their ability to use e-mail (one said she was happy that now when people ask whether she has an e-mail address, she can say yes) and noted that their technology literacy helped them relate better to their own children. One said that she can talk with her son, who is studying computer programming, now—their conversations flow better now that she has some of the same language. Another said that *Getting Started* has helped her be able to do her university coursework. Several teachers said they had bought computers for themselves as a result of the course, and many mentioned they were now active users of Orkut, a social networking site similar to Facebook that is popular in Brazil. One said she is now managing her social life largely through Orkut; it is where she hears about upcoming weddings and other events. Notably, Orkut is not a part of *Getting Started*;

Teachers were proud of their ability to use e-mail and noted that their technology literacy helped them relate better to their own children.

the course has very little time dedicated to learning to use the Internet. However, some MTs appear to have allocated some course time for familiarizing the teachers with more Internet tools.

Changes in teachers' planning

One of the goals of the *Getting Started* course is that teachers will learn to use technology in ways that will be useful for their administrative and planning work as teachers—activities in the course include a Weekly Lesson Planner and Classroom Inventory, for example. The assumption is that teachers who take the course do not necessarily have access to computers that they can use with their students, but do have access to a computer that they can use during their planning time or after school. In Indaiatuba and some of the schools we visited in Goiânia, teachers have access to computer labs and indeed are expected to begin taking their students to the lab regularly and this level of access and expectation for use with students is affecting their use of technology. Teachers reported that they think about technology when planning their classes, because they need to decide what they will ask students to do in the computer lab. However, they do not tend to *use* technology *during* their planning. When they do, they are usually using the Internet to conduct research, rather than creating lesson plans in Word or PowerPoint. A few teachers are using the Grade Book they created during the course, but others said they do not use the *Getting Started* Grade Book and other tools because they already receive these forms from the Secretary of Education and are expected to use those versions. Those teachers who reported using the *Getting Started* Grade Book were using it unofficially, to continually monitor their students' progress, but still had to complete

Teachers do not tend to use technology during their planning. When they do, they are usually using the Internet to conduct research, rather than creating lesson plans in Word or PowerPoint.

the official forms. One teacher said she shows her grading spreadsheet to students so that they too can follow along with their progress. Another said the Grade Book was useful when she was picking the Student of the Month, since all the information she needed was available in one place.

Data from the survey confirm that teachers are frequently not using the planning tools that are introduced in the course. Twenty-nine percent of teachers surveyed said they do not create technology productivity tools like the ones covered in the course; another 22% say they do create such tools but they do so less often (4%) or as often (18%) as they used to. Teachers were asked if they had used each specific tool covered in the course and if so, how useful it was. On average, 50% of teachers reported they had not used each tool (ranging from 67% who said they had not used the Pictograph to 31% who had not used the Instructional lesson). Multimedia tools appeared to have gotten the most use by teachers, while spreadsheets were least popular. Teachers who had used the tools typically said they were valuable or very valuable. However, because teachers are often provided planning tools by the municipality and because their main priority is to get students using computers, the particular tools learned in *Getting Started* do not appear to be of much value for these teachers. The usage and value ratings on the survey seem high in comparison to interview data; survey data may have been influenced by a desire not to criticize the course. Teachers and municipality staff emphasized that they very much like the course, but when shown the list of tools they had created in the course, teachers tended to say, “I liked multimedia” or “I liked word processing” and rarely said that specific tools were useful to them. A few teachers said they had tried to adapt the *Getting Started* activities for use with students, but this type of use was not common. For the most part, the *Getting Started* tools could not be taken directly to the classroom. Interview data suggest that e-mail and the Internet are teachers’ favorite

Teachers’ main priority is to get students using computers.

technology tools, but these are not a focus of the course. The most commonly used tool that came directly from the course was ThinkQuest.

The *Getting Started* course culminates with teachers’ creation of an Action Plan that “describe[s] how [they] intend to apply the technology literacy and 21st-century teaching and learning skills and approaches [they] have acquired to enhance [their] productivity and professional practices in the classroom”(Intel, 2006). An Action Plan is a document in which a teacher states his or her plans for technology use, anticipates challenges, and lists steps to take to fulfill the goals. For example, a teacher might set the goal, “I will present three lessons via PowerPoint next semester” as a part of his or her plan and then list potential challenges and steps to take, such as reserving time in the computer lab, finding websites that offer images for educational use, etc. As we found in the earlier case study, Action Plans were not significant for the teachers. Most of the interviewees did not clearly remember creating Action Plans. Those who did recall them had not created Action Plans as defined in the course, but rather had produced lesson plans. For example, one teacher described an activity that was part of a project on vegetable gardens, in which she photographed stages of plant growth, presented them to her students via computer, and allowed students to comment either by computer or on paper. In Goiânia, many of the teachers remembered creating the *Mão na Massa* (literally, “Hands in the Dough” or “Hands-On”) plans as a part of the Brasil Telecom project

E-mail and the Internet are teachers’ favorite technology tools.

requirements; these plans were similar to the *Getting Started* Action Plans but were generally schoolwide technology action plans. Creating lesson or activity plans seems to make more sense to teachers; they have a direct use especially for teachers who are expected to bring their students to the computer lab. Action Plans as defined in the course are not directly usable; they ask teachers to plan their future technology use in a way that seems to be too abstract to be useful for them.

Challenges

Although teachers have largely been successful in overcoming hurdles to using technology, they named some barriers to further developing their skills. Time, of course, was one, mentioned by many teachers: they would like more time in the computer lab, more time to plan their lessons, and more time to simply “play around” on computers. Access was another challenge for some teachers; a few mentioned they would be able to do more if they had a computer at home and survey data showed that some teachers feel they need better access to computers (22%) or the Internet (40%). Some teachers also maintain fears that students will “mess up” the computers somehow or that they, the teachers, will lose control of class because the students so frequently know more about the computer than they do.

In Goiânia, it was clear that in schools that had a *dinamizador* to help teachers in the computer lab, use was higher than in schools where this role did not exist. Teachers were not yet confident enough to use the lab on their own. In Indaiatuba, we saw in March that frequently MTs were present when teachers took students to the lab; although in November they were not present as often, they were still available if needed, and many teachers noted that schools had other ways of helping those who were not as confident—sending a substitute or other teacher along to help, for example.

Finally, teachers said that what to do next was a challenge they faced—they want to use the computer in interesting ways with their students, but are lacking the knowledge of what to do. Almost every interviewee wanted to know when they would get the next course, one that would go deeper. Forty-three percent of survey respondents said they felt their computer skills were not yet strong enough to successfully integrate technology into teaching. Requesting a follow-up course was more common in this group of interviewees than it had been in March, suggesting that the school year has given teachers time to use what they learned in *Getting Started* and they are now ready for more.

Challenges to Technology Use

Challenges cited by teachers included lack of the following:

- Time to get familiar with technology and plan lessons
- Access to technology
- Classroom management in the computer lab
- Technical and pedagogical support
- Ideas for how to use technology with students

Effects for school leaders

The school leaders in Indaiatuba and some in Goiânia had participated in *Getting Started* themselves, and they too reported that the course had impacted their lives. While in March, school leaders were only partway through the course, in November, they reported that they use what they learned to produce materials for meetings, create presentations, and chart student achievement over time. They are beginning to use technology to communicate with

parents, for example, via school websites. Additionally, they are often using teacher meetings as a chance to pass on what they learned to their staff.

Effects of *Getting Started* on Pedagogy

As noted above, most teachers saw the pedagogy-focused parts of *Getting Started* as pedagogy for the computer lab, rather than something to be applied in the regular classroom, possibly because student-centered teaching and learning is not a new topic of discussion in Brazil. In contrast, these ideas were fairly new to teachers in some of the countries studied in the previous evaluation project, and those teachers tended to say they were trying to apply what they learned to their teaching practice (EDC & SRI, 2008). When surveyed, most teachers in this study agreed with statements such as “Student-centered instruction helps prepare students for the 21st-century workplace” and “Student learning is best promoted through active exploration of ideas and materials.” A few specifically commented that they did not find the pedagogy-focused discussions and modules useful or complained that those modules took away from their hands-on time with the computer and some did not remember these modules. Others, however, said that it was important to them that the course was a teacher-focused technology course, rather than a general technology course, and that having discussions about student-centered learning was always a useful reminder. Survey results for questions related to 21st-century teaching and learning are displayed in Table 3.

Teachers said it was important to them that Getting Started was a teacher-focused course, rather than a general technology course.

Table 3. Teachers’ Views of 21st-century Teaching and Learning

| | Percentage of teachers who agreed or strongly agreed |
|--|---|
| a. Student-centered instruction helps students prepare for the 21st-century workplace. | 92% |
| b. The most important goal of instruction is to encourage critical thinking among students. Learning facts is secondary. | 54%* |
| c. Student learning can be promoted through collaboration with others. | 96% |
| d. Students learn to think critically by reviewing and revising their work. | 96% |
| e. Student learning is best promoted through active exploration of ideas and materials. | 98% |
| f. Student activities should be connected to long-term goals to build understanding and skills. | 84% |
| g. Teachers need to build on students’ existing strengths to enhance their learning. | 29%** |
| h. The content of students’ learning should be at least partly based on student interest. | 89% |

* This was the only item with which a large percentage of teachers (41%) disagreed or strongly disagreed.

** Most teachers (66%) said they had “no opinion” on this statement.

We examined differences between groups of teachers in their responses to these items, and found that teachers who rated themselves as advanced or expert users of technology tended to agree more strongly with some items (items e, g, and h) than their less tech-savvy peers.

Teachers did not seem to remember many specifics about the 21st-century teaching and learning approaches introduced in *Getting Started*. They talked in general terms about the

importance of teaching students who are growing up in the 21st-century, and usually associated this with the importance of giving students the opportunity to use computers. A few mentioned collaboration or critical thinking; one said she learned about composing groups of students in effective ways from the course. She said that when the class is learning a new software tool, she has one group work with the software first and then those students help all the others learn it. Integration of ThinkQuest into *Getting Started* in Indaiatuba provided teachers a concrete way to change the way that students collaborate. Most teachers were using ThinkQuest with their students, allowing them to comment on each other's work or send messages. Students also tended to collaborate while using computers, since most

Integration of ThinkQuest into Getting Started in Indaiatuba provided teachers a concrete way to change the way that students collaborate. Most teachers were using ThinkQuest with their students, allowing them to comment on each other's work or send messages.

schools did not have enough machines in the laboratory for each student. A few teachers said that they now were allowing students to play a role in directing their education. For example, one teacher said that students ask her "Why not do it this way?" when she presents a plan for an activity.

School leaders talked more specifically about 21st-century teaching and learning and its importance to their missions. They said that the goals of the municipality fit well with the pedagogical approach presented in *Getting Started*: they are moving toward having teachers act as facilitators of learning and treating students not as repositories of instruction but as active participants in the learning process. They appreciated that *Getting Started* reinforced the same themes that the municipality was promoting; one said it was the "perfect marriage." One school leader thought that technology was useful for teaching students at different developmental stages, because the computers could go at each child's pace.

Correspondence of *Getting Started* and *Essentials*

In Goiânia, some teachers have had the opportunity to participate in both *Getting Started* and *Essentials*.⁵ While *Getting Started* is an introductory course, *Essentials* offers teachers training on how to integrate technology into the curriculum at a comparatively sophisticated level. One hope was that *Getting Started* would provide teachers a first step that would make *Essentials* more manageable. However, our case study suggests that *Essentials* is still very challenging for teachers. In fact, it appears that MTs enriched *Getting Started* by prompting teachers to think about how they could use technology with their students (at least in part due to local imperatives for teachers to integrate technology), but still felt they had to simplify *Essentials*. MTs reluctantly admitted that they had made some changes to the course. For example, one MT revealed that she showed the teachers all the content of the course, asked them what they would use the most, and focused on those areas, since there was not enough time in a one-week course to cover all the content. She noted that teachers particularly enjoyed creating essential questions for their unit plans and learning about search engines. For

Although teachers said that Getting Started provided an important foundation for Essentials and felt they could not do Essentials without Getting Started first, there was still a sense of a gap between the two courses.

⁵ Version 4.3 of the *Essentials* course was used for this training.

topics they did not have time to cover in depth, she made teachers aware of where they could find those topics in the book.

Although teachers said that *Getting Started* provided an important foundation for *Essentials* and felt they could not do *Essentials* without *Getting Started* first, there was still a sense of a gap between the two courses. One interviewee commented that there “was not a natural transition” and noted that *Essentials* should have more time allotted than they were given for it (the course was implemented in one week). They wished they had been able to do fewer hours per day, but more total hours, spaced out over a longer period of time. Another person said that teachers who were already more advanced in their technology skills learned a lot, but that those who were less advanced learned only a little. Teachers who took both courses seemed more comfortable with computers, but nevertheless needed support. They commented that the *dinamizadores* were helpful in providing support, filling in the gaps in their knowledge. Although Indaiatuba has not yet used the *Essentials* course, they plan to do so only after they have provided teachers with some workshops on technology tools that they hope will bridge the gap. They are also concerned about the complexity of the course and the quantity of content covered.

Integration of *Getting Started* and Other Technology Programs

In both Indaiatuba and Goiânia, *Getting Started* is only one of a number of technology-related programs that teachers are exposed to. As explained above, Indaiatuba has made a major financial investment in educational technology and training for teachers, and teachers in Indaiatuba have access to and training on ThinkQuest, interactive whiteboards, digital tables, and, in some schools, Classmate PCs. Integration of ThinkQuest with *Getting Started* not only exposed teachers to a Web 2.0 tool they could use for meaningful communication between teachers, but also gave them something they could use directly with their students. After the course, teachers knew how to set up student accounts, post material for students to explore, set up survey questions for students, and so on. One school leader said that having ThinkQuest as a part of the course incentivized the course for teachers; they wanted to learn to use this tool because it was so directly relevant to the classroom. Training on the interactive whiteboards and digital tables showed teachers new ways to integrate technology with their classes, often via games that students enjoyed.

Teachers, school leaders, and master teachers tended to talk about all the programs in which they participated as one big program, suggesting that there is coherence in the messages they are receiving.

Stories of Impact: A *Ler Faz Bem* Winner

One interviewee, a technology novice prior to the course, won the *Ler Faz Bem* contest for her grade level for the virtual book that she and her class created. She described the creation process: because they planned to use PowerPoint, she referred back to the projects she created in the course and to her *Getting Started* manual to remember what to do. When she was unsure, she sought help from the team at the Secretary of Education and from her son's girlfriend, who knew about PowerPoint. Her son also provided encouragement as she worked, telling her, “There's no great secret about the computer; you have to keep messing around.”

Teachers in Indaiatuba were encouraged throughout the school year to use the computer lab at least once a week with their students, and this expectation, combined with municipality-wide, technology-focused projects such as the virtual book and

environment projects, gave teachers ways to use technology in support of the curriculum. Desire to participate in these projects gave teachers motivation to take their students to the lab; if they did not, the students would be disappointed. It also gave teachers clear activities to have students do on the computers, such as writing and illustrating stories.

As noted above, some schools in Goiânia were participating in the Educação Digital project, which provided them with new computer labs, software, and training. These schools were also a part of the state's Escola Integral effort, a movement toward full-day school, which meant they had more time for activities such as use of the computer lab. Further, some schools had someone in the role of *dinamizador* to assist teachers in the computer lab. The *dinamizadores* help create activities for use in the lab and encourage teachers when they become frustrated with technology. One teacher said that without the *dinamizador*, her arms would be “cut.”

Teachers, school leaders, and master teachers tended to talk about all the programs in which they participated as one big program, suggesting that there is coherence in the messages they are receiving. Evidence suggests that this coherence comes at least in part from the way that the programs are presented to teachers. For example, in Indaiatuba, the group of MTs is made up of staff members of the Secretary of Education's technology office or teachers in the municipality's schools. They are, therefore, interior to the schools they serve and are able to adapt programs to fit the mission of the municipality. The increased focus on integration of technology in teaching that we saw in both Indaiatuba and Goiânia, for example, seems to come from the MTs' willingness to “facilitate the conversation,” as one MT put it, that the teachers need and want to have, given the priorities of their schools and municipalities.

Some of the teachers we interviewed in Goiânia were not located in schools that participated in projects such as the Educação Digital; additionally, some did not have access to *dinamizadores*. Outcomes for these teachers appeared to be very different. One teacher in a school that lacked a *dinamizador* said, “Really, we need a *dinamizador* in the lab, so I can bring my kids in here. I'm not brave enough to bring my kids.” Teachers in schools that lacked coherent technology initiatives tended not to be using technology as much as their counterparts; although they had increased in their personal use of technology, they were infrequently using technology with their students and generally seemed confused about what they should be doing with technology.

One teacher said, “Really, we need a dinamizador in the lab, so I can bring my kids in here. I'm not brave enough to bring my kids.”

Taking this year's case study in Brazil together with last year's studies in Brazil, China, Costa Rica, Nigeria, and Vietnam, we can discern three scenarios of impact of *Getting Started*, which appear to be dependent on the existence of supporting programs like the ones described above. When teachers participate in *Getting Started* but do not receive follow-up support (as in some schools in Goiânia), the result is often some technology use for personal purposes, but little use related to teaching. When teachers get some support along with *Getting Started*, they use technology for teaching purposes, but do not reach the point of having students use technology in class. We saw this scenario of use in China, where teachers were given access to the multimedia classroom so that they could use technology to present to students and were encouraged to try out student-centered learning. They were increasingly using

technology and were trying to adapt their pedagogy, but were frustrated because assessments of their students were still traditional; to prepare students adequately for these tests, they could not make a major shift away from lectures and toward student-centered projects. Additionally, without more computers at the schools, they could not move to student use of technology in class. A third scenario of use occurs when teachers have access to technology and support for its use through complementary programs; we saw that teachers in Indaiatuba and Goiânia began taking their students to the lab to have the students use computers. However, the activities designed for students were not always innovative or student-centered, and there appeared to be little impact on teaching practice outside of the computer lab. The table below summarizes the three scenarios described above. It is important to note that these scenarios are based on a small number of case studies; further research could reveal variations to these scenarios or new scenarios.

Table 4. Scenarios of Impact of *Getting Started*

| | Implementation Context | Case Study Results |
|------------|--|--|
| Scenario 1 | <i>Getting Started</i> without follow-up support | <ul style="list-style-type: none"> • Some teacher technology use for personal purposes • Little use related to teaching |
| Scenario 2 | <i>Getting Started</i> with some follow-up support and technology access | <ul style="list-style-type: none"> • Some technology use for personal/teaching purposes • Little student use of technology |
| Scenario 3 | <i>Getting Started</i> with strong follow-up support and technology access | <ul style="list-style-type: none"> • Technology use for personal/teaching purposes • Student use of technology |

To some extent, the lack of change in teaching practice may be due to contextual factors; last year’s report showed that the extent to which teachers valued the pedagogy-focused course modules depended on the system of education in their country. In countries that had a history of traditional, teacher-centered education but had recently begun to discuss student-centered learning, the 21st-century teaching and learning modules were well-received by teachers because they explained in concrete terms ideas that previously had been confusing to them. In countries with a more constructivist bent, those modules seemed somewhat repetitive to teachers compared with what they regularly discuss in their schools and 21st-century pedagogy became synonymous with “using technology in the school.”

Critical Factors for Success

Seeing *Getting Started* implemented in three ways (one in Indaiatuba and two in Goiânia) allowed us to identify important factors that appear to promote success of the program. Examples from Indaiatuba and “Educação Digital” schools in Goiânia demonstrate the kinds of supports that help teachers to use what they have learned, while counterexamples come from schools where teachers did not have as many supports available. These factors may be used as a checklist of sorts for others planning to implement or evaluate *Getting Started*.

First, as described above, the course is more successful when it fits with and is implemented in coordination with other school or municipality goals, plans, and programs. In both Indaiatuba and those schools in Goiânia that participated in the Educação Digital project, we saw that having a schoolwide movement toward integration of technology with teaching encouraged teachers to feel that what they learned in *Getting Started* was necessary to their

work and would help them to be better teachers in a digital age. School leaders had goals related to technology use; they said they wanted to bring the world into the school, to involve all their teachers in use of technology, and to help teachers to use technology in ways that are pedagogically sound and purposeful. They are also determined and feel *Getting Started* helps them push change forward. One school leader said, “There are some people who don’t want to change, and the course came and is forcing change.”

Second, availability of resources is a basic need. Teachers must have access to computers at school, and it is helpful when they also have access at home to allow more “play time” to familiarize themselves with computers. If the goal is student use of technology, there must be adequate numbers of computers for students to use. This level of resources requires dedicated funding in addition to physical space—some schools in Indaiatuba had digital tables but did not yet have a classroom available for them. As previously noted, all but 1% of the Indaiatuba teachers surveyed had computer access at school, most in a computer lab. All but 9% had Internet access at school. Most (86%) said it is easy or very easy to schedule time in the computer lab. Indaiatuba’s municipal government and the Brasil Telecom program in Goiânia have made technology an explicit priority and have dedicated large amounts of resources to the purchase of technology and training for teachers.

- Critical Factors
for Program Success**
- ✓ Alignment with school/municipality goals, plans, and programs
 - ✓ Availability of technology resources
 - ✓ Course scheduling
 - ✓ Motivation or encouragement for teachers to use technology in the classroom
 - ✓ Strong master teachers
 - ✓ Ongoing technical and pedagogical support
 - ✓ Supportive school leaders
 - ✓ Common planning time for teachers and school leaders
 - ✓ Critical mass of participants in a school
 - ✓ Teacher communities of support

Third, the structure of the course schedule appears to contribute to its success. Some of the teachers we interviewed participated in the course one or two times a week over many weeks, while others took the entire course in one week. Teachers who took the course over a longer period of time appeared to have been better able to assimilate what they had learned into their work. Those who took it in a week felt they had not had enough time to try things out before moving on to the next topic.

Indaiatuba’s municipal government and the Brasil Telecom program in Goiânia have made technology an explicit priority and have dedicated large amounts of resources to the purchase of technology and training for teachers.

Next, teachers need to be motivated to use technology. We saw this motivation come from a variety of sources. In Indaiatuba, teachers were expected to begin taking their students to the computer lab, and tools like ThinkQuest and projects like the virtual book gave them concrete ideas for what to do with their students in the lab. Teachers were also incentivized by the bonuses or professional points they received for taking the course and by the certificates they were to receive

Teachers were motivated to use technology by their students; many teachers told us that their students wanted the opportunity to use technology, were bored by the blackboard, and pushed their teachers to take them to the computer lab.

for completion (notably, one group of teachers in Goiania had not yet received their certificates and were clearly disappointed and frustrated). Teachers were also motivated by their students; many teachers told us that their students wanted the opportunity to use technology, were bored by the blackboard, and pushed their teachers to take them to the computer lab. Teachers said that students enjoyed class more when technology was involved and many thought students learned more when using computers. Several said that attendance was better on days that their class was assigned to use the lab and that students were more interested and attentive.

Strong master teachers and ongoing tech support staff were also critical factors for teachers to make use of what they learned in *Getting Started*. In Indaiatuba, MTs were a common feature of computer labs when we visited in March, and teachers commented that having someone else in the room helped them feel more confident about taking their students to the lab. By November, MTs appeared to have stepped down the amount of time spent on direct support of teachers, but nevertheless teachers felt supported. Many commented that their MT had allowed them to ask many questions during the course (one said she might have “abused” her MT a bit) and had made the course very clear. Many teachers mentioned that they had technical/pedagogical support available readily from the technology department at the Secretary of Education office, although a few wished the MTs spent more time in the computer lab with them, as they had used to do. Support was given by the same group who acted as MTs for the course, all of whom have training as teachers and strong technical abilities. In Goiania, we saw a similar role played by the *dinamizadores*, and it was clear that in schools without *dinamizadores*, teachers were less comfortable taking their students to the computer lab.

Teachers also benefited from supportive school leaders. As mentioned above, technology integration was a goal for the school leaders we interviewed, and they took action to support their teaching staff in their efforts to use technology. One school leader described how she checks in with teachers at staff meetings to find out whether they are using the lab. For those who say it is too hard to take their students there, she will rearrange schedules and find substitutes so that a teacher with technology experience can accompany them to the lab, or will coordinate classes so that a fourth-grade class can help a class of first-graders in the lab. Several school leaders said that they regularly use their planning time with teachers to talk about technology.

One teacher said that her favorite part of Getting Started was the exchange of ideas between all the teachers and their MT, which she said had continued after the course ended.

Teachers also support each other as they begin to use technology, and a strong teacher community appears to be a significant cause of the success of the course in Indaiatuba and the “Educação Digital” schools in Goiânia. Last year in Indaiatuba, only a small percentage of the teachers in each school had taken *Getting Started*, and they expressed some loneliness and a feeling that there was a rift between those teachers who had taken the course and those who had not. Now, however, many more teachers have taken the course and they seem to have reached critical mass. Teachers talked frequently about how much support they receive from one another. Similarly, in Goiânia we saw that greater impact in a school where all the teachers had taken the course than in schools where only a few teachers were involved.

Teacher community went beyond reaching a critical mass—teachers also encouraged and assisted one another. Several said they developed projects together with their colleagues, assisted those who were less comfortable with technology, or commented on each other’s ideas. They said they communicated both in person and via ThinkQuest. One teacher said that her favorite part of *Getting Started* was the exchange of ideas between all the teachers and their MT, which she said had continued after the course ended. This close-knit teacher community was not a result of the course; all agreed that teachers commonly helped each other prior to the course. However, *Getting Started* allowed them to add technology to the list of things they help each other with.

Recommendations

The case studies in Brazil have generated some findings that may be useful to the global content team and all those planning to implement it. This feedback also suggests some possible changes for the next version of the course.

- It is challenging for teachers to assimilate a large amount of content in a short time period. Teachers who took the course distributed over several months seemed less overwhelmed than those who took the entire course in one week. We recommend that scheduling be carefully considered, and when possible, that the course be implemented over a longer period.
- Spreadsheets were the least popular software tool covered in the course. Teachers had trouble seeing their utility for their daily work. One option would be to coordinate closely with local authorities to make the spreadsheet tools in the course match their local requirements for tools like Grade Books.
- Teachers did not have access to the Help Guide, a manual that provides step-by-step instructions for certain technology skills, which they might have found useful. “We became the Help Guide,” noted one MT.
- Many teachers wanted more hours in the course or a follow-up course.
- There were some problems with compatibility of the course books with the software used in most of the schools visited, BrOffice. The course books were all version 1.0 of the course; these compatibility problems may be solved in later editions.
- Teachers said they wanted to learn to use additional software such as Movie Maker. Several MTs added Movie Maker to the software they covered in the course; it was well-received.

We also found that those teachers who remembered the Action Plan were the ones who had created lesson plans that they implemented in their classes. Lesson plans were directly usable by the teachers, and we suspect this will be true for other regions and countries as well. Based on this finding, we recommend that the Action Plan be adapted to function more like a lesson plan.

Another key finding is that although teachers who took *Getting Started* were eager for another technology course, those who took *Essentials* found it overwhelming. Short courses on topics

of interest might help bridge the gap between the two courses. Such courses could focus on student-centered ways to apply technology in the classroom and Internet tools (such as blogs, online communities, etc.), which seemed to be the primary focus of teachers' interest in Brazil.

As has been discussed, in two of the three implementations we saw in Brazil, *Getting Started* is being used in combination with other initiatives to support teachers as they begin to integrate technology into the classroom. This use of the course is different than the way the course was intended—helping teachers learn to use technology for their own purposes rather than bringing it to students.

However, given the mandate and support teachers in Brazil had for using computers with students, there are ways that the course could be augmented to more directly prepare teachers for this effort. One possibility is that the products teachers create in the course be modified. Most teachers in this case study did not use the teacher-focused products after the course was completed, because their primary goal for the course was to gain the skills they needed to take their students to the computer lab. Their primary problem (and the problem for many teachers) is: what am I going to do with the students on Monday? Therefore, creation of student-focused products in the course would be more directly useful to teachers who hope to take their new knowledge directly to the classroom. For example, teachers might jointly build a collection of useful websites using a site like del.icio.us, find their houses on Google Earth, contribute to a blog for the course, or create a PowerPoint on a topic that they might ask students to create a presentation about. Ideally, the products would be reflective of the type of pedagogy *Getting Started* promotes—student-centered, 21st-century teaching. Brazilian teachers are currently often using technology in the same way they use chalkboards, and providing them with strong examples of activities that promote critical thinking, collaboration, and other 21st-century skills would help teachers learn to adapt to a new teaching style. For cases such as the ones we encountered in Brazil, one way to encourage teachers to reflect on pedagogy would be to include products that teachers could use directly with students and a checklist or rubric that teachers could use to evaluate these activities for their alignment with 21st-century skills. Products that allow teachers to integrate important content from the curriculum would also be useful as teachers try to weave technology into their work with students, rather than teaching it as a disconnected activity.

The teachers who participated in this case study were receiving support from a variety of sources which allowed them to take what they learned in *Getting Started* to the classroom, and yet even with these additional supports, their classroom application of technology was often based in traditional pedagogical techniques. Other teachers, without such supports and in cultures that rely even more heavily on traditional pedagogies, would almost certainly need assistance translating their new knowledge into classroom practice, if that is their mandate.

Conclusion

Getting Started has been successful in providing teachers in Brazil with an introduction to technology that has increased their confidence with computers and given them familiarity with some basic software tools. Teachers who were afraid of the computer have reported losing their fear and have had successful experiences using computers. They particularly appreciated that the course was directed at teachers; some had previously had bad experiences with more generic technology courses. Teachers say that they can now talk about technology and have gained entrance into the digital world. Most teachers now look for information online regularly and have used word processing or multimedia presentation software. In general, *Getting Started* provides the technological and pedagogical foundation for further professional development in these areas, consistent with its goals and design.

Although the course's primary goal is for teachers to learn to use technology themselves, not for teachers to begin using technology with students, we saw several situations in which *Getting Started* was being successfully used as one in a series of supports for teachers to integrate technology with the classroom. When implemented in concert with other technology reform programs, teachers began taking their students to the computer lab; teachers without a strong support system and encouragement to use technology with students rarely took this additional step. Therefore, within the right context of reform, the course can function well as a stepping-stone to technology integration.

The Brazilian case study lets us see more specifically how *Getting Started* can fit within multiple elements of a wider technology-oriented reform effort, and what role the course has in the progression towards technology integration with students. From this study, we see that supports that help teachers integrate technology include the following:

- Alignment with other school/municipality programs and goals
- Availability of technology resources
- Scheduling the course over a long period of time (e.g., short sessions once or twice a week as opposed to the full course in one week)
- External motivation for teachers to use technology in the classroom (e.g., a requirement to use the computer lab with students once a week)
- Strong master teachers and ongoing technical and pedagogical support
- Supportive school leaders and communities of teachers
- Common planning time dedicated to discussion of technology integration
- A critical mass of participating teachers in a school

The teacher-focused products created in *Getting Started* were, for the most part, not being used by teachers; their primary interest was in what they could do with students, not what they could do to increase their efficiency in calculating grades, and such. In situations such as the ones we studied in Brazil, it would particularly helpful to teachers to have course products that they could use directly with their students and that reflect a student-centered pedagogy. For example, the use of ThinkQuest in Indaiatuba (where ThinkQuest is incorporated into the *Getting Started* course) allows teachers to become comfortable with a Web 2.0 tool that they then use with their classes. Such changes would make the course's

technology activities more coherent with its pedagogical discourse, particularly for teachers in contexts where reform efforts to integrate technology with regular classroom practice are already underway. While many of the activities teachers assign to students in the lab reflect a traditional pedagogical style or do not allow for innovative use of technology, some teachers are becoming more creative. Those teachers who are using technology with students have started with small steps, but there are signs that they are becoming increasingly comfortable in the computer lab and in expanding their repertoire of pedagogical approaches.

References

Education Development Center, Inc. & SRI International (Eds.). (2008). *A first look at the Intel® Teach Getting Started course: Impact on teachers' knowledge and skills in five countries*. Retrieved from <http://download.intel.com/education/EvidenceOfImpact/Final-GettingStarted.pdf>

Intel Corporation (2006). *Intel Teach Program Getting Started Course*.

Appendix A: Evaluation Design for Getting Started Case Study in Brazil

Intel's Getting Started course offers participating teachers (PTs) an introduction to software productivity tools and student-centered approaches to learning. Teachers use technology to create products that can support their teaching work, and also provides opportunities to discuss new frameworks for understanding teaching and learning. Initially launched in 2006, Getting Started has been implemented in countries in Asia, Africa, the Middle East, and Latin America. Last year, implementation case studies were conducted in five countries: Brazil, China, Costa Rica, Nigeria, and Vietnam. Results were positive, but indicated a need to examine the long-term impact that the course has for PTs and the connection between Getting Started and Teach Essentials or other teacher professional development opportunities.

For 2008-2009, we have proposed to conduct a deeper case study on Getting Started in Brazil, a country in which Getting Started has been implemented for over a year and which provides interesting sub-studies of different types of implementation.

Research Questions

The case study would address three primary questions:

1. How well has Getting Started helped individual teachers use ICTs in support of their teaching practice?
2. How have the pedagogical features of the course affected teachers' beliefs and practices?
3. How does the Getting Started program fit with Intel Teach Essentials (online or face-to-face) goals in the country?

In addition to a focus on these primary questions, we recognize that, as an introductory program, Getting Started is a *stepping stone* to other forms of training and support. Therefore, we propose to add two new questions to our research focus:

4. What can we learn about the functional value of the course from studying examples of how it is integrated with other types of training, reform, and classroom practice in local schools?
5. Based on this study, can we determine reasonable early-stage benchmarks that can be used more generally in evaluations of the course?

Approach to Evaluation

Our approach to evaluating Getting Started is to conduct a case study in Brazil, where Getting Started has been underway for a year, and has been combined by some schools with other trainings, such as the Teach Essentials course. We will collect data from two cities, Indaiatuba and Goiania, in order to gather a broader picture of implementation and impact than was gained in last year's implementation-focused case study in Indaiatuba. Data collection will include surveys of both teachers trained in Getting Started and those who have not been exposed to the program; interviews of teachers, school leaders, master

teachers (MTs), and administrators; and classroom observations. LTNet, which has worked on Intel evaluation projects in Brazil in the past, will take the lead on making arrangements for case study visits and on survey administration. Two evaluators each from SRI and LTNet will collaborate to conduct interviews and observations, dividing in two teams, one for each city. SRI and LTNet will also collaborate on data analysis and reporting, with SRI taking the lead.

The first two evaluation questions are similar to questions that have been asked in previous case studies of Getting Started implementation. Existing protocols for teacher and school leader interviews and impact surveys address the topics of how Getting Started helped individual teachers use ICTs in support of their teaching practice, how the pedagogical features of the course have affected teachers' beliefs and practices.

The third evaluation question asks how the Getting Started program fits with Intel Teach Essentials (online or face-to-face) goals in the country, and the fourth asks about Getting Started's functional value as it is integrated with other types of training, reform, and classroom practice. We began to answer these questions in Indaiatuba last year, where Getting Started is being combined with use of Oracle's ThinkQuest as well as municipality pushes for teachers to integrate technology with classroom teaching, particularly with literacy, through the "Ler Faz Bem" initiative. Additionally, municipality staff in Indaiatuba indicated that they are already thinking about the connections between Getting Started and Teach Essentials, and considering whether teachers need a "bridge" course. We know that in Goiania some schools have already implemented both Getting Started and Teach Essentials. Our strategy for approaching these questions will be to document examples of the way in which Getting Started is used in conjunction with other teaching and learning supports, including Teach Essentials. We will probe to learn the ways that Getting Started has created opportunities where they had not existed before: either by providing instruction, materials or other resources that teachers wanted or needed, or by creating a link between parts of teachers' professional development pathway that were too wide for teachers to cross on their own.

The fifth question asks what early-stage benchmarks can be determined and used more broadly in Getting Started evaluations. Our strategy for approaching this question will be to focus on cases where the program is well-implemented to establish standards for particular measurable outcomes that we feel align best with the program goals. From our "best case" scenarios, we will work with Intel to extrapolate basic benchmarks for teachers' change in attitude and practice. We might be able to propose that, for example, six months after training, 80% of teachers feel that, based on what they learned in the course, they have been able to avail themselves of new opportunities or developed new skills that make their teaching practice more efficient. Ideally, we would interview and survey participating teachers at different stages after taking the course. If possible, we will administer surveys to both program participants and a matched set of teachers not trained in Getting Started to determine if some key behaviors) as well as attitudes are more prevalent among Getting Started trained teachers than among their colleagues.

Sources of Data

We will collect data in three ways: surveys, interviews, and classroom observations.

Surveys. Surveys of a large number of participating educators will provide systematic data about the impact of Getting Started on teachers' use of technology and 21st-century pedagogies. We will use a comparison group strategy to examine the differences between teachers who have taken the course and those who have not. Ideally, the comparison group will match the group of trained teachers who are surveyed: they will be teachers from the same schools or school system. We should note that in some schools, teachers volunteer for participating in the Getting Started training, and it may be difficult to find a matched comparison group of teachers who would have volunteered for the training if it had been available to them. Particulars of the survey administration will therefore need to be decided in discussion with representatives of local schools or districts.

We will make modifications to our existing PT Impact Survey to ensure it is appropriate for a comparison group design and covers all the relevant research questions. The survey asks teachers about their views on teaching and learning, the frequency with which they use technology in various ways, challenges they face in using technology, access to technology, and the utility of the products they created in Getting Started.

In preparation for the survey, we will discuss with local representatives the feasibility of our design and modify accordingly. We will work to ensure the greatest possible rigor, with respect to the number of teachers in the treatment and comparison groups, the type of comparison group, and the timing of the surveys (before, during, or after our interviews and observations).

Interviews. We will conduct interviews with four types of stakeholders: participating teachers, master teachers (MTs), school leaders, and administrators. In Indaiatuba, we will interview both teachers who participated in last year's case study as well as teachers who took Getting Started more recently. In Goiania, we will interview teachers who have taken both Getting Started and Teach Essentials and those who have only taken Getting Started. This design provides the perspectives of four different groups and will help us to evaluate Getting Started's longer-term impact and how well it bridges to Teach Essentials and potentially other programs, such as ThinkQuest, which is being used in connection with Getting Started in Indaiatuba. Additionally, we will interview master teachers, school leaders, and municipality- or state-level administrators who will provide a broader view of the impact of the course at the system level.

We will use the already-developed suite of interview protocols for this part of the case study, with adaptations as needed. We will ask about experiences with Getting Started, how teachers have applied what they learned, how Getting Started fits with the school environment and other professional development opportunities, and what teachers' future plans are for technology and student-centered pedagogy. In Indaiatuba, some school leaders and administrators have participated in Getting Started for their own professional development; they may be able to provide examples of its utility for themselves as well as its overall impact at the school or in the school system.

Classroom Observations. Getting Started's primary goal is not to impact teachers' work with students, but to provide teachers with an introduction to technology and student-centered learning that may begin to affect their outside-the-classroom work as teachers and may

combine with other trainings to affect their classroom practice. However, we found that in Indaiatuba, teachers are already beginning to take what they have learned to their students. Many PTs were using the computer lab with students for the first time this year. This year's case study provides an opportunity to follow up with those teachers to see what they have been able to do with technology with their students this year with the training they received. Additionally, there are teachers in Goiania who have taken both Getting Started and Teach Essentials. Those who have taken Teach Essentials have received more support to begin to change their classroom practice, and we will conduct some observations of their classrooms. In general, we will use the observations to better understand how the student-centered practices we see in the classroom that might be supported by the Getting Started program.

There is not an existing classroom observation protocol for Getting Started; one will be developed for this case study. Our goal in observations will primarily be to describe teaching style and use of technology in the classroom in a qualitative fashion. There is an existing protocol for observing Getting Started training sessions; if timing of the case studies allows us to observe a training session, we will do so. However, because the focus of the study is on impact, our goal is to see classrooms, rather than trainings.

Analysis Plan

Analysis will be conducted using data from each source for each of the research questions. We will look both at individual cases (Indaiatuba and Goiania) as well as conduct cross-case analysis which will allow us to see how Getting Started's impact differs depending on the context of implementation. Survey analysis will include descriptive statistics and comparisons between the groups of teachers. Depending on the sampling method used to acquire a comparison group, we will conduct statistical analysis of differences between comparison and treatment group teachers. Qualitative analysis of interview and classroom observation data will be conducted primarily by the two SRI researchers traveling to Brazil, with input from LTNet researchers as well as the project supervisor, Vera Michalchik.

Evaluation Activities Timeline

September, 2008. *Task 1. Consult with Intel Education and local staff to select sites.* Work in close collaboration with Intel Education and current evaluation teams to determine which sites in Brazil provide the most promising data sources. Selection may depend on the availability of local researchers for data collection and analysis. In the end, two or more Brazilian sites will be selected for the study.

September-October, 2008. *Task 2. Develop detailed research plan for the case study.* The schedule for program implementation, school sessions, holidays, and other factors will affect the timing of data collection and site visits. To ensure an optimized research schedule, plans will be developed early and revised frequently as needed. Other features of the plan, such as the number of days required for site visits or the nature of the coding and analysis, will be determined early and revised as needed.

October-November, 2008. *Task 3. Survey administrations.* We will work with local support team to conduct data collection of a broad sample of PTs, as feasible, using the impact survey already developed. Analysis of the data will be carried out in consultation with the local support team, as needed.

November, 2008. *Task 4. Conduct site visits.* One to two visits per site will be conducted by SRI staff in collaboration with the local evaluation support team. Ideally, in Indaiatuba we will re-visit some of the schools and teachers that participated in the March 2008 site visit, allowing us to look at how these schools and teachers have changed their practices over the 2008 school year.

November, 2008-January, 2009. *Task 5. Analysis.* Analysis of data will build on findings from earlier work and be discussed with Intel Education staff during regularly scheduled meetings.

January-February, 2009. *Task 6. Reporting.* A comprehensive report will be prepared and delivered as a summative analysis of the impact of the Getting Started program.

Appendix B: Instruments

All instruments were translated to Portuguese.

Intel® Teach Program Getting Started Course Participant Teacher Follow-Up Interview (About 6-12 months following Training)

Introduction: Thank you for taking the time to talk with me today. The purpose of this interview is for us to learn more about how the Intel Getting Started Course has affected your teaching practice. Your answers to these questions will be used in a larger case study of the Getting Started program to identify areas for improving the program. This interview is not used to judge you or your teaching.

We will be asking you some questions about your background, your experience with the Getting Started Course and its value to you in your teaching.

We want to assure you that this project does not evaluate you or your school; we're looking to learn from your experiences to get a better understanding of how the Intel Getting Started Course is working for you, your school, and your country.

BACKGROUND

1. Can you tell me a little about your background as a teacher? (How long? What age levels? Where? Where trained?)
2. What kinds of experiences had you had with technology before you took the Getting Started Course? (Had you taken computer classes? Used computers? How much? For what purposes?)

EXPERIENCE WITH THE GETTING STARTED COURSE

3. When did you take the Getting Started Course? Please describe a little about your experience in the course. (Was the course what you expected?)
4. What did you feel was most interesting or valuable to you in the course? (What aspects of the course did you like the best? What aspects weren't as useful?)

IMPACT ON PARTICIPATING TEACHERS

5. ******Have you been able to apply what you have learned in the course? (What have you applied or used? Where and when? Have you been able to create anything using technology in your school?)
6. ******Has the course had any impact on your teaching? What impact has the course had on your classroom practice? What impact has the course had on your planning and preparation?

Note to evaluator: Ask further questions on:

- a) Technology use in teaching?

- b) Elements of 21st c. learning (teacher facilitation, collaboration, cycles of production, and representing ideas or information using alternative means)?
 - c) Action planning? Did you use your action plan after the course?
7. ****Since completing the training, have you used/created any of the productivity tools introduced in the Getting Started Course? (Note: Ask specifically which tools they have used or created in each of the three technology areas.)**
 8. ****What are some challenges you may have faced when trying to implement in your classroom what you learnt in the Getting Started Course? (Note: Ask specifically about technology, administrative and instructional challenges.)**

CONTEXT

9. ****(In Goiania) Have you taken the Intel Teach Essentials course? If yes...**
 - a) When did you take Teach Essentials? (Before or after Getting Started?)
 - b) Please describe your experience in the Teach Essentials course.
 - c) How well did Getting Started prepare you for Teach Essentials? *(If it did prepare you)* How did taking Getting Started before taking Essentials help you?
10. ****What kinds of changes in instruction or reform efforts are currently underway in your school, as far as you know? How well does the Getting Started course fit with those efforts? (Note to evaluator: Ask further questions on reforms related to technology, pedagogy, or curriculum; and also whether the reform is initiated at the local, regional or country level.)**

LOOKING FORWARD

11. Looking ahead, do you think the skills, approaches, or ideas Getting Started Course can, over time, have more of an impact on your teaching?
12. Based on your experiences, do you think *other* teachers that you know would be interested in taking the Getting Started Course? Why or why not?
13. Is there anything else about the Getting Started Course and your experiences since taking the course that you would like to comment on?

Thank you for taking the time to talk with us today! Your feedback helps the Intel Getting Started Course improve and grow.

Intel® Teach Program Getting Started Course Participant Teacher Follow-Up Interview (About 6-12 months following Training)

Introduction: Thank you for taking the time to talk with me today. The purpose of this interview is for us to learn more about how the Intel Getting Started Course has affected your teaching practice. Your answers to these questions will be used in a larger case study of the Getting Started program to identify areas for improving the program. This interview is not used to judge you or your teaching.

We will be asking you some questions about your background, your experience with the Getting Started Course and its value to you in your teaching.

We want to assure you that this project does not evaluate you or your school; we're looking to learn from your experiences to get a better understanding of how the Intel Getting Started Course is working for you, your school, and your country.

BACKGROUND

1. Can you tell me a little about your background as a teacher? (How long? What age levels? Where? Where trained?)
2. What kinds of experiences had you had with technology before you took the Getting Started Course? (Had you taken computer classes? Used computers? How much? For what purposes?)

EXPERIENCE WITH THE GETTING STARTED COURSE

3. When did you take the Getting Started Course? Please describe a little about your experience in the course. (Was the course what you expected?)
4. What did you feel was most interesting or valuable to you in the course? (What aspects of the course did you like the best? What aspects weren't as useful?)

IMPACT ON PARTICIPATING TEACHERS

5. ****Have you been able to apply what you have learned in the course? (What have you applied or used? Where and when? Have you been able to create anything using technology in your school?)**
6. ****Has the course had any impact on your teaching? What impact has the course had on your classroom practice? What impact has the course had on your planning and preparation?**

Note to evaluator: Ask further questions on:

- a) Technology use in teaching?
- b) Elements of 21st c. learning (teacher facilitation, collaboration, cycles of production, and representing ideas or information using alternative means)?
- c) Action planning? Did you use your action plan after the course?

7. ******Since completing the training, have you used/created any of the productivity tools introduced in the Getting Started Course? *(Note: Ask specifically which tools they have used or created in each of the three technology areas.)*
8. ******What are some challenges you may have faced when trying to implement in your classroom what you learnt in the Getting Started Course? *(Note: Ask specifically about technology, administrative and instructional challenges.)*

CONTEXT

9. ******(In Goiania) Have you taken the Intel Teach Essentials course? If yes...
 - a) When did you take Teach Essentials? (Before or after Getting Started?)
 - b) Please describe your experience in the Teach Essentials course.
 - c) How well did Getting Started prepare you for Teach Essentials? *(If it did prepare you) How did taking Getting Started before taking Essentials help you?*
10. ******What kinds of changes in instruction or reform efforts are currently underway in your school, as far as you know? How well does the Getting Started course fit with those efforts? *(Note to evaluator: Ask further questions on reforms related to technology, pedagogy, or curriculum; and also whether the reform is initiated at the local, regional or country level.)*

LOOKING FORWARD

11. Looking ahead, do you think the skills, approaches, or ideas Getting Started Course can, over time, have more of an impact on your teaching?
12. Based on your experiences, do you think *other* teachers that you know would be interested in taking the Getting Started Course? Why or why not?
13. Is there anything else about the Getting Started Course and your experiences since taking the course that you would like to comment on?

Thank you for taking the time to talk with us today! Your feedback helps the Intel Getting Started Course improve and grow.

Master Teacher Focus Group (After MT's Trainings with PTs)

Introduction: Thank you for taking the time to talk with me today. The purpose of this interview is for us to learn more about how you view the Intel Getting Started Course on the impact you think it will have on teachers in your school. Your answers to these questions will be used in a larger case study of the Getting Started program to identifying areas for improving the program. This interview is not used to judge you, the training you deliver to teachers in your school, or your teaching.

We will be asking you some questions about your background, your experience with the Getting Started Course, and the value you believe it will have to teachers in your school.

We want to assure you that this project does not evaluate you or your school; we're looking to learn from your experiences to get a better understanding of how the Intel Getting Started Course is working for you, your school, and your country. We also want to ask you to keep what you hear today from your colleagues private, so everyone can feel free to express their honest opinions.

BACKGROUND

14. Can we each say our name, how long we've been in the field of education, and what our current roles are in our schools and/or districts?
15. What role have you had in relation to the Getting Started Course?

EXPERIENCE IN CONDUCTING PT TRAININGS

16. Have any of you conducted any trainings yet with teachers? How many so far? When? (*Note to evaluator: Ask further questions on the approximate time frame, e.g., "started one in January that I completed last week."*)
17. How do you feel the training went (or, how has it been going)? Can you say what has gone well? What hasn't gone well?
18. ****Thinking about teachers who have already completed the Getting Started course, have you had a chance to see whether Getting Started has an impact on their classroom practice? Their planning and preparation?**
 - a) If so, what impact has it had on participating teachers use of technology?
 - b) What impact has it had on their use of 21st-century pedagogy?
 - c) Do teachers use their Action Plans after completing the course? If so, how?
 - d) What are the challenges that teachers face in making changes to their classroom practice or their planning and preparation?

IMPACT ON MASTER TEACHERS' OWN CLASSROOM PRACTICE

19. Have any of you been able to apply what you have learned in the Getting Started course in your own teaching? What have you applied or used? Where and when? *Ask further questions about both use of technology and 21st-century pedagogy.*

CONTEXT

20. ****What kinds of changes in instruction or reform efforts are underway in your school, as far as you know? Do you feel the Getting Started course aligns or supports those reform efforts? How so?**
21. ****Have you had any involvement with the Intel Teach Essentials course? What has your involvement been?**
 - a) **[IF APPLICABLE] Do you feel Getting Started is useful preparation for teachers for the Essentials course? Is it adequate preparation? If not, what else do teachers need?**
 - b) **What impact have you seen from the Teach Essentials course?**

LOOKING FORWARD

22. **Looking forward, do you think the skills, approaches, or ideas in the Getting Started Course can, over time have more of an impact on you or the teachers at your school? On teaching or learning generally in your region?**
23. **Based on your experiences, do you think most teachers would be interested in (or benefit from) taking the Getting Started Course? Why or why not?**
24. **Is there anything else about the Getting Started Course and your experiences since taking the course that you would like to comment on?**

Thank you for taking the time to talk with us today! Your feedback helps the Intel Getting Started Course improve and grow.

Getting Started Classroom Observation Protocol For Brazil 2008 Case Study Visits

Background Information

1. Observer name:
2. Date of observation:
3. School:
4. Class observed (grade, subject):
5. Start and end times:
6. Number of students in the room:
 - Girls:
 - Boys:
 - Other student characteristics:
7. Name of teacher:
8. Other adults present:
9. Describe the seating arrangement:

Brief description of the room

Include the layout of the room, how students are seated, and the technology resources available (number of computers, LCD projector, etc.).

Important Topics for Note-taking

- Role of the teacher
- Role of the students
- Teacher-student interactions, for example:
 - How the teacher promotes critical thinking/higher-order thinking
 - How the teacher promotes collaboration
 - How the teacher facilitates student-centered activities
 - How the teacher facilitates hands-on or project-oriented work
 - How the teacher listens, speaks, and gives directions to students
 - How the teacher observes and monitors students
 - How the teacher asks questions
 - How the teacher encourages students
 - How the teacher intervenes with students
 - How the teacher gives feedback to students
- Student-student interactions, for example:
 - Working in groups
 - Inclusive of all kids

- Discussing goals and strategies
 - Consulting one another about problems
 - Showing each other respect
 - Resolving difficulties
- Use of technology
 - Who is using the technology?
 - What types of technology?
 - What is technology used for?
 - Challenges with technology
 - Teachers' comfort level with technology
- Student engagement
- Content of the class

Intel® Teach Program Getting Started Course Participant Teacher Impact Survey

1. Where in your school do you have access to computers? *Please select all the options that apply.*

- No access to computers in my school*
- Classrooms*
- Computer lab*
- Other: please explain _____*

2. How many computers are in your classroom? *Please select the choice that best represents your response.*

- 0 computers*
- 1 computer*
- 2-4 computers*
- 5-7 computers*
- More than 7 computers*

3. In your school, where do you have access to the Internet? *Please select all the options that apply.*

- No access to Internet in my school*
- Classrooms*
- Computer lab*
- Other*

4. How easy or difficult is it to schedule time in the computer lab/media center? *Please select the choice that best represents your response.*

- Very difficult*
- Difficult*
- Easy*
- Very easy*
- Do not know*

5. Please indicate how much you agree or disagree with the following statements on teaching and learning. For each item that follows, select the choice that best represents your position.

| | Strongly disagree | Disagree | No opinion | Agree | Strongly agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Student-centered instruction helps students prepare for the 21st-century workplace. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) The most important goal of instruction is to encourage critical thinking among students. Learning facts is secondary. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Student learning can be promoted through collaboration with others. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Students learn to think critically by reviewing and revising their work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Student learning is best promoted through active exploration of ideas and materials. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Student activities should be connected to long-term goals to build understanding and skills. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Teachers need to build on students' existing strengths to enhance their learning. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) The content of students' learning should be at least partly based on student interest. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. In the past year, has there been a change in how frequently you do each of the following? *For each item, select the choice that best represents your opinion.*

| | I do not do this | I do this less often than I used to | I do this as often as I used to (No change) | I do this more often than I used to | Not Applicable to me |
|---|--------------------------|-------------------------------------|---|-------------------------------------|--------------------------|
| a) Use technology to make your teaching more efficient | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Use the Internet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Use computer technology | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Create technology productivity tools and products (for example, newsletters or grade sheets) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Use 21st-century teaching and learning approaches with students | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Use student-centered instruction | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Promote higher order thinking in students | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Collaborate with other teachers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Use facilitation skills with students | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Create action plans | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. The following statements are about supports and challenges you may have when trying to integrate technology into your teaching in the past year. For each item, select the choice that best represents your position.

| To help me integrate technology into my teaching, | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) I have adequate access to computing resources | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) I have adequate access to the Internet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) I have adequate planning and preparation time | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) I have strong enough computer skills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) I have adequate administrative support | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) I have adequate technical support | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) I have adequate instructional support | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. Think about LAST YEAR. From the options below, please select the one that best describes your level of experience using technology in your teaching LAST YEAR.

- Expert User: I depended on technology daily for many important aspects of my work as a teacher.
- Advanced User: I frequently used technology in my work as a teacher.
- Intermediate User: I used technology in some of my work as a teacher.
- Novice User: I used technology a few times, but not in my work as a teacher.
- Never Used: I never used computer technology.

9. Think about THIS YEAR. From the options below, please select the one that best describes your level of experience using technology in your teaching THIS YEAR.

- Expert User: I depend on technology daily for many important aspects of my work as a teacher.
- Advanced User: I frequently use technology in my work as a teacher.
- Intermediate User: I use technology in some of my work as a teacher.
- Novice User: I have used technology a few times, but not in my work as a teacher.
- Never Use: I never use computer technology.

10. How many years of teaching experience do you have? *Please select the choice that best represents your experience.*

- Less than 3*
- 3 to 9*
- 10 to 20*
- Over 20*

11. What grade level do you teach this year? *Please select all the options that apply.*

12. What subject(s) do you teach this year? *Please select all the options that apply.*

13. Which Intel® training courses have you taken, if any? *Please select all the options that apply.*

- Getting Started*
- Teach Essentials (Face-to-Face)*
- Teach Essentials Online*
- None*
- Other: _____*
- I don't know*

PLEASE COMPLETE THE QUESTIONS BELOW ONLY IF YOU HAVE TAKEN THE INTEL® GETTING STARTED COURSE.

14. When did you *begin* the Getting Started course? *Please select the choice that best represents your experience.*

- | | |
|--|--|
| <input type="checkbox"/> <i>September 2007</i> | <input type="checkbox"/> <i>May 2008</i> |
| <input type="checkbox"/> <i>October 2007</i> | <input type="checkbox"/> <i>June 2008</i> |
| <input type="checkbox"/> <i>December 2007</i> | <input type="checkbox"/> <i>July 2008</i> |
| <input type="checkbox"/> <i>January 2008</i> | <input type="checkbox"/> <i>August 2008</i> |
| <input type="checkbox"/> <i>February 2008</i> | <input type="checkbox"/> <i>September 2008</i> |
| <input type="checkbox"/> <i>March 2008</i> | <input type="checkbox"/> <i>October 2008</i> |
| <input type="checkbox"/> <i>April 2008</i> | <input type="checkbox"/> <i>Other: _____</i> |

15. When did you *complete* the Getting Started course? *Please select the choice that best represents your experience.*

- | | |
|--|--|
| <input type="checkbox"/> <i>September 2007</i> | <input type="checkbox"/> <i>June 2008</i> |
| <input type="checkbox"/> <i>October 2007</i> | <input type="checkbox"/> <i>July 2008</i> |
| <input type="checkbox"/> <i>December 2007</i> | <input type="checkbox"/> <i>August 2008</i> |
| <input type="checkbox"/> <i>January 2008</i> | <input type="checkbox"/> <i>September 2008</i> |
| <input type="checkbox"/> <i>February 2008</i> | <input type="checkbox"/> <i>October 2008</i> |
| <input type="checkbox"/> <i>March 2008</i> | <input type="checkbox"/> <i>I did not complete the course.</i> |
| <input type="checkbox"/> <i>April 2008</i> | <input type="checkbox"/> <i>Other: _____</i> |
| <input type="checkbox"/> <i>May 2008</i> | |

16. Since completing the Getting Started course, have you used/created any of the productivity tools introduced course? *If you did not use a product please check the “Did not Use” box for that product and skip to the next product. For each product that you used, select the choice that best represents your experience.*

A. How useful have the *Word Processing* products been in your classroom?

| | Did not use | Not at all useful | Somewhat useful | Moderately useful | Very useful | Extremely useful |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Assessment handout | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Weekly Lesson Planner | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Newsletter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Diagram | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Certificate | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B. How useful have the *Multimedia* products been in your classroom?

| | Did not use | Not at all useful | Somewhat useful | Moderately useful | Very useful | Extremely useful |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Curriculum Preview | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Student of the Week | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Instructional Lesson | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Classroom Rules and Expectations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Yearbook | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

C. How useful have the *Spreadsheets* products been in your classroom?

| | Did not use | Not at all useful | Somewhat useful | Moderately useful | Very useful | Extremely useful |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Grade Book | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Classroom Inventory | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Seating Chart | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Pictograph | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Roll Book | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |