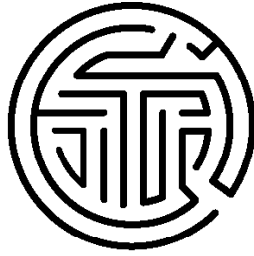




**INTEL® INNOVATION
IN EDUCATION
WEB SITE**

EVALUATION REPORT



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IN EDUCATION
WEB SITE**

EVALUATION REPORT

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INTRODUCTION

The Intel Innovation in Education web site aims to provide educational resources to teachers, professional development specialists and instructional technologists. Although these resources pertain to a wide array of disciplines and grade levels, the online tools seek to emphasize technology integration in science and math in middle and high school classrooms. In addition to seeking to build a community of users among K-12 practitioners generally, the online materials also support Intel Teach to the Future, Intel Computer Clubhouse Network and other Intel-sponsored education programs.

To understand better the reach and effectiveness of the Innovation in Education web site and educators' expectations and use of individual resources available at the site, Intel commissioned the Education Development Center's Center for Children and Technology (CCT) to conduct an evaluation. This report reviews findings of the evaluation from October 2000 through August 2002.

Methods

The overarching goal of this evaluation is to understand the fit between the Intel Innovation in Education online resources and the needs and expectations of its users. We focused on two of the Intel Education staff's three objectives for the site: 1) Extending the reach and impact of Intel Innovation in Education programs, and 2) developing and re-purposing content and services to support effective methods for teaching and learning with technologies.

To assess how well the site meets these objectives, and to help guide improvements to the site, we focused on a number of evaluation questions, which are listed below. Because the site experienced content updates, reorganization and a redesign during the evaluation, we posed these questions over time and at distinct points within the site's refinement process. We asked the following:

- Who is finding specific resources at the site, why are they seeking these resources out, and how do they respond to them? Are specific resources being explored at the site by the audiences they are intended for? If other audiences are exploring these resources, who are they and what are their interests in the materials?
- Do educators who visit the site use specific site resources for use with students and/or colleagues, and do they find them useful in their teaching? Once educators review materials at the site, how do they use them in their teaching? How do they perceive these materials to be useful to them, and what factors (including site design issues, resource content issues, and classroom-level logistical issues) are impeding more extensive use of these resources?
- Are participants in other Innovation in Education programs making use of the resources at the site? If so, how do they report using the resources, and how useful do they feel the resources have been in their teaching?
- Do educators responsible for technology-related professional development at the district level

find resources from the site to be worthwhile additions to their work with teachers, if so, which ones? Do professional developers who are invited to explore these resources find them to be potentially useful tools for meeting their district's goals for improving technology use in their district? Over time, do these professional developers incorporate these resources into their professional development work?

Instrumentation

To begin answering these questions, CCT researchers used multiple data collection instruments during a number of discrete time periods. The findings in this report are based on a series of face-to-face and telephone interviews and Web-based surveys.¹

Scope

At the Intel Education staff's request, we focused our evaluation on the general appeal that the Intel Innovation in Education site has to educators, and targeted the sections of the site that fall under the heading, "Learning Projects." They are:

- *It's a Wild Ride* an interdisciplinary, technology-rich project that is a model for professional development;
- *Seeing Reason*, a visual mapping tool and online workspace that supports students' investigations of cause and effect relationships and complex systems;
- *Units Projects and Plans*, an electronic storehouse of unit plans and individual lessons; and
- *An Innovation Odyssey*, a series of articles each of which features technology integration.

We have not collected data on the remaining site sections under the headings "Professional Development," "Science and Math," "Learning Anytime" and "Learning about Technology."

¹See Appendix 1 for a detailed description of the instruments we used and the data they produced.

TOP-LEVEL FINDINGS

Who is finding specific resources at the site?

Summary: The clear majority of visitors (approximately 70%) coming to the site were classroom practitioners, equally representing elementary, middle and high school levels. Though teachers from a wide range of disciplines were visiting the site, general education and science were most commonly represented. In addition to teachers, school and district technology coordinators and professional development specialists were visiting the site.

Detail: In order to understand how educators make use of the online resources available at the Intel Innovation in Education web site, our evaluation explored who came to the site and who requested the It's a Wild Ride video.

Our initial data collection efforts found that a wide variety of people connected to education visited the site, including teachers, students, technology coordinators, professional development specialists, parents, school administrators and library media specialists. A majority of the Q2 '02 survey respondents and NCCE and NECC interview participants were classroom teachers.

Although small numbers of administrators, parents and students reported visiting the site, our subsequent data collection instruments targeted educators more directly tied to classroom practice, both practitioners and curriculum and technology support specialists. In the follow-up to the Q2 '02 survey and the Q3 survey we found that the overwhelming majority of respondents are classroom teachers (approximately 70%). Of these classroom teacher respondents, elementary, middle and high school teachers comprise nearly a third each of the respondent pool with a small percentage of college or university level comprising the rest. School and district technology coordinators comprise roughly one-fifth of the respondents and curriculum specialists approximately 5%.

In our surveys, classroom practitioners reported that they work in a wide range of disciplines: Technology, Industrial Arts and Engineering, Science, Language Arts, Math, Social Studies, Health, and Art. Respondents reported general education (approximately one-quarter) and science (approximately one-fifth) as the most common.

How do educators become aware of the resources and why do they seek them out?

Summary: Most respondents learned about the online resources site from other educators. Classroom teachers used the online tools with their students and for their own professional development. Curriculum specialists, technology coordinators and Intel Teach to the Future Master Teachers came to the site looking for materials that they could share with colleagues.

Detail: In addition to assessing who visited the online materials, we explored how educators became aware of the resources and we identified what interest they had in finding them. We grouped these findings into two categories: awareness and interest.

Awareness

- **General Site.** Most respondents indicated that they learned about the Web site from other educators, rather than from another web site; from a search engine; during a professional development workshop; through a magazine or newsletter; at a conference; from a Web advertising banner; or from an alternate source. One important exception to this, however, is the Seeing Reason tool. A number of respondents to the Q2 '02 follow-up survey indicated that they became aware of the tool after seeing it referenced in our survey²
- **It's a Wild Ride.** The majority of IAWR video recipients reported that they were aware that affiliate web site materials existed. However, a significant minority (37%) reported that they were not aware of them.
- **Seeing Reason.** Half of the respondents reported that they became aware of the Seeing Reason section while browsing the general Innovation in Education web site.

Interest

Regarding interest in the online materials, although commonalities ran throughout the respondents' answers, we found that educators' interests were specific to the tool and to their role within their schools.

- **Classroom Teachers.** Classroom teachers reported that their interest in exploring concrete tools like the It's a Wild Ride video and Seeing Reason was to obtain materials for students in their classrooms and to share with colleagues. In contrast, their interest in the Intel Innovation in Education web site as a whole was for their own professional development. Furthermore, most IAWR video respondents have used, or plan to use, the materials to get ideas on how to integrate technology into their curriculum or to implement new assessment strategies.
- **Professional Developers.** Educators who had professional development responsibilities, such as curriculum specialists and Intel Teach to the Future Master Teachers, reported that their primary interest in the resources was to find materials to share with colleagues.

What positive perceptions do teachers have of the resources?

Summary: Once educators had an opportunity to explore the online materials, the majority of them had a favorable impression of specific tools, such as IAWR and Seeing Reason, as well as resources tied to lesson and unit plans. Teachers, curriculum specialists and technology coordinators identified connections between the online materials and their own day-to-day responsibilities — whether in individual classrooms or in support of teachers — and anticipated using the resources in the future.

Detail: Because many of the Intel Innovation in Education resources are relatively new and educators' awareness of them is just starting to emerge, few educators have had the opportunity to use the materials. Consequently, much of our research to date has been an exploration of how teachers

² We discuss the implications of this in the "Future Research and REcommendations" section.

perceive the resources and whether they intend to integrate them into their classroom practice. We grouped these perceptions of value into three general categories: site design and ease of use, quality of content and connection to existing curriculum.

Site Design and Ease of Use

- *Overall Site.* Respondents reported that they were impressed with the overall look of the Web site and planned to recommend it to their colleagues. They said that it was clear to them that the site was intended for educators, both in the classroom and working at the district level. Visitors reported that they liked the quick loading of individual pages and thought that the site had an excellent mix of text and visual elements. Respondents also reported that they liked having the ability to bookmark deep links rather than being forced to bookmark at a higher level.
- *It's a Wild Ride.* Respondents reported that they liked the way the IAWR materials were organized into six clear sections. They said that they were able to quickly access the materials that were relevant to them and that they understood that the site was not for students but teachers and teacher developers. They did not express any disappointment in not finding a "Students" button or content directed at students; they were satisfied in knowing that this was a place to gather ideas, learn about new resources and explore professional development models.
- *Seeing Reason.* Though respondents were familiar with Inspiration, a more elaborate application that supports causal mapping, they said that Seeing Reason offered two important advantages: whereas Inspiration is cost-prohibitive for some districts Seeing Reason is free; and Seeing Reason allows students and teachers to retrieve their work from any location because it is web-based. Teachers reported that this would allow students to share their work with parents, strengthening the home-school connection. Teachers also reported that they felt that Inspiration got "very complicated and confusing very quickly."
- *Unit and Project Plans.* Respondents reported that they liked the clear organization of the lesson plans and valued how each one delineated the materials that were required, its educational objective and the time it would take to complete.

Quality of Content

- *Overall Site.* The majority of informants reported that they believe the site offers strong content. For those educators that had seen the site before the evaluation began, they reported that they were impressed with its overall improvement in the site and planned to visit the site more regularly and/or recommend it to colleagues.
- *It's a Wild Ride.* Almost all the Q3 survey respondents thought that It's a Wild Ride was useful as a classroom resource and as a professional development resource. Interview respondents reported that the collaborative nature of the IAWR section appealed to them. They further reported that the section was well organized, making it easy for them to find the most relevant

materials. The presentation focus on the teachers' point of view set this resource apart from other online lesson resources and made it more appealing as a professional development tool.

- *Seeing Reason.* Almost all Q3 survey respondents reported that they thought that Seeing Reason was useful as a classroom resource and as a professional development resource. Interview respondents reported that their less tech-savvy colleagues, who were looking for ways to integrate technology into their classrooms without “going to the computer lab,” would be drawn to the Seeing Reason tool. They also said that novice computer users would be able to learn how to use Seeing Reason because it is “straightforward” and “easy to use.” Also, respondents reported that their students were less familiar with deductive reasoning and said that they thought this tool could help develop problem-solving skills. They said that the current climate of standardized testing has de-emphasized higher order thinking among their students – something they would like to change.
- *Unit and Project Plans.* A strong majority of Q3 survey respondents reported that they thought that Exemplary Project Plans was useful as a classroom resource and as professional development resource. Interview respondents reported that the assessment rubrics gave legitimacy to the lessons, which would increase the likelihood that they would share them with colleagues.

Connection to Existing Curriculum

- *It's a Wild Ride.* Many respondents indicated that they would integrate parts of the unit in their classrooms and share the project with their colleagues. However, one respondent – a technology coordinator – described in an interview how she shared these resources with a computer teacher in her school. This teacher based an entire unit on the IAWR materials.
- *Seeing Reason.* Interview respondents reported that Seeing Reason would be a good tool to support problem-solving activities in their classrooms and said they had specific, immediate ideas about how they and/or their colleagues could integrate the tool into their classroom practice.
- *Unit and Project Plans.* Respondents reported that the lesson plan database offered specific resources relevant to their practice. Many interview respondents reported that they had no difficulty finding specific resources relevant to their practice. For example, the Kindergarten teachers looked for math lessons that pertained to patterns and found with eight possibilities. They were pleased with that response as they said they did not feel inundated with information yet had enough material from which to choose.

What factors may impede extensive use of the resources?

Summary: Although, overall, classroom teachers, technology coordinators and curriculum specialists shared a favorable impression of the online materials, some respondents identified areas for improvement. While many of these suggestions grew out of personal preferences and had little to do with the substance or quality of the resources, several requests pertained to the depth of the resources. Most prominently, teachers said they wanted additional Seeing Reason examples and a

greater number of lesson plans tied to national standards.

Detail: In addition to exploring educators' positive perceptions of the Intel Innovation in Education resources, we gathered data on a number of factors that may deter educators from making use of the online resources. Although the site is constantly changing — a significant site redesign in spring 2002 addressed some of the issues — respondents identified several barriers to full use and implementation of the materials. We grouped these issues into three general categories: site design and ease of use, quality of content and classroom-level logistics.

Site Design and Ease of Use

- *Overall Site.* Some respondents reported that they had difficulty navigating through the site. The two sets of navigation — one for the Intel.com site at the top of the page, the other, on the left-hand side of the page for Innovation in Education — was not clear. Some visitors had difficulty finding their way back to the home page once they were several pages deep into the site. Several educators requested additional functionality and features, such as Email a friend, printer-friendly and/or PDF versions of the content and a more open-ended and flexible search engine for the Innovation in Education site as a whole.
- *It's a Wild Ride.* Several respondents reported that there was too much text in the IAWR section of the site. They said that they want to be able to get to the information that is relevant to teachers quickly. For instance, they would like to see a pullout box toward the top of the page, indicating what the relevant standards are and what subject areas and grade levels were tied to the information.
- *Seeing Reason.* According to some respondents, Inspiration has three advantages over Seeing Reason: 1) the ability to copy a map into a Power Point presentation or other applications; 2) the ability to make an outline from a map; and 3) the ability to import pictures. Though all of the teachers said the first option was important, they said the second two were merely "bells and whistles."
- *An Innovation Odyssey.* Respondents reported that the organization of An Innovation Odyssey was unclear. They said they wanted the area to be organized by content area, grade and date, not by day. Additionally, they reported that the stories have such a broad range that there would be little reason to check the site each day. Teachers wanted "at-a-glance convenience," knowing the relevant grade(s), subject area(s) and links to relevant state and national standards as well as the technology involved. They also reported that they wanted to know what the criteria are for selecting stories. They commonly asked, "Who gets to submit their story and why?"
- *Unit and Project Plans.* Some respondents who were less experienced in looking for web-based curriculum materials reported that they had difficulty finding specific lesson plans.

Quality of Content

- *Seeing Reason.* Respondents reported that there is “a long way to go” to get teachers to integrate problem solving into their pedagogy. They said that it would take a great deal of staff development before many teachers will be able to use a tool like Seeing Reason and they were uncertain whether the level of training required was likely to occur within their districts on a broad scale. Similarly, respondents who identified their students as “lower-level” said that they could not see using the tool because it is “too advanced” but they said that they knew others within their building who could integrate the tool into their classroom practice. Respondents reported that they would like to see a library of teacher-created activities that feature the use of the tool and maps that students have made in a wide range of disciplines and grade levels.
- *Unit and Project Plans.* Many classroom teachers reported that they would not use one of these lessons from start to finish but would pick out parts to integrate into their curriculum. Therefore, they said that they want a larger number of lessons from which to choose. Specifically, they said that they wanted more lessons on the high school level, more in K-2 and more that focused on disciplines other than science and math. Respondents also requested that the lesson plans in the database be aligned to national standards. Because there is so much variation from one state to the next, they said that they would rather have the national set of objectives correlated with each lesson and then each teacher could determine how it did or did not fit into a specific curriculum. And regarding the quality of the exemplary lesson plans, respondents said that it was not clear that (if?) the lessons grew out of the Intel Teach to the Future program, or how the lesson plans were developed and by whom and by what process they were chosen for listing.

Classroom-level Logistics

- *It's a Wild Ride.* A respondent reported that she was concerned that this section is designed for students with access to many resources, and that the home component made it unfeasible for low-income students to participate. Also, a teacher reported that she did not have enough physical space to implement the project in the way it was presented in the video.
- *Seeing Reason.* Respondents reported that the only barriers to using the tool were not unique to it. Because it is web-based, a reliable connection to the server is necessary but respondents said this was true of all Internet-related tools and would not deter them from using this particular tool.

Are practitioners using the resources in their teaching?

Summary: Although the majority of educators included in our studies had not used the online resources at the site in the 2001-02 school year, a significant minority of classroom teachers had used Unit and Project Plans and/or Web materials in conjunction with the IAWR video. Significantly, three-fourths of practitioners plan to use Seeing Reason, It's a Wild Ride or An Innovation Odyssey materials in the 2002-03 school year.

Detail: Despite the technical barriers of the company's server arrangement, which made it impossible to track repeat user traffic data — one indicator that visitors are making frequent use of the materials, both our surveys and interview protocols asked respondents about their use, anticipated use, and anticipated manner of use of these resources.

- *General Site.* Approximately one-quarter of survey respondents were repeat visitors to the Intel Innovation in Education Web site. A considerable proportion of some categories of visitors reported having used materials from this site previously: One third of technology coordinators and professional development specialists and more than 20% of classroom teachers reported using materials from the Web site occasionally or often.
- *It's a Wild Ride.* Just under half of the video recipient respondents who indicated that they were aware of the affiliated online materials had used them in conjunction with the video. Among the Q3 survey respondents, the majority had not used these materials in the 2001-2002 year though a significant minority reported using them at least several times in the year. For the 2002-03 school year, a majority of respondents reported that they plan to use the materials at least once as a special project. More than one third plan to use these materials several times in the year, and more than 10% of respondents plan to use them monthly and weekly.
- *Seeing Reason.* Though the majority of Seeing Reason Q3 survey respondents reported that they had not used the tool in the 2001-02 school year, a significant minority reported using the tool and related materials at least several times in the year. For the 2002-03 school year, three-fourths of the respondents reported that they plan to use Seeing Reason at least once as a special project. Of these educators, more than one third plan to use these materials several times in the school year, more than 20% plan to use Seeing Reason monthly and a small group (more than 10%) plan to use it weekly.
- *Unit and Project Plans.* Nearly half of the Q3 survey respondents reported using the materials from Exemplary Project Plans several times throughout the 2001-02 school year. Of these respondents, 20% were using these project plans monthly or weekly and several respondents reported using the project plans daily. For the 2002-03 school year, the majority of respondents (73%) reported that they plan to use the project plans several times during the next year, at least, and a third plan to use these materials in their classrooms monthly or weekly.
- *An Innovation Odyssey.* More than one quarter of Q3 respondents reported that they had used these materials several times in the 2001-2002 year. For the 2002-03 school year, the majority of respondents (80%) reported that they plan to use them at least once as a special project, almost half plan to use these materials several times in the school year, and a significant minority plan to use them monthly and weekly.

Are participants in other Innovation in Education programs making use of the resources?

Summary: Participants in Intel Teach to the Future — both Master and Participant Teachers — comprised the core audience for the online materials. Not only did they value the resources in their classroom practice and professional development efforts, they actually used the materials in the 2001-02 school year. In fact, they were twice as likely to use the resources as non-Intel Teach to the Future participants.

Detail: Because the Intel Innovation in Education site seeks to support other Intel education programs — Intel Teach to the Future alone seeks to train 100,000 teachers — we tracked whether participants in other programs use the online resources. The interviews we conducted at educational conferences predominantly involved Intel Teach to the Future participants as the Intel-hosted workshops where we did our data collection were almost exclusively attended by Master and Participant Teachers. Regarding the survey respondents, participation in other Intel programs varied between less than one-third (Q2 '02) to two-fifths (Q3). Below are findings specific to Intel Teach to the Future participants.

- *General Site.* The Master Teachers we spoke with report that they are regular visitors to the site, that they had their Participating Teachers bookmark it, and encourage them to use the lesson plans and other resources. Master Teachers also reported that they use the resources regularly with other teachers in their schools and thought that the site was particularly useful in getting novice teachers excited about using technology in their classrooms. Despite the findings from the interviews, this may not hold true for all Master Teachers. Some reported that they were less familiar with the site—and had only been exposed to it briefly during training. The latter group reported that they had had very little experience with looking for resources on the Internet generally, and that the Innovation in Education site was too text heavy and somewhat difficult to read. In the Q3 '02 survey, 53% of Intel Teach to the Future participants (n=54) reported using materials from the site as compared to 27% (n=77) of non-participants. In the Q2 '02 survey, 41% of Intel Teach to the Future participants (n=1013) reported using materials from the site as compared to 15% (n=2578) of non-participants.
- *IAWR.* Master Teachers reported that they were very excited about the It's a Wild Ride materials. They confirmed that they intended to show the resource to their Participant Teachers, and other teachers in their schools, particularly those who were team teaching. Master Teachers also reported that they thought the organization of this section was excellent and that it clearly presented the materials, making them easily accessible.
- *An Innovation Odyssey.* Many Master Teachers reported that they do not use the An Innovation Odyssey area of the site, although two indicated that they thought it would be useful for students needing ideas for classroom projects. Participant Teachers reported that they were somewhat confused by this section and were not sure how they would use it. These teachers reported that it was too much to read and did not think they would have time to use these resources.

Do curriculum specialists and technology coordinators find the resources to be worthwhile in their professional development efforts?

Summary: Educators who have professional development responsibilities, formally and informally, indicated that they value the online materials. With Seeing Reason, Unit Projects and Plans, and IAWR, one third to two thirds of educators surveyed plan to use the materials in professional development workshops, to get other teachers excited to use technology with students, to help them integrate technology into their curriculum and/or to show them to colleagues in their schools.

Detail: As with many of the teachers, the professional development specialists and technology coordinators who we interviewed or surveyed reported that they have not had the time to introduce the resources to their colleagues. Nevertheless, they cited a number of reasons why they believe that the online resources will be valuable tools for teachers once they are exposed to them in staff development workshops, via email newsletters and through face-to-face interactions. They also perceived a few limitations with the online resources.

Perceived Value

- *It's a Wild Ride.* Staff developers reported that they appreciated that IAWR is both an interdisciplinary lesson and a model for teacher development. School Technology Leaders, Library Media Specialists and District Staff Developers reported that they obtained the video primarily to share with colleagues.
- *Seeing Reason.* Respondents reported that they saw the Seeing Reason tool as cross-curricular, having applicability in language arts as well as math and science. The staff developers interviewed about the Seeing Reason tool believed it could be an effective tool to train and support teachers as they try to implement project-based learning in their classroom. They would like to see more examples, particularly a step-by-step example with maps at the beginning of the process and at the end. They also want to see a database of maps by grade and subject. They believe this tool could be extremely popular with educators because it is or will be available at no cost, and maps can be stored off-site and are accessible from any location.
- *An Innovation Odyssey.* Most staff developers reported that they liked that this section was full of stories of teachers doing concrete lessons and activities with technology. They thought it would help them in their professional development efforts particularly because these stories demystified the use of technology in the classroom. One staff developer believed the Odyssey content would be the most useful to him. One teacher suggested that as more and more schools put up syndicated content, Odyssey would be very useful for individual school districts that want to pull parts of the Odyssey section onto their own Web site.

Perceived Limitations

- *General Site.* One district technology coordinator reported that she was confused by the site's

legal policy and what it meant for teachers' right to use lessons. Her read of the policy was that teachers do not have the right to download and use the lessons and they certainly do not have the right to share a lesson with a colleague by sending it electronically.

- *New to Technology.* Respondents who had technology coordinator responsibilities reported that the technical support section of the site was superficial — many had written tech support resources themselves — and that they would not naturally turn to Intel for this kind of help.

DISCUSSION

From its inception, the Intel Innovation in Education Web site has sought to be an online space for educators — both teachers working within individual classrooms as well as the curriculum and technology specialists who support them. As a screenshot of the site's homepage during April 2000 illustrates (Figure 1), the site initially sought to accomplish this goal by serving as an electronic catalog of Intel education programs. The original site highlighted the Intel Computer Clubhouse, Intel Teach to the Future, the Intel Science Talent Search and Intel International Science and Engineering Fair. All individual programs about which visitors could read and in which they could potentially participate.

Figure 1



Since Spring 2000, the Intel Innovation in Education Web site has grown considerably: the sheer number of pages and the depth of the programmatic content have expanded. Although the site remains focused on Intel's educational programs, it also features unique tools that live exclusively on the Web or that supplement video resources. Aesthetic and design changes aside, a screenshot of the site's August 2002 homepage (Figure 2) illustrates this substantive shift. Not only does the current site now feature company-defined programmatic areas and Education staff-created tools, it delivers these both through rich descriptions of teachers' actual experiences.

Figure 2

The screenshot shows the Intel Innovation in Education website homepage. The browser address bar displays <http://www97.intel.com/education/index.asp>. The page layout includes a top navigation bar with 'Products' and 'Support' tabs, a search bar, and a main content area with several featured articles and resource links.

Navigation and Search:

- United States Home | Select a Location
- Products | Support
- Home Computing | Business | Developer | Reseller / Provider
- Site Map | Contact Us | About Intel
- Search
- Advanced Search

Intel.com home

intel.
innovation in education

Education Resources

- Learning Projects**
 - Unit & Project Plans
 - It's a Wild Ride
 - Seeing Reason
- Professional Development**
 - Intel® Teach to the Future
 - Teaching with Standards
- Science & Math**
 - Intel International Science & Engineering Fair
 - Intel Science Talent Search
- Learning Anytime**
 - Intel Computer Clubhouse Network
- Learning About Technology**
 - Emerging Technologies
 - The Journey Inside SM

Global Commitment

Site Support

Education Keyword Search

Select a Location

Innovating in Education

Intel is committed to playing a positive role in preparing our youth for the demands of tomorrow. We work to make a difference by offering tools, resources, and programs to achieve targeted goals in math, science, and technology.

- Intel's Global Commitment to Education
- News and Success Stories
- Contributions

An Innovation Odyssey

A World Tour of Innovative Uses of Technology in Education

Seeing Reason: Mindful Mapping of Cause and Effect

Teaching cause and effect isn't always easy. Helping students see relations and make connections is a challenge. Seeing Reason is a new online resource and workspace for investigating and understanding complex systems. At the core of Seeing Reason is a free interactive mapping tool which helps students construct relationship models of their understanding.

2002 Intel International Science and Engineering Fair

From Argentina, to Kazakhstan, Malaysia, and the Virgin Islands, 1200 students from 40 countries gathered in Louisville.

This organizational structure, which emphasizes storytelling and modeling of practice, is the central quality of the site that shapes visiting educators' expectations of the site's content and their perceptions of its relevance to their classroom practice and daily priorities.

The site invites educators to review featured materials and to consider using them as other teachers, technology coordinators and curriculum specialists have done. Furthermore, all of the content areas require users to briefly explore them in order to understand them — or to build on their prior understanding of the programs because they already are participants in them. Implicit in this structure is the presence of one or more communities of practitioners. And it is the sense of on-going community that sets the site apart from many other online resources and that Intel Education staff can leverage.

Using hands-on professional development models and stories from individual classrooms is one of the qualities that differentiates the Intel Innovation in Education Web site from other education sites. Its organization is distinct from all of the following:

- broad-reaching educational portals, like Big Chalk [www.bigchalk.com], that are organized according to user, e.g. student, parent, and teacher;
- homework and teacher help sites, such as Family Education Network and Discovery's Kathy Schrock's Guide for Educators, that arrange content along subject areas; and
- online lesson plan and activities databases, such as the PBS TeacherSource and Pac Bell's Blue Web'N.³

While these sites offer educational resources, many of them are presented as stand-alone items rather than tools used by a community of users. Some of these resources appear as ready-to-use materials, a sort of "plug-and-play" approach to education that is an outgrowth of both the online medium — where fast downloads and small packages of data are possible — and the time constraints of limited teacher prep time. Concomitantly, throughout this evaluation as well as in research we and others have conducted, teachers have requested easy-to-follow roadmaps that they believe will help them navigate online materials. When they review a new resource, educators have told us they want to be able to immediately determine the subject areas and grade level, technology required, assessment strategies and relevant standards.

However, in addition to their refrain of "make it clear and give it to me quickly" teachers have appealed for sustained support. Both teachers and professional development specialists recognize that in order to strengthen the work they do with students and with their colleagues, they not only need materials but opportunities to experiment with and reflect on their use of these materials. Whether using the IAWR video as a model for interdisciplinary, project-based learning and technology integration in a teacher workshop, or using Seeing Reason to introduce students to strategies for solving complex problems, educators feel strongly that change in their practice requires ongoing support. In keeping with this need, it is not surprising that the core audience of the Intel Innovation in Education Web site are educators who have a pre-existing connection to

³ Big Chalk (<http://www.bigchalk.com/>), Family Education Network (<http://www.fen.com/>), Discovery's Kathy Schrock Guide for Educators (<http://school.discovery.com/schrockguide/>), PBS TeacherSource (<http://www.pbs.org/teachersource>), Pac Bell's Blue Web'N (<http://www.kn.pacbell.com/wired/bluewebn/>).

the company through Intel Teach to the Future. They come to the resources not as casual web browsers but as members of an established community that is already set up to offer support on a local level.

As with all supplementary resources that have an impact on student learning, it is rare for materials to make a difference for a teacher on their own. This remains true for materials that originate online or elsewhere. Instead, impact on student learning comes from how teachers use the resources and in what context. When teaching and learning improves in schools, those gains are not caused solely by the presence of technology-rich resources or because of isolated materials and tools. Rather, improvements have been shown to be grounded in a set of changes in the learning environment, including the availability of professional development opportunities, ongoing support teachers receive from technology coordinators, curriculum specialists and school and district leadership, teachers' prior experience with technology, and teachers' willingness to engage in a process of continual learning. After all, despite improvements in hardware availability and technical infrastructure, only one-third of teachers in the nation report feeling well prepared to use technology in their teaching (NCES 2001).

If the Intel Innovation in Education Web site is to continue to have an impact on the way teachers teach, it will be because its visitors will understand that they are not using an isolated set of online materials they happened to stumble upon. Instead, educators will recognize that the online resources are one piece of a much larger set of professional development tools available to them, whether within their schools, at conference workshops, or through some other medium. In the Recommendations section of this report we outline a number of steps Intel Education staff can take to extend the reach of the Innovation in Education site with the goals of enhancing professional development and expanding practitioner communities around individual tools.

IMPLICATIONS FOR FUTURE RESEARCH

Although the findings we present in this report focus primarily on questions such as “Who is finding specific resources at the site?” and “Do curriculum specialists and technology coordinators find the resources worthwhile in their work with other teachers?” they lay the groundwork for more complex inquiries about use of the materials, which we are exploring more fully in the current phase of this evaluation. Specifically, we are pursuing the following:

- **Use tracer studies, a qualitative method to learn more about how, when and why educators are sharing online resources with colleagues.** We will want to determine if these educators are distributing the resources formally through electronic newsletters and linked urls; conducting workshops and offering other professional development support with them; creating a community of users around specific tools, like Seeing Reason; sharing them informally through email and conversations; discussing them in presentations at school- and district-wide meetings and events; and seeking the support of school and district leadership to use them.
- **Track how teachers move from anticipated use of the materials to actual use.** The majority of teacher respondents reported that they were visiting the Web site for their own professional development purposes, and yet they also reported that they expected to “use” materials at the site in the future. We need to learn more about how teachers expect to move from self-education (exploring the site, reading about new ideas or curricula) to direct work with students.
- **Identify repeat users of the site, categorizing what value they find in returning to the site, and determine if there are levels of use that grow over time.** The data we have collected to date suggest that a group of curriculum specialists, technology coordinators and Master Teachers are beginning to become repeat or regular users of the site. We will want to learn more about what successive visits offers these educators, “whether their” familiarity with the online resources allows them to support others within their schools and districts.
- **Identify the factors that support teachers’ use of the resources, comparing the experience of Intel Teach to the Future participants to non-participants.** Although the majority of teachers report that they plan to use the online resources, but have not actually done so, some teachers, especially those involved with Intel Teach to the Future, have begun integrating them into their classroom practice. We can next explore what factors made it possible for them to initiate real use. We know from the surveys that many teachers report using progressive teaching strategies and have a fair amount of expertise using technology themselves and/or with students, but we do not know about the contexts in which they work. Furthermore, we do not know how teachers who may have less basic support can overcome barriers to begin using the materials.

RECOMMENDATIONS

- **Leverage Intel Teach to the Future Master Teachers to further build a community of users.** Participants in Intel Teach to the Future are already engaged in professional development, which is a necessary component of resource use and classroom practice integration. Because they are familiar with Intel's education efforts, they are both receptive to the resources and anticipate that these will be of value to them.
- **Expand professional development tied to specific resources.** To effectively use tools such as Seeing Reason, many teachers may need formal support. Sustained and structured professional development can support teachers at various levels of expertise and technological familiarity. Workshops are effective in exposing educators to these resources, however more on-going and intensive support may be necessary in order for teachers to not only integrate these materials and tools into their curriculum but to experiment with new teaching methods and innovative uses of technology. Formally integrating resources from the Web site into the Intel Teach to the Future program and curriculum can provide the structure for this professional development, as well as also serve as an outreach mechanism for the Intel Innovation in Education Web site.
- **Build awareness of the resources through established educator communications.** Many educators are hearing about the site from other educators, suggesting that word-of-mouth may be the best tool for raising awareness of the site. To build on this established form of peer to peer educator communication, Intel Education staff could raise the profile of the site within existing Intel Teach to the Future networks or expand dissemination of information about the Web site through listservs and professional development workshops.
- **Build mechanisms into the Web site that further connect educators to the resources.** To further develop educators' awareness of the online materials, the Web site could offer more detailed newsletter options. Though educators may perceive surveys and other electronic feedback mechanisms as bothersome, giving educators the opportunity to opt-in to specific resource notifications will let them know when Intel has made updates and will encourage repeat visits. Whereas the current "Subscribe to Newsletter" option is a general invitation to receive electronic mailings, section-specific choices would give educators information that they have personally deemed valuable. Page-specific "email a friend/colleague" options would also give educators an opportunity to direct communication about individual tools and materials.
- **Continue to use CCT research to gauge educators' interest in providing feedback that Intel Education staff can use to refine online resources.** Many educators who visit the site are interested in learning more about the resources and/or are willing to provide additional feedback, as indicated by the high percentage of survey respondents who agreed to receive additional requests for information.

APPENDIX 1

Detailed Findings Overview

From October 2001 through August 2002, CCT researchers used the following data collection instruments:

- A brief email survey distributed to teachers and other educators who requested a copy (or copies) of Intel's It's a Wild Ride video from December 2001 — February 2002. (Appendix 2).
- Interviews with teachers, professional development specialists and technology coordinators conducted during the Northwest Council for Computer Education's (NCCE) annual conference held in Seattle, Washington, March 14-16, 2002. These interviews focused on the Innovation in Education Web site generally and the IAWR and Seeing Reason sections specifically. (Appendix 3).
- An electronic survey that appeared on the Intel Innovation in Education Web site from March 15 to April 12, 2002 ("Q2 '02 survey"). (Appendix 4).
- Interviews with Intel Teach to the Future Program Master and Participating Teachers conducted during the National Educational Computing Conference (NECC) annual conference held in San Antonio, Texas, June 15-17, 2002. These interviews focused on the Innovation in Education Web site generally and the IAWR and Seeing Reason sections specifically. (Appendix 5).
- A web-based follow-up survey distributed August 2002 to educators who responded to the Q2 '02 survey. This survey focused on the Innovation in Education site generally, as well as use of IAWR, Seeing Reason and Exemplary Project Plans specifically. (Appendix 6).
- An electronic survey that appeared on the Seeing Reason area of the Intel Innovation in Education Web site in Q3 from August 1 –31, 2002. (Appendix 7).

What follows are detailed findings that resulted from each of these data collection efforts.

APPENDIX 2

It's A Wild Ride Video Recipients Survey

From December 2001—February 2002, CCT researchers collected survey data from It's A Wild Ride video recipients regarding their personal/professional background (are they teachers, library media parents, students, etc.), motivation for visiting the site, and how they plan to use these materials. The survey also included questions about classroom practice and professional technology experience. We have found these questions to be very helpful in providing background information about respondents and they also are useful in describing what types of educators are most likely to use technology-based resources.

We received two contact lists from the Intel Education project team to which we sent copies of the email survey. The first list contained 135 names and contact information. The second list contained 1035 names bringing the total to 1214 possible respondents. We received 157 valid responses. As with most survey data, there are inconsistencies in the number of total respondents for each question. Often respondents do not answer all questions within a survey. An additional 20% of respondents returned the survey without answering any questions.

Results

Professional Background

The first question asked respondents to identify themselves. (N=140) Of the 140 respondents who did identify themselves, 48% are classroom teachers, 15% of those are elementary school educators, and over 23% of respondents are middle and high school science teachers. Over 25% of respondents chose the "other" category. These included parents, home schoolers, engineers who are interested in becoming educators, university faculty and computer teachers. Several respondents who chose "other" were K-5 gifted and talented teachers. This increases the percentage of teacher respondents to over 50%. About 10% of respondents are school technology coordinators, 4% of respondents are library media specialists, and only 3% are district staff developers.

The educators who responded to this survey reported using progressive pedagogical practices in their classroom. Eighty-two percent of educators reported using project-based and/or teacher developed materials (N=149). Additionally, most teachers (73%) reported having many activities going on at the same time (N=149). The majority of teachers also reported that their classrooms are student-directed. For example, 69% reported that students' inquiries and suggestions often decide what topics to cover in lessons (N=146), and 80% of teachers have students review and revise their own work (N=147). In addition, the majority of educators (92%) use technology almost daily for work-related tasks such as record-keeping, developing lesson plans and research (N=147). These respondents also reported using technology with their students at least once per month (93%), with 57% of these educators using computers with their students several times per week (N=145).

Awareness of IAWR Web-based Materials

Respondents were asked why they had requested the IAWR video and had the option to choose more than one answer (N=231). The majority of responses were to obtain materials for students in their classrooms (38%). Equally, respondents requested the IAWR video to share with colleagues (33%), and to a lesser extent, to obtain materials for their own professional development (20%). The remaining 9% chose “other” with answers ranging from “sharing resources with my children at home”, and “sharing with university students”.

Not surprisingly, School Technology Leaders, Library Media Specialists, and District Staff Developers reported that they obtained the video primarily to share with colleagues, while classroom teachers reported that they obtained the video to use with students. However, K-5 teachers were split equally between obtaining materials for colleagues and obtaining materials for their students.

Respondents were asked if they are aware that there are Web site materials affiliated with the video, and if they have used them in conjunction with the video. Overall, 63% of respondents knew that there was a Web site affiliated with the video, while 37% were unaware that there were web-based materials available (N=157). We then looked at differences among respondents with regard to their awareness of the Web site, 48% (N=21) of K-5 teachers and 63% (N=19) of middle school science teachers were unaware of the Web site. Only seven Library media specialists responded to the survey, 3 of them were unaware of the Web site. 33% (N=15) of school technology coordinators were also unaware of the Web site.

Of the respondents who replied that they were aware of the materials available online, 44% had used the Web site in conjunction with the video, while 56% had not (N=116). We then analyzed the differences in use of the web-based materials between respondents who had obtained the video to share with colleagues, for their own professional development and those who had obtained the video to use with students. Of the respondents who obtained the video for use with their students (N=88), 30% have used the Web site in conjunction with the video, while 49% have not used the Web site. (21% of these respondents did not answer whether they had used the Web site in conjunction with the video.) Of the respondents who obtained the video to share with colleagues (N=77), 31% have used the Web site while 37% have not. (32% of these respondents did not answer whether they had used the Web site in conjunction with the video.) The respondents who obtained the video for their own professional development (N=46), 28% had used the Web site in conjunction with the video, while 52% did not. (20% of these respondents did not answer whether they had used the Web site in conjunction with the video.)

Respondents were asked whether they had viewed other materials on the Intel Innovation in education Web site. Overall, 37% (N=149) had viewed materials on the Web site a few times, while 19% of respondents have viewed materials on the Web site many times. 32% of respondents have not viewed materials on the Web site but planned to, while 13% of respondents simply answered that they have not viewed these materials.

Use of IAWR Materials

The survey included a series of questions aimed at determining how and whether educators have used or plan to use the materials either in their classroom and/or with their colleagues. Overall, the majority of respondents, 57%, did not plan on basing a whole unit on the IAWR materials (N=135), although a significant minority did plan to do this (36%). 7% of respondents have already used the materials in this way. While teachers were split about planning to use the materials for a whole unit, (for example, 24% of elementary teachers (N=21) and 41% (N=19) of middle school science teachers plan to use these materials to create a whole unit.) about half of school technology leaders (6 out of 14) and 5 of 7 library media specialists planned to use the materials in this way. Over 50% of respondents planned on using the materials for a special project (N=148), while 17% have already done this. 30% of respondents did not plan on using the materials in this way. The majority of respondents had already used the IAWR materials, or plan to, in an existing lesson plan (n=146). Although these particular uses seem directed at classroom teachers, district and school technology leaders (12 out of 22), staff developers (3 out of 4) and library media specialists (5 of 6) have used the materials for special projects and many of these same respondents have integrated them into existing lesson plans. Most respondents had used, or plan to use, these IAWR materials to get ideas on how to integrate technology into their curriculum. In addition, some respondents (13%) have used the materials to implement new assessment strategies (N=137), while 34% reported that they plan to do this. 53% of respondents do not plan to use the materials in this way.

The majority of both teachers and school and district technology leaders (54%) did not plan on team teaching with these materials (N=137), 40% did plan on team teaching with these materials and 8% of these educators had already done this. Many educators (33%) reported using these materials with a colleague, while the majority (52%) plan on using these materials with their colleagues (N=137). Overwhelmingly, 93% of respondents reported that they had already, or plan to, share these resources with teachers in their school, (N=148). Although the majority of the respondents are teachers, a significant minority, 37% (N=141), planned to use these materials in a professional development workshop. Interestingly, 29% of K-5 teachers planned to use these materials this way.

APPENDIX 3

NCCE Participant Interviews

During the Northwest Council for Computer Education's (NCCE) annual conference held in Seattle, Washington, March 14-16, 2002, CCT researcher conducted interviews with teachers, technology coordinators and curriculum specialists.

At NCCE, we conducted three types of interviews. The first set involved seven individual interviews that focused on the Intel Innovation in Education Web site as a whole. Secondly, we conducted a group interview with three conference participants who attended the Seeing Reason workshop. Our third data set came from a group interview we conducted with three conference participants who attended the three-hour project-based learning workshop. In addition to asking each interviewee questions about classroom practice, professional use of technology, and integration of technology into pedagogy and professional development, we also asked questions specific to the tools and resources available at the Intel Innovation in Education Web site. (See Appendix A for a list of guiding questions we used for each interview set.)

Mirroring our data collection, this section contains four parts:

1. Top-Level Findings
2. Intel Innovation in Education Web Site
3. Seeing Reason
4. It's a Wild Ride

Top-Level Findings

- The majority of interview participants reported that the site offers strong content. For those educators that had seen the site before, they said that they were impressed with the overall improvement in the site and planned to visit the site more regularly and/or recommend it to colleagues. The majority of the participants had visited the site earlier in its history but had not returned recently. They found the changes significant and the new format useful.
- Navigation was difficult for some respondents particularly around the Odyssey section and attempts to return to the Education homepage. Some participants desire sidebar navigation that remains constant no matter where they are on the site. Others found that the daily index to the Odyssey stories (sorted by day they appeared) was not useful—they wanted to sort them by topic or grade level.
- The quality of the exemplary lesson plans was a significant issue for many educators. It was not clear that the lessons grew out of the Intel Teach to the Future program, how the lesson plans were developed, or by whom and by what process were they chosen for listing.

- All participants were very positive about the It's a Wild Ride materials. They said that they thought the materials were obviously classroom tested. Many said they would integrate parts of the unit in their classrooms and share the project with their colleagues. They thought the section was well organized, making it easy for them to find the most relevant materials. The focus on the teachers' point of view set this resource apart from other online lesson resources and made it more appealing as a professional development tool.
- The staff developers interviewed about the Seeing Reason tool believed it could be effectively utilized to train and support teachers as they try to implement project-based learning in their classrooms. They would like to see more examples, particularly a step-by-step example with maps at the beginning of the process and at the end. They also want to see a database of maps by grade and subject. They believe this tool could be extremely popular with educators because it is available at no cost, and maps can be stored off-site and are accessible from any location.

Intel Innovation in Education

With recruitment assistance from Intel Education staff, we identified seven conference participants who were willing to do a "walk-through" of the Intel Innovation in Education site, identifying areas of interest. Interviewees included the following:

- 2 staff developers
- 1 grade-school teacher
- 2 network manager/technology classroom teachers
- 1 high school teacher
- 1 district technology coordinator

General Site

- **Strong overall impression.** Many respondents had visited the Intel Education Web site in the past but said that they had not visited it recently. Overall, educators who had visited the site before thought that the site had improved tremendously and planned to visit the site more regularly. They thought the resources on the site were relevant to the work they are doing with their students and colleagues.
- **Clear purpose.** Most respondents reported that they were impressed with the overall look of the Web site and planned to recommend it to their colleagues. They said that it was clear to them that the site was intended for educators, both in the classroom and working at the district level. In the brief time that they were able to look at the site, they were able to determine what they could expect to find there.

- **More lesson plans wanted.** Respondents thought the exemplary lesson plans were useful in general. However, they said that they wanted more lessons on the high-school level, more in K-2 and more that focused on disciplines other than science and math. Though respondents said that the short interview time did not allow them to review the quality of the lesson plans, they looked forward to looking them at greater length on their own time.
- **Navigation confusing.** Respondents commented on how the navigation bar on the left changes from screen to screen. They saw little consistency in the changes and said that they were looking for a navigation bar or buttons to anchor them. Navigation at the top was also confusing for some respondents; it was unclear that the buttons at the top were links. Some respondents also said that it was not clear that Odyssey was a link, and many of the educators had to be shown this section. Additionally, when visitors were several pages into the site they had difficulty finding their way back to the home page. The Intel/home/education graphic was not clearly perceived to be a link.
- **Ease of bookmarking.** Respondents reported that they liked having the ability to bookmark deep links rather than being forced to bookmark at a higher level (some sites use a database structure that only allows top-level urls to be bookmarked).
- **No download delays.** Visitors said they liked the quick loading of individual pages.
- **Interest in publishing Intel content.** One staff developer said that he hoped that the site could be “syndicated” meaning he could republish Intel content on his district’s Web site. This would allow him to “grab” different content sections and add them to his district site, allowing teachers and media specialists who he serves to see relevant information on a timely basis. Specifically his school is building a web portal and having a regular feed of Intel content, such as the daily Odyssey profiles, would be an asset.

An Innovation Odyssey

- **Unclear link.** It was not clear to any of the educators that we talked to that the large image (with sunflower) on the Education home page that linked to Odyssey was clickable. Some looked left immediately. As mentioned above, many educators had to be shown the Odyssey section.
- **Strong content.** Most staff developers reported that they liked that the section was full of stories of teachers doing concrete lessons and activities with technology. They thought it would help them in their professional development efforts, particularly because these stories demystified the use of technology in the classroom. One staff developer thought the Odyssey content would be the most useful to him. One teacher suggested that as more and more schools put up syndicated content, Odyssey would be very useful for individual school districts that want to pull parts of the Odyssey section onto their own Web sites.
- **Teacher-focused organization needed.** Staff developers and teachers said that they found the

organization of this section to be unclear. All of the educators wanted the area to be organized by content area, grade and date, not by day. They said that the stories have such a broad range that there would be little reason to check the site each day. Teachers wanted “at-a-glance convenience.” They wanted to be able to see immediately how these stories were applicable to standards. In addition, one teacher said that she would like to see a short synopsis for each story to know which story she would be interested in looking at more thoroughly.

- **Top-level information wanted.** Respondents said that they would like “fast facts” contained in a box or some other easy-to-read layout. They said that the box should contain the following relevant items: grade(s), subject area(s) and links to relevant standards.
- **Connection to standards.** Several respondents said that ideally both state and national standards would be listed but they would be content with only national standards.
- **Technology required.** One teacher said that he wanted to be able to quickly tell what technology and other resources were used by the teacher in each story.
- **Clarify criteria used to select stories.** Respondents reported that they wanted to know what the criteria are for selecting stories. They commonly asked, “Who gets to submit their story and why?”

Exemplary Lesson Plans

- **Clarify quality and origin of lesson plans.** The quality of the lesson plans was a significant issue for many educators. It was not clear that the lessons grew out of the Intel Teach to the Future program, how the lesson plans were developed and by whom. Respondents reported that they wanted to know what quality the lessons had. For some, this meant knowing more about how the lessons were developed; for others, it meant knowing if the lessons had been vetted — tested in actual classrooms — and by whom. Some teachers liked how criteria for the lessons were included. However, one staff developer did not understand why that was included and thought that it “was just taking up space.” It was unclear to staff developers why the unit plans include a rubric and what educators were to do. They asked, “Why is there a form if you can’t create a unit?”
- **More lesson plans wanted.** Most educators said they liked the detail of the lessons and that these included rubrics, quick summaries, resources that a teacher would need and clear assessments. Most teachers reported that they would not use one of these lessons from start to finish but would pick out parts to integrate into their curriculum. Therefore, they said that they would want a larger number of lessons from which to choose.
- **Strong value of rubrics and assessments.** Respondents reported that the assessment rubrics “legitimize the lessons.” For one teacher, the assessments were the most important and useful component of the lesson plans and planned to return to the site in order to access them. One staff developer also believed that the assessments and other artifacts that are included in the

lesson would make them very attractive among the teachers with whom she works.

- **Legal policy misleading.** One district technology coordinator said she was confused by the site's legal policy and what it meant for teachers' right to use lessons. Her read of the policy was that teachers do not have the right to download and use the lessons and they certainly do not have the right to share a lesson with a colleague by sending it electronically.

It's a Wild Ride

- **Clear purpose.** Respondents said they understood that the site was not for students but teachers and teacher developers. They did not express any disappointment in not finding a "Students" button or content directed at students but were satisfied in knowing that this was a place to gather ideas, learn about new resources and explore professional development models.
- **Value of content.** Teachers and staff developers said that they liked that It's a Wild Ride is both an interdisciplinary lesson and a model for teacher development.
- **Clearer organization wanted.** Several respondents reported that there was too much text in the IAWR section of the site. They said that they want to be able to get to the information that is relevant to teachers quickly. For instance, they would like to see a pullout box toward the top of the page, indicating what the relevant standards are and what subject areas and grade levels were tied to the information.
- **Inaccessible to less affluent students.** One teacher felt that the home component of the It's Wild Ride project made it unfeasible for low-income students to participate. She added that the project overall seemed designed for students with more resources.

Managing Technology: Troubleshooting

- **Superficial tech support.** Respondents said that the technical support section of the site was superficial — many had written tech support resources themselves — and that they would not naturally turn to Intel for this kind of help.

Additional Requests

- **Greater functionality.** Several educators requested that there be features such as: Email a friend, printer-friendly and/or PDF versions of the content.
- **Better searching.** Several educators reported that they wanted a more open-ended and flexible search engine for the Innovation in Education site as a whole.
- **Additional resources.** One teacher said that he wanted a resources section that would include links to other Web sites. Acknowledging that Intel would not be able to develop lesson plans in all subject areas and all grade levels, he said that he would like to see an annotated list of links to other Web sites that offer other kinds of educational resources.

Seeing Reason

After the workshop on causal mapping, we interviewed three staff developers about their impressions and anticipated use of the tool.

- **Value of tool.** All respondents said that Seeing Reason would be a good tool to support problem solving activities and said they looked forward to learning how to use it and introducing it to their colleagues.
- **Problem-solving approach uncommon.** All respondents reported that there is “a long way to go” to get teachers to integrate problem solving into their pedagogy. They said that it would take a great deal of staff development before many teachers will be able to use problem solving and they were uncertain whether the level of training required was likely to occur within their districts on a broad scale.
- **Advantages over similar application.** Though respondents were familiar with Inspiration, a more elaborate application that supports causal mapping, they said that Seeing Reason offered two important advantages: whereas Inspiration is cost-prohibitive for some districts, Seeing Reason is free; and Seeing Reason allows students and teachers to retrieve their work from any location because it is web-based.
- **More detailed example wanted.** Respondents expressed an interest in more detailed examples of the tool in action. They said that the traffic jam example was not detailed enough and, instead, they “want to see where you start and where you end up.”
- **More maps wanted.** Respondents expressed an interest in having more supporting materials on the Intel Education Web site. In particular, they said that they would like to see a library of teacher-created activities that feature the use of the tool and maps that students have made in a wide range of disciplines and grade levels.
- **Greater ease of use.** Respondents reported that, in the tool’s current configuration, the process of setting up students accounts is too confusing and cumbersome. They said that there was “very little room for errors,” for instance, they had difficulty editing account names, and would prefer a process that allows them to make changes.

It's a Wild Ride

Immediately following the workshop on project-based learning that featured It’s A Wild Ride, we interviewed three conference participants — one elementary classroom teacher, one middle-school teacher and one staff developer — about their impressions and anticipated use of the video and web materials.

- **Value of resources.** All respondents reported that the materials were clearly classroom tested and one teacher planned to use part of It’s a Wild Ride project in her classroom next year.

- **Clear organization.** All the participants, both in the one-on-one interviews and the group interview, liked the way the materials were organized into six sections. Respondents said that they were able to quickly access the materials that were relevant for them.
- **Strong components.** A teacher who is currently working on a Solar System project in her classroom plans to incorporate some of the problem-solving and interdisciplinary structures of the It's A Wild Ride project even though she does not plan to use the content. Another teacher thought that the teachers on the video skillfully integrated language arts into a math and science project and planned to incorporate those ideas into her own project work.
- **Concern for space required.** One teacher said she was concerned that she did not have enough physical space to implement the project in the way it was presented in the video. She said that sometimes her project work spills out into the hallway and so she was not sure that it would be feasible. Other interview participants did not share this concern.

APPENDIX 4

Q2 2002 Innovation in Education Electronic Survey

From March 15 to April 12, 2002, CCT mounted an electronic survey on targeted sections of the Intel Innovation in Education Web site to collect data about who is visiting the site and what resources visitors are using.

Innovation in Education staff selected the a wide number of pages on which to mount the pop-up surveys in an effort to reach as many users visiting core programmatic areas of the Web site as possible. The Q2, 2002, pop-up surveys were associated with the following pages:

Intel Innovation in Education main page - (<http://www.intel.com/education>)

- It's A Wild Ride landing page - (<http://www.intel.com/education/projects/wildride/index.htm>)
- It's A Wild Ride professional development information page - (http://www.intel.com/education/projects/professional_development/index.htm)
- Intel Teach to the Future program information page (<http://www.intel.com/education/teach/index.htm>)
- Intel Unit and Project Plans page(http://www.intel.com/education/exemplary_planning/index.htm)
- Intel Computer Clubhouse Network landing page (<http://www.intel.com/education/icc/index.htm>)
- Science Talent Search landing page - (<http://www.intel.com/education/sts/index.htm>)
- International Science and Engineering Fair landing page (<http://www.intel.com/education/isef/index.htm>)
- Innovation Odyssey landing page - (<http://www97.intel.com/odyssey/index.asp>)

The survey asked respondents about their role in education (if any), and explored respondents' interest in the Web site in general and specific content resources in particular. The complete text of the survey is included as an appendix to this report. Two questions allowed respondents an opportunity to submit open-ended comments, all others were forced-choice questions.

Over the 29 days that the survey was active, there were 3,838 responses, of which 3,759 were valid (others were blank, duplicates, etc.). Note that the total number of responses varies from question to question in the summary below.

Top-Level Findings

- A wide variety of visitors used the Innovation in Education Web site, including: teachers, students, technology coordinators, professional development specialists, parents, school adminis-

trators and library media specialists. A majority of the respondents (50%) were classroom teachers. Of these, 35% teach in elementary grades, 22% in middle grades, 28% in high school, and 15% at the college/university level. The second largest group of respondents were students (16%), perhaps because their teachers had suggested they visit the site to learn about a technology company, as several students indicated. Additionally, several high school and college students reported that they were at the site looking for scholarship information.

- Although teacher respondents reported that they work in a wide range of disciplines — Technology, Industrial Arts and Engineering, Science, Language Arts, Math, Social Studies, Health, and Art — the areas represented most often were general education (31%) and Technology, Industrial Arts and Engineering (25%).
- The majority of respondents (53%) reported that their interest in the Web site was for their own professional development. This was especially true for classroom teachers. Obtaining materials and ideas to use with students (20%) and getting materials for colleagues (7%) were less frequent choices overall. One out of five respondents indicated that other reasons for visiting the site. For example, a student reported looking for scholarship information or a parent reported looking for ways to work on science at home with a child was what prompted their visits.
- Approximately one-quarter of survey respondents were repeat visitors (23%). A considerable proportion of some categories of visitors reported having used materials from this site previously: 34% of technology coordinators, 28% of professional development specialists and 22% of classroom teachers reported using materials from the Web site occasionally or often.
- Just under one-third of respondents (28%) reported that they are participants in either the Intel Computer Clubhouse Network or Intel Teach to the Future.
- The majority of the respondents (68%) were first-time visitors to the Web site, and reported that they did not have an opinion yet about the materials on the site. However, 40% reported that they expect materials on the site will be useful to them.
- Although most educators reported that they have not used the materials on the Web site yet, 40% of respondents reported that they planned to do so.
- Most respondents (39%) indicated that they learned about the Web site from other educators, rather than from another Web site (15%); from a search engine (10%); during a professional development workshop (7%); through a magazine or newsletter (6%); at a conference (3%); from a web advertising banner (2%); or from an alternate source (17%).
- Approximately half of all respondents reported that they were willing to participate in further electronic evaluation efforts, having provided their email address at the end of this survey.

Results

Professional Background

The majority of respondents reported that they were classroom teachers (50%, 1,848). A significant minority of respondents reported that they were students (16%, 601). School technology coordinators and district professional development specialists each made up over 7% (274, and 267) of overall respondents. Five percent (177) of respondents described themselves as school specialists. Parents made up 4% (147), School Administrators (116), library media specialists (115), and district technology coordinators each accounted for 3% of the total. Home school teachers comprised 1% (28) of the survey respondents. (N=3,683)

There was an almost even spread among respondents to the question "If you teach, what level?" (n=2,857). Elementary teachers comprised the largest group making up 26% (990) of the total respondents, with high school teachers making up 21% (798), and middle school teachers accounting for 17% (635) of the total. Over 12% (433) of the total number of respondents reported they were College or University faculty.

Regarding subject area, thirty-one percent (987) of respondents reported that they teach all subjects, 25% (782) teach Technology, Industrial Arts and Engineering. Only 10% (330) of all respondents reported they were science teachers. Language arts (250) and math teachers (244) comprised 8% of the total. Four percent (130) of respondents reported that they taught social studies, 2% (73) taught visual arts and 1% (35) of respondents were health and physical education teachers. Eleven percent chose "other". (N=3,185)

Twenty-eight percent (1,024) of the respondents were participants in either the Intel Computer Clubhouse Network or Intel Teach to the Future. (N=3,632)

Previous Interaction with Web Site

The majority of respondents (68%, 2,489) reported that they had not visited the Intel Innovation in Education Web site before, 22% (821) reported that they had visited the site occasionally and 10% (362) reported that they had visited the Web site often. (N=3,673)

Introduction to the Web Site

Thirty-nine percent (1,437) of survey respondents reported that they had heard about the Web site from another educator. Fifteen percent (560) reported that they had found out about the Intel Innovation in Education Web site from another Web site; 10% (363) through a search engine; 7% (268) during a professional development workshop; 6% (204) in a magazine or newsletter; 3% (115) at a conference; and 2% from a web advertising banner. A small percentage of respondents chose more than one response to this question. The majority of these reported that they had found out about the site from another educator and at a professional development workshop. (N=3,660)

Interest in the Web Site

- **All respondents** - The majority (53%,1934) of respondents reported that their interest in the Web site was for their own professional development. Twenty percent (733) responded that they came to the site to get materials and ideas to use with their students. Only 7% (249) reported that they were visiting the site to get materials for their colleagues. Twenty percent of the total respondents chose "other" for this question. A number of respondents (763) chose more than one response. Of this total, 74% (562) reported they had come to the Intel site to get materials for their own professional development and to get materials and ideas for their students. Seventeen percent (126) reported that they had come to the site to get materials for both their students and their colleagues, and 9% (74) chose all of the options. (N=3,642)
- **Classroom teachers** - The majority of classroom teachers (62%, 1,119) reported that they were interested in the Web site for their own professional development. Twenty-six percent (475) reported that they were interested in getting materials and ideas for their students and only 2% reported that they are collecting materials for their colleagues. The remaining classroom teachers indicated that they had come to the site for "other" reasons. Many classroom teachers reported that they were interested in participating in Intel education programs and came to the site to find out more information. Several teachers reported that they were looking for innovative curriculum and wanted more ideas about how to integrate technology into their curriculum. (N=1819)
- **Students** - Among the students who responded to this question, 42% (233) reported that they were interested in getting materials for their own professional development. Eight percent (47) of these students reported that they were interested in getting materials and ideas for their own students. (N=559)
- **Technology coordinators** - Among the technology coordinators who responded to this question, 46% reported that they were interested in the Web site for their own professional development, 25% reported that they came to the site to get materials and ideas for their own students, 15% of these coordinators reported that they are interested in getting materials for their colleagues, and 15% chose "other" for this question. (N=268)
- **Professional development specialists** - A majority of professional development specialists (55%, 142) reported that they had come to the site for their own professional development, 17% chose "other," 15% reported that they were at the site to get materials for their colleagues and 12% reported that they were visiting the site to the site to get materials and ideas for their own students. (N=260)
- **School specialists** - Fifty-two percent of school specialists reported that they were interested in the Web site for their own professional development, 22% reported that they wanted to obtain materials and ideas to use with their students, and only 12% reported that they were at the site to get materials for their colleagues. Fourteen percent chose "other" for this question. (N=173)

Use of Web Site Information/Resources

Out of the 3,684 visitors who responded to the question about whether they used materials on the Web site, the majority of visitors reported that they had either not used any materials on the web sit but plan to (40%, 1,488), or reported that they had not used these materials (37%, 1,369). Sixteen percent (573) reported that they had occasionally used the Web site and 7% (253) reported that they used the materials many times.

- **Classroom teachers** - The majority of visitors who responded to this question were classroom teachers. The majority of these teachers, 42%, reported that they had not yet used the materials on the Web site but plan to. Thirty-six percent of teachers responded that they had not used the materials available on the Web site, 16% of teachers reported using the materials occasionally, and 6% had used the materials in their classrooms often. (N=1,822)
- **Students** - Of the 584 students who answered this question, 44% reported that they had not used the materials on the site, 41% reported that they had not used the materials but plan to, 13% reported that they had used the materials occasionally, and 3% responded that they had used the materials available on the site often. (N=584)
- **Technology coordinators** - The majority of school technology coordinators reported that they had not used the materials on the Web site but plan to, and 30% of these coordinators reported that they had not used the materials. However, 21% reported that they had used the materials on the Web site occasionally and 13% responded that they had used the materials often. (N=271)
- **Professional development specialists** - Thirty-nine percent of professional development specialists reported that they had not used the materials on the Web site but plan to while 30% of these specialists reported that they had not used the materials. Seventeen percent of the professional development specialists reported that they had used the materials occasionally, and 11% responded that they had used the materials often (N=259). Similarly, the majority (37%) of school specialists reported that they had not used the materials but plan to, while 35% reported that they had not used the materials. Sixteen percent of these specialists reported that they had used the materials occasionally, while 13% responded that they had used the materials often. (N=171)

Value of Web Site Information/Resources

The majority of respondents (55%, 1,983) reported that they did not have an opinion about the materials at the time of their visit to the Web site. Forty percent (1,439) reported that “it looks useful to educators like me.” Only 2% (63) of respondents reported that it wouldn’t be useful for them. Three percent (117) of respondents chose “other.” (N=3,603) Many of these respondents reported that the materials were very useful, several people offered comments like, “great information, just what I was looking for.” There were some educators who reported that they wanted to see more materials in other subjects. Two special education specialists responded that they would

like to see more materials for their students, and one person reported that s/he would like to see content in Spanish.

Willingness to Participate in Future Data Collection

Half of all respondents (50%, 1770) provided their email address in order to receive an email survey in the future.

APPENDIX 5

NECC Participant Interviews

CCT researchers collected conducted interviews with participants at the National Educational Computing Conference (NECC) annual conference held in San Antonio, Texas, June 15-17, 2002.

At NECC, we conducted two sets of interviews. First, we conducted a group interview with four conference participants who attended the Seeing Reason workshop. Secondly, we conducted one individual and three pairs of interviews that focused on the Intel Innovation in Education Web site as a whole. In addition to asking each interviewee questions about classroom practice, professional use of technology, integration of technology into pedagogy and professional development, we asked questions specific to the tools and resources available at the Intel Innovation in Education Web site. (See Appendix A for a list of guiding questions we used for each interview set.) At the request of Intel staff, we also asked all interviewees to respond to current top-level site navigation, which does not contain prominent links to corporate product information, and to respond to proposed navigation, which will include a banner with “Home Computing,” “Business,” “Developer,” and “Reseller/Provider” links and “Product” and “Support” buttons.

Mirroring our data collection, this section contains three parts:

1. Seeing Reason
2. Intel Innovation in Education Web Site
3. Site Navigation

Seeing Reason

After the workshop on causal mapping, we interviewed three classroom teachers and one teacher/technology coordinator about their impressions and anticipated use of the tool. All four of these teachers were participants in the Intel Teach Program; two were Master Teachers and two were Participating Teachers. They taught the following subjects:

- high school design and publishing
 - high school English and journalism
 - junior high school history, and
 - junior high school technology.
- All respondents said that Seeing Reason would be a good tool to support problem-solving activities in their classrooms and said they had specific, immediate ideas about how they and/or their colleagues could integrate the tool into their classroom practice.

- Respondents reported that they saw the tool as cross-curricular, having applicability in language arts as well as math and science.
- Similar to the first group of interviewees at NCCE, these teachers reported that their students were less familiar with deductive reasoning and said that they thought this tool could help develop problem-solving skills. They said that the current climate of standardized testing has de-emphasized higher order thinking among their students – something they would like to change.
- Teachers reported that their less tech-savvy colleagues who were looking for ways to integrate technology into their classrooms without “going to the computer lab” would be drawn to this tool. They also said that novice computer users would be able to learn how to use Seeing Reason because it is “straightforward” and “easy to use.”
- Though respondents were familiar with Inspiration, a more elaborate application that supports causal mapping, they said that Seeing Reason offered two important advantages: whereas Inspiration is cost-prohibitive for some districts Seeing Reason is free; and Seeing Reason allows students and teachers to retrieve their work from any location because it is web-based. Teachers said that this would allow students to share their work with parents, strengthening the home-school connection. Overall, teachers also said that Inspiration got “very complicated and confusing very quickly.”
- At the same time, according to respondents, Inspiration has three advantages over Seeing Reason: 1) the ability to copy a map into a Power Point presentation or other applications; 2) the ability to make an outline from a map; and 3) the ability to import pictures. Though all of the teachers said the first option was important, they said the second two were “bells and whistles.”
- Respondents expressed an interest in having more detailed examples of the tool in action. Master Teachers said that they would like to introduce the tool to Participating Teachers and would like to invite them to submit samples that could be made available at the Innovation in Education Web site.
- Consistent with the NCCE interviews, respondents expressed an interest in having more supporting materials on the Intel Innovation in Education Web site. In particular, they said that they would like to see a library of teacher-created activities that feature the use of the tool and maps that students have made in a wide-range of disciplines and grade levels.
- Respondents reported that the only barriers to using the tool were not unique to it. That is, because it is web-based, a reliable connection to the server is necessary but respondents said this was true of all Internet-related tools and would not deter them from using this particular tool.

Intel Innovation in Education Web Site

With recruitment assistance from Lamoyne Dunn, Project Director for the Texas Regional Technology Agency with Intel Teach, we identified seven conference participants who were willing to do a “walk-through” of the Intel Innovation in Education site, identifying areas of interest and offering suggestions for improvement. Interviewees included the following:

- 5th grade teacher, Intel Master Teacher
- 6th grade science, Intel Master Teacher
- 6-8th grade resource and math, Intel Participating Teacher
- 6th grade math teacher, Intel Participating Teacher
- 6th grade reading teacher, Intel Participating Teacher
- two Kindergarten teachers, Intel Master Teachers

General Site

- All of the respondents were aware of the Web site and had visited it at least once before. Master Teachers said they were regular visitors and that they had their Participating Teachers bookmark the site and use the lesson plans and other resources. Master Teachers also use it regularly with other teachers in their schools and thought that it was particularly useful in getting novice teachers excited about using technology in their classrooms.
- All respondents liked the redesign of the site. They thought it was much easier to navigate and liked the new images that took the visitor to specific sections of the site. Teachers that were experienced Internet users thought that the site had an excellent mix of text and visual elements.
- The Participating Teachers were less familiar with the Intel site. One said that she had only seen the site briefly during her training. They also had very little experience with looking for resources on the Internet generally. They thought that the site was too text heavy and was somewhat difficult to read. One remarked, “It looks too much like a newspaper.”
- One respondent said that the images of women in computing and the choice to quote Grace Hopper were very appealing and set a good role model for students.

Odyssey

- Two Master Teachers reported that they thought this section would be particularly useful for students to get ideas about classroom projects. They said that the stories, because they involved both students and teachers, would motivate their students and spark new ideas.

- Respondents, especially the Master Teachers, reported that they do not use this section of the site.
- Participant Teachers were somewhat confused by this section and were not sure how they would use it. They thought that it was the description of one project and then realized there were stories from many classrooms. These teachers thought that it was too much to read and did not think they would have time to use these resources.

Lesson Plans

- Regular users of the Web site reported that they were very pleased with the redesign of the site and found the lesson plan database much easier to find than it had been previously. They also said that the clear organization of the lesson plans and how each one delineated the materials that were required, educational objective and the time it would take to complete. They also said that it looked familiar, meaning that it looked like other lesson plan materials that are available on other sites. One teacher said she was especially enthusiastic because she remembered when the resources were only available through PDF, making the lessons cumbersome to use. She said, "Boy, I like this – I will definitely be using these resources more now."
- Most teachers said they had no difficulty finding specific resources relevant to their practice. For example, the Kindergarten teachers looked for math lessons that pertained to patterns and found with eight possibilities. They were pleased with that response as they said they did not feel inundated with information yet had enough material from which to choose.
- Participant Teachers who were less experienced in looking for web-based curriculum materials, however, had some difficulty finding resources. When they did find a lesson plan after some searching, they were pleased with the quality of what they found.
- Respondents requested that the lesson plans in the database be aligned to national standards. Because there is so much variation from one state to the next they said that they would rather have the national set of objectives correlated with each lesson and then each teacher could determine how it did or did not fit into a specific curriculum.

It's a Wild Ride

- Respondents said that the collaborative nature of this section was appealing.
- Master Teachers reported that they were very excited about this project. They said that they intended to show the resource to their Participant Teachers and other teachers in their school, particularly those who were team teaching. Master Teachers also reported that they thought the organization of this section was excellent and clearly presented the materials to make them easy to access.

Seeing Reason

- Respondents who are familiar with other causal mapping tools, reported that they liked that the tool was free. (This factor was more or less important depending on whether the teacher's district owned a site license to Inspiration.) However, some respondents said they would miss the outlining and graphics functions that Inspiration offers.
- Respondents who identified their students as "lower-level" said that they could not see using the tool because it is "too advanced" but they said that they knew others within their building who could integrate the tool into their classroom practice. Upon reflection, however, they said that this tool might be a good way to help their students "see" cause-and-effect connections that previously had been hard to explain with words.

Navigation

- Respondents said that the general navigation was clear and getting from one section of the site to another was intuitive and easy to do.
- Some respondents reported that, in the past when they mistakenly had started at the Intel.com main page, they found it very difficult to find the education page. They said it took them many attempts and several links to navigate to the educational area — something, they said, they would like to see Intel remedy.
- Some respondents reported that, despite the redesign, it still is not easy to sign up to be a Participating Teacher. They said that there "should be a choice up front" rather than "three clicks away and at the bottom."

VII. Site Navigation

Using printouts of current and proposed navigation of the Intel Innovation in Education Web site supplied by Intel staff, we asked both Seeing Reason workshop attendees and participants in the overall Web site review to respond.

- Half of the respondents reported that the proposed navigation, because of its emphasis on corporate branding, would deter them and their colleagues from using the site. In particular, they said that colleagues who are less familiar with the web would find the added navigational buttons confusing and would not understand what the connection is between educational resources and buttons, like "Business." As one Master Teacher said, "In my building, I have 25% who are regular computer and Internet users. For the other 75% this would be a turnoff."
- Half of the respondents said that, because Intel is a corporation, it is inevitable that the site would contain reference to product and sales. They said that the state of education is such that teachers have to expect that companies will try "to get something out of their involvement in education."

- Several teachers said that they would be confused by the Advanced Search option at the top of the page. They said that they thought the search was only for educational materials and thought it would be problematic if it included the whole Intel corporate site.

APPENDIX 6

Q2 2002 Web-based Follow-Up Survey

In August 2002, CCT researchers distributed a web-based follow-up survey to a subset of Q2 '20 pop-up survey respondents who had agreed to provide additional feedback. We sent the survey exclusively to educators, filtering out respondents who identified themselves as parents and k-12 students. We focused this survey on three core areas of the Intel Innovation Web site that are devoted to disseminating project based tools and curriculum materials: Exemplary Project Plans, It's a Wild Ride, and Seeing Reason. We also asked brief questions about use of an Innovation Odyssey: Tour of Technology in Education.

We collected survey data from respondents regarding their personal/professional background (are they teachers, curriculum specialists, administrators, etc.), subject area, and how they have used materials in the past school year and how they intend to use these materials in the future. The survey also included questions about classroom practice and professional technology experience. We have found these questions to be very helpful in providing background information about respondents and they also are useful in describing what types of educators are most likely to use technology-based resources.

Of the 1290 educators that received the survey, we received 297 valid responses.

Results

Professional Background

The first question asked respondents to identify themselves. The majority of respondents are classroom teachers (70%, 201). Fourteen percent (41) are school technology coordinators, 6% (17) are district coordinators, 5% (13) are curriculum specialists, 3% are library media specialists, and home school teachers, and district and school administrators make up 1% (4) of total respondents. Thirty-four percent of educators (101) work at the elementary level, 24% (70) are high school teachers, and 22% are middle school teachers. Eleven percent (32) of respondents described working at all levels K-12, and 8% (24) of educators work at the college or university level. Two percent (6) chose none of the above. (n=288)

These educators represented all subject areas. However the largest group (25%, 65) are generalists. Science teachers make up 12% (31) of total respondents, language arts and computer science/engineering teachers comprise 8% (22) and 6% (16) are technology/Industrial arts teachers. Five percent (14) of the total number of respondents are math educators. Subjects such as business (7), health (5) and visual/performing arts (6) make up 2% of all respondents. Ten percent of the total chose the "other" category. (n=296)

The educators who responded to this survey reported using progressive pedagogical practices in their classroom. Seventy-three percent (214) of educators reported using project-based and/or

teacher developed materials (N=297). Additionally, most teachers (79%, 176) reported having many activities going on at the same time (N=296). The majority of teachers also report that their classrooms are student-directed. For example, 78% (237) reported that students inquiries and suggestions often decide what topics to cover in lessons, and 84% (247) of teachers have students review and revise their own work. The majority of teachers (85%, 252) have their students engage in independent and or group activity, and also have student peer review each other's work (73%, 215). (n=296). In addition, the majority of educators (85%, 254) use technology almost daily for work-related tasks such as record-keeping, developing lesson plans and research (N=296). These respondents also reported using technology with their students at least once per month (97%, 285), with 51% (151) of these educators using computers with their students several times per week (N=296).

Use of resources from four areas of the Web site

In this section of the survey we asked respondents to measure the amount of time they had spent using the materials for these sections for the 2001-2002 school year. We also asked respondents whether they expected to use the materials in the upcoming 2002-2003 school year. (n=296)

Seeing Reason

2001-2002 - The majority of respondents (74%, 218) had not used these materials in the 2001-2002 year. This is not surprising given that this section of the Web site was not available to educators until the spring. However 18% (55) of total respondents reported using the tool and related materials at least several times in the year. Of these, 4% (13) have used the tool monthly and an equal number of educators have used Seeing Reason weekly.

2002-2003 - The majority of respondents (75%, 222) reported that they plan to use Seeing Reason at least once as a special project. Of these educators, 38% (85) plan to use these materials several times in the school year, 21% (47) plan to use Seeing Reason monthly and 14% (31) plan to use it weekly.

Use of materials

The survey included a series of questions aimed at determining how and whether educators have used or plan to use the materials either in their classroom and/or with their colleagues. Only 50% of total respondents completed this section of the survey (n=148/146/147). Overall, 45% (66) of respondents plan on basing a whole unit on the Seeing Reason tool and related materials, although a significant minority did not plan to do this (39%, 53). 4% (6) of respondents have already used the materials in this way. (Eight percent responded that this question was not applicable to them). Over 67% (99) of respondents plan on using the materials for a special project, while 4% (6) have already done this. Fifteen percent (22) of respondents did not plan on using the materials in this way. (Fourteen percent responded that this question was not applicable to them). The majority of respondents (66%, 98) plan to use Seeing Reason in an existing lesson plan, 3% (5) have already done this. Almost half (45%, 66) of respondents plan to use Seeing

Reason in a project that they team teach with other teachers and one teacher reported having already done this. (n=146) In addition, 58% (85) of respondents plan to use these materials to implement new assessment strategies (N=146), while 3% (5) reported that they have already done this. (38% of respondents either do not plan to use the materials in this way or this was not applicable to them.) 36% of respondents plan to use these materials in a professional development workshop, 5 educators have already done this, Over half (55%, 82) plan to use Seeing Reason to get other teachers excited to use technology with their students, 7 educators have already done this (n=147). Similarly, 58% (86) plan to show these materials to colleagues in their school; 8 educators have already done this. (N=147)

Educational Value

Almost all the respondents thought that Seeing Reason was useful as a classroom resource. Thirty-three percent (53) thought the Seeing Reason resource was somewhat useful, while 30% (48) reported that it was useful. Twenty-three percent (36) reported that Seeing Reason was a very useful resource. Thirteen percent (21) of all respondents did not find Seeing Reason to be a useful tool for the classroom. (n=157) Similarly educators found Seeing Reason useful as a professional development resource. Thirty-six percent (56) found materials useful, while 26% (41) of educators found them to be somewhat useful. Twenty-four percent (37) thought that the materials were very useful as a professional development resource. Fifteen percent (23) did not think that they materials would be useful for professional development.

Exemplary Project Plans

2001-2002 - Half of the respondents (50%, 147) had not used materials from this section. However the remaining 45%, (132) reported using the materials several times throughout the year. Of these respondents, 20% were using these project plans monthly, weekly, and, 2% of respondents reporting using the project plans daily.

2002-2003 - The majority of respondents (73%, 217) reported they plan to use the project plans at least several times during the next year. Thirty-seven percent (109) expect to use these materials in their classrooms monthly, weekly and 4 (1%) educators reported that they expected to use these lesson plans daily.

Use of materials

The survey included a series of questions aimed at determining how and whether educators have used or plan to use the materials either in their classroom and/or with their colleagues. Approximately 190 respondents answered questions related to this area of the Web site. Overall, 42% (79) respondents plan on basing a whole unit on lesson plan materials from Exemplary Project Plans, and a significant minority have already done this (20%, 38). Thirty percent of respondents do not plan to use the materials in this way. (8% responded that this question was not applicable to them). (n=190) Sixty-three percent (119) of respondents plan on using the materials for a special project, while a significant group of educators (20%, 38) have already done this.

Nine percent (17) of respondents did not plan on using the materials in this way. (Seven percent responded that this question was not applicable to them). (n=188) The majority of respondents (65%, 121) plan to use the Exemplary Project Plans in an existing lesson plan, 24% (45) have already done this (n=186). Significantly, 75% (138) plan to use Exemplary Projects to plan future lessons and 15% (28) have already done so. Almost half (49%, 91) of respondents plan to use lessons from Exemplary Project Plans in a project that they team teach with other teachers and 8% (14) of teachers reported having already done this. (n=185) In addition, 66% (123) of respondents plan to use these materials to implement new assessment strategies, while 11% (21) reported that they have already done this. (n=186), 66% (123) plan to use these plans to help them integrate technology into their curriculum and 22% (41) have already done so. (n=185) Forty-four percent (81) of respondents plan to use these materials in a professional development workshop, 13% (23) educators have already done this. (n=184) 64% (117) plan to use Exemplary Project Plans to get other teachers excited to use technology with their students, 12% (22) of educators have already done this (n=184). Similarly, 66% (122) plan to show these materials to colleagues in their school. Sixteen percent (20) of educators have already done this. (N=185)

Educational Value

Almost all the respondents thought that Exemplary project Plans was useful as a classroom resource. Thirty-nine percent (70) thought that EPP was useful, while 26% (48) reported that they were somewhat useful. The same percentage of reported that EPP was a very useful resource. Nine percent (16) of all respondents did not find EPP to be a useful tool for the classroom. (n=181) Similarly educators found EPP useful as a professional development resource. Thirty-four percent (62) found materials useful, while 31% (56) of educators found them to be very useful. Twenty-four percent (44) thought that the materials were somewhat useful as a professional development resource. 10% (18) did not think that they materials would be useful for professional development. (n=180)

It's a Wild Ride

2001-2002 - The majority of respondents (76%, 225) had not used these materials in the 2001-2002 year. Only 14% (40) reported IAWR at least several times in the year.

2002-2003 - The majority of respondents (68%, 202) reported that they plan to use IAWR at least once as a special project. Of these educators, 33% (66) plan to use these materials several times in the school year, 16% (33) plan to use IAWR monthly and 10% (20) plan to use it weekly.

Use of materials

The survey included a series of questions aimed at determining how and whether educators have used or plan to use the materials either in their classroom and/or with their colleagues. Approximately 106 respondents answered questions related to this area of the Web site. Overall, 40% (42) respondents do not plan on basing a whole unit on the IAWR, although an almost similar percentage (38%, 40) plan to do this. 4% (4) of respondents have already used the materials in

this way. (Eighteen percent responded that this question was not applicable to them).(n=106) Fifty-eight percent (61) of respondents plan on using the materials for a special project, while 9% (9) have already done this. 13% (14) of respondents did not plan on using the materials in this way. (20% responded that this question was not applicable to them).(n=105) The majority of respondents (53%, 56) plan to use IAWR in an existing lesson plan, 9% (10) have already done this. (n=106) A significant minority of (39%, 41) of respondents plan to use IAWR in a project that they team teach with other teachers and 5% (5) of teachers reported having already done this. (n=104) In addition, 50% (51) of respondents plan to use these materials to implement new assessment strategies (N=103), while 5% (5) reported that they have already done this. (45% of respondents either do not plan to use the materials in this way or this was not applicable to them.) 38% (40) of respondents plan to use these materials in a professional development workshop, 10% (10) educators have already done this, (n=104) Over half (53%, 56) plan to use IAWR to get other teachers excited to use technology with their students, 10% (10) educators have already done this (n=105). Similarly, 59% (61) plan to show these materials to colleagues in their school. 8 educators have already done this. (N=104)

Educational Value

Almost all the respondents thought that It's a Wild Ride was useful as a classroom resource. Thirty-four percent (38) thought that IAWR was useful, while 29% (33) reported that they were somewhat useful. Twenty-three percent of educators reported that IAWR was a very useful resource. Fourteen percent (16) of all respondents did not find IAWR to be a useful tool for the classroom. (n=113) Similarly educators found IAWR useful as a professional development resource. Thirty-five percent (39) found materials useful. Twenty-seven percent (30) thought that the materials were somewhat useful as a professional development resource, while 22% (25) of educators found them to be very useful. Sixteen percent (19) did not think that they materials would be useful for professional development. (n=113)

An Innovation Odyssey: Tour of Technology in Education

2001-2002 - The majority of respondents (66%, 196) had not used these materials in the 2001-2002 year. However a significant minority of respondents (27%, 80) reported using the tool and related materials at least several times in the year. Of these educators, 30% (24) plan to use Innovation Odyssey monthly and 13% (10) plan to use it weekly.

2002-2003 - The majority of respondents (80%, 238) reported that they plan to use Innovation Odyssey at least once as a special project. Of these educators, 42% (101) plan to use these materials several times in the school year, 17% (40) plan to use Innovation Odyssey monthly and 11% (25) plan to use it weekly.

APPENDIX 7

Q3 2002 Seeing Reason Electronic Survey

In Q3 2002, CCT researchers mounted an electronic survey on the Seeing Reason landing page of the Intel Innovation in Education Web site to collect data about who is visiting the site and what resources visitors are using. The findings in this report are based on the second electronic survey, which appeared on the Web site from August 1 to September 2, 2002.

The project staff at the Intel Education Web site selected Seeing Reason as an area of focus for Q3 survey following dissemination and training workshops at several education conferences in Spring 2002. The survey appeared on the Seeing Reason landing page (<http://www97.intel.com/scripts-seeingreason/index.asp>).

The survey asked respondents about their role in education, and explored respondents' experience with using causal mapping tools in general and whether they were already familiar with the Seeing Reason tool. We also asked respondents several questions that addressed whether they had used or plan to use the tools and supporting materials and lesson plans in their classrooms or with their colleagues.⁴ Two questions allowed respondents an opportunity to submit open-ended comments, all others were forced-choice questions.

Over the 31 days that the survey was active, there were 135 valid responses. The total number of responses varies from question to question in the summary below.

Top-Level Findings

- Although respondents who visited the Seeing Reason landing page served in a variety of roles, including teachers, students, technology coordinator, professional development specialists, parents, school administrators and library media specialists, the overwhelming majority (68%) were classroom teachers. Of these, 37% teach in high school, 34% in elementary, and 26% in middle school. Three percent of these teachers reported working at the college/university level.
- Although teacher respondents reported that they work in a wide range of disciplines, including Technology, Industrial Arts and Engineering, Science, Language Arts, Math, Social Studies, Health, and Art, the areas represented most often were general education (29%), Science (19%), Technology, Industrial Arts and Engineering (11%) and Language Arts (10%).
- Over 50% of total respondents reported that they had used visual mapping tools before.
- The majority of respondents (72%) reported that their interest in the Web site was to get ideas for their classroom. Additionally, (68%) respondents reported that they came to the site for their own professional development and 40% reported they there to get materials for their colleagues.
- Over half of the survey respondents were repeat visitors (58%). The majority of the respondents

(58%) had visited the Web site at least once, and 37% of all respondents reported using the resources from this site previously. Thirty percent had not used the materials but planned to.

- Over one-third of respondents (40%) reported that they are participants in the Intel Teach to the Future program.
- The majority of respondents reported learning about the Seeing Reason materials while browsing the Intel Innovation in Education Web site. In contrast to our findings from our larger, more summative questionnaire in Q2, only one educator in this cohort learned about Seeing Reason from another educator.
- Sixty percent of all respondents reported that they were willing to participate in further electronic evaluation efforts, having provided their email address at the end of this survey.

Results

Professional Background

The majority of respondents reported that they were classroom teachers (68%, 92). A significant minority of respondents reported that they were school technology coordinators (9%, 12). Curriculum Specialists made up 6% (8) of overall respondents. Four percent (6) of respondents described themselves as district technology coordinators. Home school teachers made up 3% (4), library media specialists, pre-service teachers and school administrators each accounted for 2% of the total. School administrators comprised 1% (28) of the survey respondents. (n=133)

There was an almost even spread among respondents to the question "If you teach, what level?" (n=133). Elementary teachers comprised the largest group making up 34% (46) of the total respondents, with high school teachers making up 32% (43), and middle school teachers accounting for 28% (38) of the total. Over 4% (6) of the total number of respondents reported they were College or University faculty.

Regarding subject area, 32% (39) of respondents reported that they teach all subjects, 20% (25) teach Science. Twelve percent (15) of educators taught Technology, Industrial Arts and Engineering. Slightly over 11% (14) of all respondents reported they were Language Arts teachers. Math teachers (9) comprised 9% of the total. Two percent (2) of respondents were health and physical education teachers and only one teacher taught visual and/or performing arts. Fourteen percent chose "other". (n=123)

Forty Percent (54) of the respondents are participants Intel Teach to the Future and one respondent (.7%) is a participant in the Intel Computer Clubhouse Network. (n=135)

Previous Interaction with Web Site and Seeing Reason

The majority of respondents (59%, 79) reported that they had visited the site before. Of that majority, 21% (28) reported that they had visited the site many times, 19% (26) had visited the site occasionally and 18% (25) reported that they had visited the Web site often. Forty-one per-

cent of respondents had not visited the site before. (n=135) Only 15% of respondents were familiar with the Seeing Reason causal mapping tool and related materials, of those 2% (2) educators have already used the tool in their classroom. Seventeen percent of respondents had not seen the tool and materials but had hear about them, and the majority of respondents (66%, 89) reported that they were unfamiliar with the seeing reason section of the Web site. (n=135)

Prior experience using visual mapping tools

Over 50% (67) of total respondents reported that they had used visual mapping tools before. Of the 38 middle school educators, 66% (25) had used visual mapping tools, 45% (21) of elementary level educators, and 44% (19) of high school educators have used visual mapping tools. (n=135)

Introduction to Seeing Reason

Over 50% (72) of survey respondents reported that they had heard about the Seeing Reason section by following the link while browsing on the Intel Innovation in Education Web site. Six percent (8) found out about the tool and related materials form another Web site and 5% (7) from a magazine or newsletter. (n=135) In contrast to our findings from our larger, more summative questionnaire in Q2, only on educator in this cohort learned about Seeing Reason from another educator. Thirteen percent (16) of total respondents chose other. The majority of these open-ended responses indicated that they found out about Seeing Reason form an email notification from the Center for Children and Technology. These respondents filled out the general pop-up survey in Q2 and agreed to receive our follow up survey distributed in summer, 2002. They found out about Seeing Reason when the survey requested that they review this section prior to answering question related to the tools and materials.

Interest in the Web Site

The majority of respondents (72%, 97) reported that their interest in the Web site was to get ideas for their classroom. Over half (52%, 70) of respondents reported that they also came to the site for their own professional development and (30%,40) reported they there to get materials for their colleagues. A number of respondents (44%, 59) chose more then one response. Twenty-one percent (29) reported they had come to the Intel site to get materials for their own professional development and to get materials and ideas for their students. Four percent (6) reported that they had come to the site to get materials for both their students and their colleagues, and 14% (19) chose all of the options. (n=135)

Value of Web Site Information/Resources

The majority of respondents (60%, 78) reported that they did not have an opinion about the materials at the time of their visit to the Web site. Thirty-seven percent (48) reported that "it looks useful to educators like me." Two percent (3) of respondents reported that it wasn't what they were looking for currently.

Willingness to Participate in Future Data Collection

Sixty percent of all respondents (80) provided their email address in order to receive an email survey in the future (n=135).