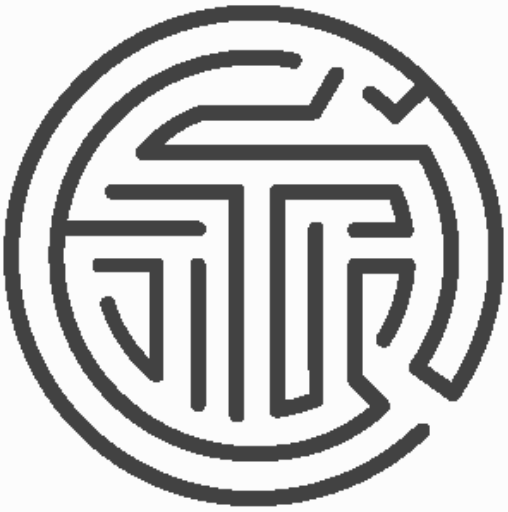
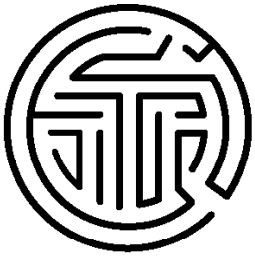


FORMATIVE EVALUATION OF THE INTEL® INNOVATION IN EDUCATION INSTITUTES

SUMMARY REPORT

CENTER FOR CHILDREN & TECHNOLOGY



CCT REPORTS
FEBRUARY 2004

FORMATIVE EVALUATION OF THE INTEL® INNOVATION IN EDUCATION INSTITUTES

SUMMARY REPORT

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INTRODUCTION

During the summer and fall of 2003, Education Development Center's Center for Children and Technology (CCT) undertook a formative evaluation of the Intel Innovation in Education institutes. The institutes are one- to two-and-a-half day district-level trainings intended to introduce professional development providers to the online resources and curriculum available at the Intel Innovation in Education website, and to prepare them to provide trainings to their colleagues focused on these resources.

About the Intel Institutes

The Intel institutes can include a combination of the following resources/tools[1]:

- *Ideas Worth Borrowing* – Adapting ideas from online resources developed by other educators.
- *It's a Wild Ride* - Developing technology-supported projects.
- *Seeing Reason* - Using an online tool for investigating cause-and-effect relationships.
- *Design and Discovery* - Learning about a design and engineering curriculum for middle grades.
- *Emerging Technologies* - Learning about how emerging technologies can be used in the classroom.

The institutes were designed to prepare teacher-trainers to deliver local professional development workshops focused on these resources in their school districts. According to the Intel in Education institute website, an institute is comprised of the following programmatic components:

- Designed for those responsible for providing professional development in effective use of technology to support student learning;
- Delivered in a technology lab where participants experience the same active, hands-on learning that effective teachers provide for their students;
- Comprised of a series of 2 to 3 hour workshops over 1-2 days;
- Led by experienced facilitators with backgrounds in classroom teaching, school leadership and effective technology integration.

Interested schools, districts or regions can sign up to host an institute by filling out an institute proposal on the Intel Innovation in Education Institute website, and agreeing to provide a coordinator who will be responsible for all on-site arrangements including the location and preparation of a facility and the recruitment and registration of participants. This coordinator also works closely with Intel staff to design an institute that is relevant to the needs of the local area.

[1] http://www.intel.com/education/institutes/institute_catalog.htm#

Three institutes were held during summer 2003. In addition to these institutes, Intel staff have continued to conduct workshops at conferences, and one regional technology coordinator has held an institute at her local education association (LEA) as a recruitment strategy for future seminars and more in-depth training around the Intel Innovation in Education resources, specifically Seeing Reason.

About this evaluation

This report presents findings and recommendations based on data collected between July and December 2003 from the three Intel institutes. The primary goal of this formative evaluation was to observe the institutes and closely follow institute participants to investigate how and whether they felt prepared to use these resources with other colleagues and in their classroom as a result of their experience at the training. Specific research objectives for this evaluation were the following:

- *Document the delivery of the institutes and of the locally-led trainings.* What types of teachers (by grade level, content area, level of prior experience with technology) are participating in the institutes, and in the locally-led trainings?
- *Document teachers' responses to training experiences.* Do participating educators perceive themselves to be well-prepared to lead local trainings after participation in an institute, and if not, what further forms of support do they need? How do institute participants plan to make use of what they learn? What do locally-trained teachers learn from the trainings? Do teachers leave the trainings planning to make use of what they learned, and if so what are their plans?
- *Gain an understanding of how teachers are using the tools and resources presented in the workshops in their classrooms.* How do teachers and/or professional developers who attend institutes make use of what they learned – do they use the resources themselves, and/or do they lead further trainings? Do participants in local trainings make use of what they learned from institutes or workshops in their classrooms? To what extent does how teachers use the tools and resources reflect the models of use presented to them in workshops? What logistical or conceptual issues are most prominently shaping teachers' use of these resources and tools?

METHODS

This formative evaluation draws on multiple data sources, including site visits, group interviews, telephone interviews with district administrators, professional developers and participating teachers, end-of-training workshop evaluations developed by Intel Innovation in Education staff, and follow-up surveys conducted via email.

Site visits

Site visits were conducted at three institute trainings during the summer of 2003; two in the Northeast and one in the western United States. In addition, follow-up visits were made to two of the sites to observe further trainings. Key topics explored during site visits were the structure, content and facilitation of the institute trainings; participant involvement with and response to the trainings; and participants' plans for post-institute implementation of the resources presented during the training.

During the site visits, two researchers observed facilitation and participant involvement, conducted interviews and focus groups with participants, and held informal conversations with participants during breaks in the training. Field notes from the site visits were recorded and compiled, and key themes were identified through group review.

Group interviews

Group interviews were conducted with participants at the completion of two of the institutes. One included six participants: a technology coordinator, two elementary teachers and three high school teachers. At a second institute, two sessions were held, one including four participants (two elementary teachers and two technology coordinators), and another with seven university faculty members.

Interviews

Additional interviews were conducted after the completion of the three institutes with all three institute trainers, and with technology coordinators and teacher leaders from each participating LEA/school district. Interview questions investigated participant technology background, perceptions of the quality of each session's facilitation and content, anticipated benefits of and challenges to implementation, and resources perceived as most and least useful or relevant to participants' needs or those of the teachers they worked with.

Analysis of End of Training Evaluations

At the completion of each institute session, the Intel facilitators asked the participants to respond to an online evaluation developed by Intel Innovation in Education staff consisting of three questions: "What is the one thing you will do as a result of attending this session?" "What were the strengths of this session?" and "Your suggestions to improve this session." CCT researchers reviewed and analyzed these responses from the three institutes attended. Eight-four participants

from the three Summer 2003 institutes responded, although response rates for individual questions vary.

Email surveys

In November 2003, email follow-up surveys were sent to the 84 respondents to determine how they were using resources from the Intel education website. The survey asked them to respond to whether or not they had used each resource presented at the institute with their students and/or colleagues. The survey also asked them to describe how they had used the resources and if they hadn't used them, why not. Ten participants responded to these surveys.

SUMMARY OF FINDINGS

This section discusses several key themes that arose in this evaluation: the professional background of institute participants and how they were recruited for participation, participants' responses to the institutes, and reported follow-up on the institute experience, including delivering further training and using institute-featured resources in the classroom. Preliminary discussion of these themes has been presented in memos submitted to Intel in August, October and December 2003. A full report of frequencies from end of training evaluations is included in Appendix A.

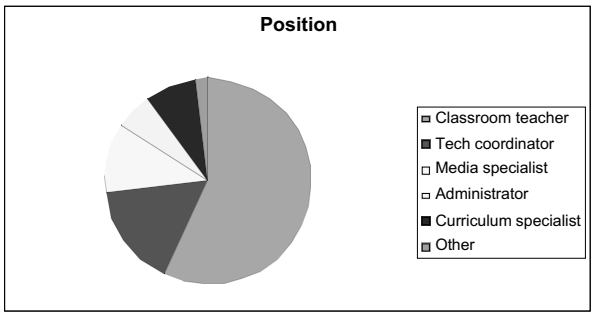
I. Who participated in these institutes?

Profiles

Data collected through the end-of-training evaluation (N=84) demonstrates that a diverse group of educators were present at each institute, from classroom teachers to district technology coordinators to library media specialists (see Figure 1). More than half the participants were classroom teachers (57%), while technology coordinators, media specialists, and curriculum specialists comprised 16 percent, 11 percent and 8 percent, respectively. Administrators were the smallest group (6%).

More than half of these educators work in elementary and/or middle schools (58%), and 12 percent work in high school settings. Ten percent of participants are college professors. The remaining participants work across multiple grade levels or settings (such as technology coordinator working in both a middle and high school in their district). Participants work across a variety of subject areas, most frequently science (20%) and technology (14%). Language arts, math, social studies, performing arts/music and health were each represented by less than 6 percent of the total group. Sixteen percent of respondents reported they were working in an "other" subject area, while 14 percent selected "all."

Figure 1



Recruitment

In interviews, LEA/district coordinators indicated that their primary recruitment strategy for the institutes was to invite educators who they felt had adequate prior experience and access to technology to disseminate the institute resources to colleagues and/or to use them in their own teaching. However, training observations and subsequent interviews indicated that this recruitment strategy was either ineffective or was not applied consistently, which resulted in a very diverse group of participants at each institute. Many participants (including the majority of participants at one institute) were classroom teachers with no prior experience delivering professional development to colleagues, who did not anticipate disseminating these resources after the institute. Additionally, some educators participating in the institutes worked with populations that were not the primary target groups for many of the website resources, including college professors, early elementary grade teachers, and music and art teachers. This diversity was a challenge to the effective delivery of the institutes, which were intended to spark further dissemination of the resources throughout a school district through professional development and classroom implementation of the tools.

One cause of this broad participation in the institutes was local coordinators' limited awareness of the goals and content of the institutes themselves. One local coordinator remarked that while she was familiar with the Intel Teach to the Future program, she was not as familiar with the resources available on the web site, which clearly affected her ability to recruit educators for whom the resources are targeted.

II. How did participants respond to the institutes?

Participants consistently described this training as an exciting introduction to the array of resources available on the Intel site. However, participants were not as consistent in their responses to the scope and structure of the institute itself. Variations in educators' responses to the institute experience were grounded largely in their perceptions of the goals of the experience. Many educators only expected the institute to introduce them to new technology tools and were surprised and pleased to see the quantity and quality of the resources that were freely available to them at the Intel Education website. However, some educators were focused on a goal of becoming prepared to deliver local professional development around these resources, and others were focused on becoming adequately prepared to implement these resources in their own classrooms, in the ways described during the institute. When educators were focused on these more ambitious goals, they often expressed frustration that the two and a half day training had not adequately prepared them to meet these goals.

Educators who expected the institutes to prepare them to deliver trainings related to these resources in their own school districts wanted to leave the training with a greater understanding of the specifics of how to facilitate the sessions with their colleagues. These participants felt that they needed more direction and support in order to become prepared to deliver such training

effectively. Some educators suggested that the Intel facilitators could spend more time specifically discussing issues related to working with teachers, and noted that they had expected the subject to be addressed more formally during the institute.

Educators who expected the institutes to prepare them to use these new resources and tools in their classrooms wanted to leave the training with a product that they had created and could use in their school/classroom. institute participants had been invited to post Action Plans in an online space during the training, which were intended to include reflections on the relevance of the various tools to the educators' current work (as a trainer or classroom teacher) and specific steps they planned to take to follow up on what they had learned during the training. However, some participants explained that they would have preferred to have time during the training to create actual lesson plans, or to think through how to integrate one or more of these resources into an existing lesson. These more concrete forms of take-away products were, according to teachers, a very important link between the training and their future activity in the classroom. One participant commented, "We want to take something home with us. There was no product that we created to take away and share." This reaction was most common among classroom teachers who had some prior experience with similar types of online resources and were eager to find ways to bring these resources back into their classrooms.

A closely related issue for these teachers who wanted to be ready to use these resources when they returned to their classrooms was the importance of time for hands-on exploration. These teachers particularly enjoyed and felt that they learned from this sessions that provided them with time to explore web-based tools and materials on their own. Those workshops that had more hands-on time were consistently cited as the most useful and most effectively targeted to teachers' needs. For example, 25 of the 60 participants who responded to the open-ended evaluation question "What are the strengths of this session?" after the Seeing Reason session described the hands-on nature of the experience. One teacher commented about both the Seeing Reason and the Ideas Worth Borrowing sessions: "I would like to have had more hands on activity – more exploration time. [For example] when we got to go into the exemplary lessons. Then we could really get into it and could link into it and see the application to us individually. That is why we liked the mapping [Seeing Reason] because we were doing it. We need more of that." Another participant said, "We should be following along on the computer and doing. We need to be doing not just talking about doing. More hands-on is necessary in this training. There was so much build up about Seeing Reason and we would like to take skills with us – and a product with us."

Reflections on Specific Sessions and Tools

Seeing Reason. Participants enjoyed this workshop because they felt they had adequate time to explore the tool and to brainstorm with one another about possible uses in the classroom. Teachers found the tool technically simple to learn and use. However, participants found difficult the process of generating appropriate guiding questions for cause-and-effect lessons or activities. A primary challenge was distinguishing cause-and-effect mapping from concept mapping, which

many participants were already familiar with. One teacher team, for example, remarked that cause and effect was a relevant concept for them to be covering with their fourth grade students. However, after some exploration they decided that, since they were having trouble grasping the very specific relationships the tool is designed to organize, this tool would be too difficult for their students to use.

Teachers also struggled with understanding the relationship between a large investigative question and a sub-question that would be appropriate for cause-and-effect mapping. One coordinator, who felt she spoke for several teachers, remarked that many of them felt particularly confused when trying to come up with questions for the Malaria/DDT investigation, which was used as a sample topic during the *Seeing Reason* workshop. Participants reported that they wanted to spend more time as a whole group brainstorming and modeling good questioning. They also wanted more direct feedback from the facilitator on what constitutes a "good question." One coordinator remarked that this particular workshop felt rushed. She wanted more time to work with the tool with her colleagues.

Emerging Technologies. The *Emerging Technologies* session met with mixed responses, and variation in teacher reactions was largely based in their prior level of experience with technology. Many participants, particularly those with less of a technology background, were least attentive during this session, and explained that they were unclear how these resources could apply to their teaching. These teachers were more interested in Blogs than in other applications discussed during this session, but reported that they were still confused about how to set up and use a Blog after the conclusion of the session. Participants with more extensive technology backgrounds were more engaged with this session, although some expressed an interest in learning about even more advanced or leading edge educational technology.

III. How do participants follow up on the institute experience?

Plans for follow up

At the completion of each session, as part of the online evaluations they were asked to complete, participants responded to the open-ended question, "What is the one thing you will do as a result of attending this session?" The following presents an analysis of the responses, broken down by session (N=84, Ns for individual items vary). See Figures 2-6 for representations of these data.

- *Ideas Worth Borrowing and Odyssey (n=59).* Nineteen participants reported that they would continue to browse and explore this resource. Thirteen said that they would share this resource with colleagues, while eleven said that they would use or adapt the lessons found within this resource in their classrooms. Five planned to submit a story or project to Odyssey. Three described planning to use a specific resource pulled from a lesson in Ideas Worth Borrowing, and eight chose "other."

- *It's a Wild Ride (n=63)*. Almost half (30) of the respondents reported that they would use or adapt the resources presented in this session in their classroom, while 17 planned to share this resource with colleagues. Five participants said that as a result of this session they planned to work collaboratively with their colleagues or learn more about the possibilities of group work with their colleagues.

- *Seeing Reason (n=64)*. Most participants (50) reported that they would use or adapt the resources presented in this session in their classroom, while nine said they planned to share it with colleagues. Four said that they would compare it to Inspiration software and decide which one to use.

- *Emerging Technologies (n=49)*. Twenty participants said that as a result of this session they planned to acquire or find out more about handhelds, while 13 planned to set up a weblog. Eight participants felt that this session had increased their awareness of and confidence in using technology tools. Four plan on syndicating resources from the IIIE website to their school and/or district website, while three reported that they will explore the website further and then consider doing this. Just one respondent planned to share resources from this session with his or her colleagues.

- *Design and Discovery (n=62)*. Twenty-three participants reported that they would use or adapt these resources in their classroom, while 21 planned to share these resources with their colleagues. Sixteen said they would continue to explore these resources, and two reported "other" use.

With the exception of *Ideas Worth Borrowing and Odyssey*, respondents were more likely to plan to use these resources in their own classrooms than to share them with colleagues.

Figure 2: ***Ideas worth borrowing and Odyssey***

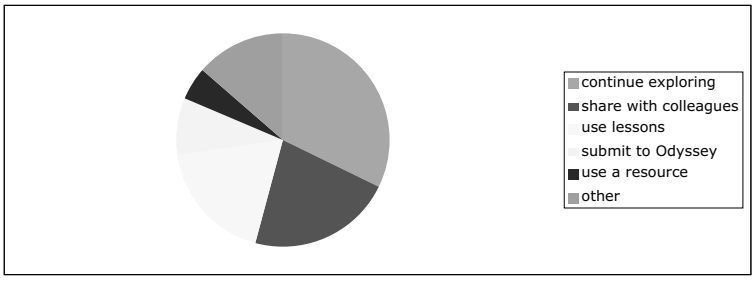


Figure 3: ***It's a Wild Ride***

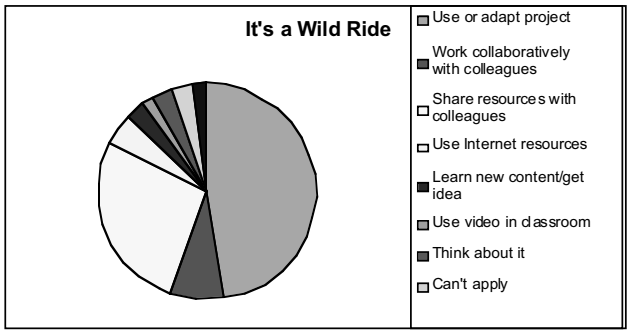


Figure 4: ***Seeing Reason***

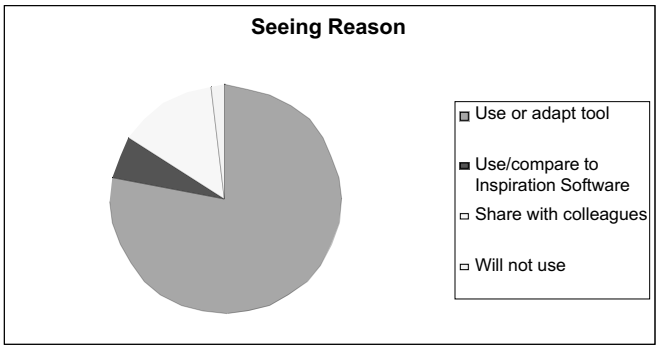


Figure 5: ***Emerging Technologies***

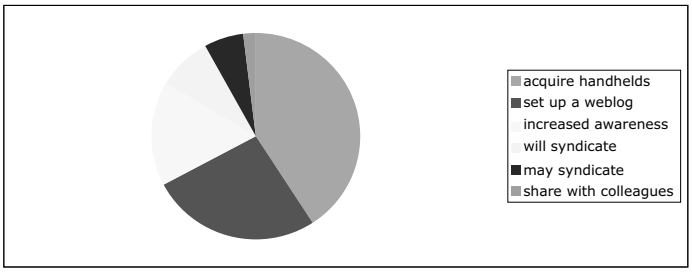
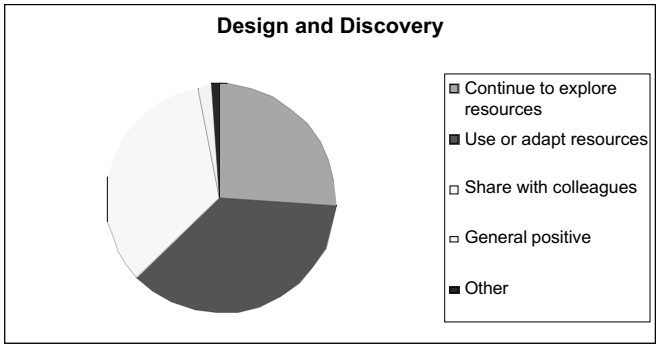


Figure 6: ***Design and Discovery***



Follow-up trainings

Ten of twelve institute participants and/or coordinators who responded to contacts for follow-up interviews have delivered or are planning to deliver follow-up trainings or workshops. These trainings vary widely in their level of formality, ranging from workshops similar in scope and structure to institute workshops, to informal in-classroom discussions with colleagues.

Some follow-up training is being delivered by the original LEA/district coordinators. For example, one of the LEA/district coordinators has offered several follow-up trainings related to Intel resources including *Seeing Reason*, Ideas Worth Borrowing, and It's A Wild Ride. One such training did occur in November 2003, while others were cancelled due to lack of registrants. Two more were scheduled for spring 2004. Another institute host is also planning to offer trainings in spring or summer 2004.

Some teacher leaders and district-level coordinators who participated in the institutes have also conducted individual workshops. Each of these educators described their efforts as resource-sharing sessions, intended to raise teachers' awareness of the resources available to them online. For

example, one local technology coordinator has provided *It's a Wild Ride* and *Design and Discovery* workshops in her district. The workshops were well attended, and participating teachers from one school are now planning an after-school science program using the *Design and Discovery* curriculum. In examples of more informal forms of dissemination, another technology coordinator presented the *It's a Wild Ride* session to a group of home-schooling parents as well as a teachers' conference in his district. One teacher leader is planning to present *Design and Discovery* and an overview of Unit and Project Plans in a 1/2 hour session during a day-long event introducing a new virtual space developed by the district. A university faculty member participant provided *Seeing Reason* training to three colleagues, sharing his own experience using the tool in his own classroom. Another university faculty member is offering *Seeing Reason* trainings to teachers in the local school district.

Classroom implementation of resources

It is difficult to determine the scope or frequency of actual use of the Intel resources after the completion of the institutes. Because there was no systematic way of tracking the participants after they returned to their districts, the only available data are those collected from email surveys and follow-up interviews with participants. In total, data was collected from six teachers and five technology coordinators/professional developers with regard to their use of the resources. This group includes two of the three district/LEA institute coordinators. This limited data suggests that teachers of upper elementary and middle school grades, and technology coordinators are responsible for the majority of in-classroom use of these resources following institutes. *Seeing Reason* and *It's a Wild Ride* are the resources being implemented most frequently.

The resources and tools reviewed at the institutes vary widely in the level of technological proficiency, the amount of time, and level of expertise in classroom management, and the complexity of the curricular context that they would require of a teacher. For example, a classroom teacher could quite easily find a specific activity within a unit included in Ideas Worth Borrowing that might fit smoothly into a lesson she had already planned to teach. This was, in fact, often teachers' response to this resource, as they easily found lessons that they wanted try out in their classrooms. They often described the lessons they selected as being variations on something they were already doing, or as examples of new ways to teach key content areas while incorporating innovative uses of technology. Several participants said that they really liked seeing this resource because it showed them "what can be done – what the possibilities are."

On the other end of the spectrum, a teacher who commits to implementing *Design and Discovery* would be taking on an extensive, hands-on, student-driven curriculum that would require extensive preparation and significant adaptation of pre-existing science or engineering curriculum (or, alternatively, the creation of an after-school club or program). Similarly, taking a project-based approach to using *Seeing Reason* would require a teacher making a substantial investment in either introducing cause and effect into his or her curriculum, or modifying how he or she teaches the concept. It should be noted, however, that teachers could also use either of these resources in

much more limited ways, such as using a single exercise from *Design and Discovery* or using *Seeing Reason* for a brief concept mapping activity.

Although the data available on classroom implementation is limited, this evaluation suggests that when substantial classroom-level follow up to these institutes is occurring, it is being done by teachers who have the prior knowledge of and experience with project-based and (with the exception of *Design and Discovery*) technology-rich curriculum that allows them to determine on their own how to appropriate parts or all of these tools and associated activities and fit them into their existing curriculum. This is suggested by the fact that, among those teachers who did report implementing institute resources with their students, *Design and Discovery* and *Seeing Reason*, two resources that are not easily used without considerable modification of existing curriculum or activities, were mentioned most often.

In contrast, teachers who attended the institute seeking to raise their general knowledge of educational resources available online but who are less focused on learning how to use any of the resources in the immediate future do not seem to be likely to follow up on their institute experience when they return to their classrooms. Although these teachers were often able to brainstorm many possible ways to use Intel tools and resources in the classroom, they encountered multiple challenges to doing so, and had limited opportunities during the institute to anticipate and plan for managing those challenges.

Institute participants did provide feedback on specific obstacles to using these tools and resources in the classroom. Some teachers indicated, both during and after institutes, that they did not have enough, or robust enough, access to computers and the Internet to use these resources effectively with their students. Teachers from relatively technology-rich districts raised this issue most frequently, which suggests that they were considering particularly technology-intensive uses of the resources, such as having a full class of students working with *Seeing Reason*.

Additionally, both classroom teachers and district administrators felt that curricular constraints and accountability pressures are making it more difficult for them to find support for using innovative resources such as these in their teaching. Teachers often have limited opportunities to add to or modify their curricula, making it difficult to integrate the more project-oriented resources into their classrooms (such as *Design and Discovery* or project-oriented use of *Seeing Reason*).

Similarly, district administrators repeatedly explained that a clear articulation of connections between those resources and local core curriculum and standards was very important and would help them to justify supporting professional development around these resources. These administrators also questioned the types of assessments associated with some of the tools, and expressed an interest in more rigorous assessments closely aligned with some set of broadly applicable standards.

DISCUSSION

Participants overwhelmingly were pleased with the resources they were exposed to during the institutes. Some participants have delivered further trainings related to these resources to their colleagues, and some are making significant efforts to repeat these trainings over time. All participants reported that they planned to revisit at least some of the online tools they were exposed to during the training in the future. Many developed concrete plans to use some of the tools with their students in their classrooms, and there is evidence that at least some have moved forward with those plans and are now using Intel resources in their teaching. Classroom teachers in core content areas in grades 4-12 were uniformly impressed by and excited about the scope and depth of the resources and tools available to them at the Intel website. They found the tools to be of high quality, were appreciative that they are free, and reported that they recognized them as potentially valuable for a range of classroom uses.

This evaluation clearly demonstrates that these institutes were primarily, though not exclusively, viewed as professional development opportunities for teachers interested in learning more about online resources they could use in their own classrooms. Some educators did attend these institutes with a goal of delivering similar trainings in their own districts, and some have, in fact, disseminated these resources through a variety of formal and informal training mechanisms to other educators. However, the data presented here suggest that most institute participants did not walk away from the experience expecting to deliver further training to others around these resources.

This limited emphasis among participants on delivering further training is rooted in two distinct issues. First, some participants were never aware that training future trainings and supporting resource dissemination was a goal of the institutes. Second, some participants who were planning to deliver further trainings did not feel that they were prepared to support other teachers in learning to use these tools, particularly in the kind of project-based, student-driven ways described during the institutes.

For many teachers, the primary goal of the institute was to learn about new resources that could be useful to them in their teaching. During the institutes, these teachers easily envisioned ways to use many of the featured tools and resources in their teaching. Examples generated during institutes frequently involved adapting or appropriating parts of larger units (as in Ideas Worth Borrowing) or curricula (as in *Design and Discovery*) to fit into existing curricular units or to support or enhance familiar classroom activities. The limited data available suggests that actual classroom implementation is more challenging, and that many teachers do not follow up on their initial action plans for two reasons. First, they encounter a number of logistical obstacles and resource constraints when they return to their schools that make implementation difficult, such as limited access to computer labs. Second, teachers without substantial prior experience with either technology integration or project-based learning have difficulty determining how to weave the Intel resources into their existing curriculum and current instructional practices.

This evaluation suggests that the teachers who are most likely to follow up on an institute when

they return to the classroom are those who have enough experience and expertise, both with technology and in their instructional strategies, to locate the points of connection between these resources and their own immediate needs and curricular priorities. These teachers are able to move through the process of adapting a resource such as *Seeing Reason* to fit the curricular framework, instructional style, and time constraints within which he or she works. For many teachers, this process requires more experience and willingness to experiment than they possess, and the limited timeframe of the institute training format makes it difficult to support these teachers in acquiring the knowledge they need to become successful classroom implementers following the institute experience.

RECOMMENDATIONS

Recommendations based on this formative evaluation are proposed below:

- *Institute goals*. Participants need to come to institutes with a clear understanding of the goals of the experience. The definition of these goals depends on the relative emphasis Intel chooses to place on using these institutes do the following: train future trainers; provide an overview of available resources to a wide audience of educators; or provide initial training in use of the tools and resources to those classroom teachers who are most likely to make use of the tools.

- *Institute audience*. The best audience for these institutes will inevitably vary somewhat across locations and will depend on which of these goals the institutes are meant to achieve. This evaluation suggests that the appropriate audience also varies from workshop to workshop, with teachers' prior knowledge of technology, prior experience integrating technology in the classroom, and prior experience leading project-based curriculum all influencing their readiness for various workshops. Intel will need to give further guidance to local coordinators regarding optimal recruiting strategies in order to maximize the efficiency and impact of the institutes.

- *Support for planning future training and/or planning implementation*. Whether they were interested in delivering future trainings or using the tools in their own classrooms, educators felt they needed more time and support within the training setting to work through concrete plans, create concrete products, receive follow-up support after the conclusion of the institute.

- *Support for follow-up training*. Currently, the institutes provide participants with an introduction to the variety of available Intel resources, and much of the reported follow-up training mirrors the overview participants initially were given. If participants are expected to provide more in-depth training around the resources, they will need more support in the areas of facilitation and workshop design.

- *Selection of units appropriate for institute structure*. If the institutes are going to remain in a two-day format, units that are most suited to this structure, such as Ideas Worth Borrowing and *Emerging Technologies* may prove more successful than those that require more comprehensive training such as *Seeing Reason* and *It's a Wild Ride*.

- *Time and place for institutes*. Institutes may be best suited to an environment, such as a conference or a district technology fair event, where participants expect overview-type presentations. In addition, the institutes could be used as recruitment for seminars for educators who would like more in-depth training around the resources.