
Intel Aprender Chile

Case Study Report

Prepared for the Intel Corporation

Prepared by Denise Sauerteig and Vera Michalchik, with Isabel Obrien
Center for Technology in Learning, SRI International
333 Ravenswood Ave.
Menlo Park, CA 94025

June 2010



• 333 Ravenswood Avenue • Menlo Park, California 94025-3493 • 650.859.2000 •
www.sri.com

Contents

Contents	2
Executive Summary	3
Introduction	5
Country Context and Digital Inclusion Efforts	7
Research Questions and Methods	9
Program Typology	11
Youth Programs in Out-of-school Time.....	11
In-School Classes for Youth.....	11
University Programs	11
Intel Learn for Adults.....	11
Typology of Community Impacts	13
Youth: Empowerment and Connection.....	13
Adults.....	15
Facilitators	19
Communities.....	20
Hallmark story: The Use of Intel Learn for Innovation, Outreach, and Capacity Building in University Communities	23
Keys to Program Success.....	25
Youth Digital Inclusion Program (Inclusión Digital Juvenil or IDJ)	27
Enlaces	28
Conclusion.....	30
References	31
Appendices	33
Appendix A.....	33
Appendix B.....	35
Appendix C.....	37
Appendix D.....	42
Appendix E.....	43



Executive Summary

In April 2010, researchers from SRI International (SRI) conducted site visits in communities throughout Chile to collect data regarding the ways in which the Intel Learn Program has been used and the types of community impacts it has had. SRI researchers worked closely with Laurentzi de Sasia from Intel, Intel Chile's education consultant Mario Lopez, Gisela Hernandez of the implementation agency Corporación El Encuentro, and research partners from the Catholic University of Valparaiso. We visited programs across the country, including those in the cities and towns of Santiago, Quintero, La Serena, Vicuña, Puerto Montt, Talca, and surrounding localities. We met with program facilitators and learners of varied backgrounds and ages, representatives of the Ministry of Education, and school, community, and university partners responsible for the implementation and support of the program.

SRI's case study of the impact of Intel Learn in Chile found, most importantly, that:

1. The program has been adapted to fit a wide variety of social needs and niches.
2. The program has been transformative across contexts not just at the level of individual learning, but also at the level of community impact.

These two findings are highly interrelated. As the program has met the needs of populations ranging from elementary children in school, to university faculty, to adults with minimal education, it has also promoted collective changes in pedagogical vision, community action, and social development. We encountered these types of effects multiple times among the various sites we visited.

Youth programming with Intel Learn in Chile has been far-reaching and impacted children's lives by:

- Empowering them to take on new challenges using digital tools and systematic approaches to create useful products with the tools
- Providing them with distinct and meaningful connections to people and groups with resources to offer.

Adult programming of Intel Learn in Chile has had dramatic impacts on the lives of participants. Adults benefit from new experiences with the kinds of changes they can effect when they have the proper tools, support, and structure; they also benefit from the connections and new community bonds that they form. Adults we spoke with were committed to using their Intel Learn experiences for:

- Developing personal tools for microenterprises and other practical benefits
- Enacting social change in their communities and better addressing the needs of their families.

Impacts of the Intel Learn course extend to facilitators, as well, many of whom experienced profound personal changes as a result of their participation in the course. Our findings indicate that, because of the program, facilitators for Intel Learn in Chile become:

- Deeply engaged in providing service to the greater community
- Experienced in both learning and teaching with nontraditional pedagogy.

The program is supporting community change by:

- Promoting gains in human capital that readily translate into new capacities and improvements in the community
- Instilling appreciation of and interest in community service
- Benefiting from the combined effects of the participation of many people from the same community in capacity-building experiences.

- Supporting connections to networks of helpful people, useful organizations, and valuable information
- Creating linkages across communities and organizations, helping them grow and succeed
- Contributing to the infrastructure for modernizing Chile in the digital age, thereby creating powerful societal impacts.

Both contextual and strategic factors have made the Intel Learn Program highly successful in Chile. Contextually, since the 1990s Chile has undertaken a major Information and Communication Technology (ICT) initiative, Enlaces (Links), that leverages support from the Ministry of Education with other governmental and social development initiatives. Much of the Intel Learn Program implementation has occurred in conjunction with Enlaces. At the same time, Intel Chile and Corporación El Encuentro have developed strategic partnerships in addition to Enlaces for use in adapting the program, while maintaining its essential core features, to a wider variety of niches in which it can function well. The strategic approach has entailed considering fit and potential impacts in multiple new geographical and programmatic areas, piloting Intel Learn in those areas, and adjusting implementation on the basis of the pilot results. The nimbleness of this approach has made it possible to use Intel Learn in Chile effectively across a wide range of environments: afterschool for low-income students boarding at regional high schools, summer camps for hearing and speech impaired children, university orientation for new students, housing communities for teens in families that were previously homeless, adult basic literacy programs, and even a therapeutic program for adults from a recently dismantled cult.

Introduction

The Intel® Learn Program was originally designed to bring hands-on, computer-based learning activities to young people ages 8 to 16 in informal, community technology settings throughout the world. Typically consisting of two sequential 30-hour modules, *Technology and Community* and *Technology at Work*, the Intel Learn approach emphasizes the development of useful skills and the linkages between program activities and children’s life experiences and outcomes. The curriculum has traditionally targeted communities that have limited access to technology in homes and schools, thus serving children of a variety of cultural and socioeconomic backgrounds who would be unlikely to otherwise have the types of opportunities the program provides. As a program for improving the knowledge and skills of individual participants, Intel Learn has had three primary educational goals:

- Promoting technology literacy
- Increasing critical thinking capabilities
- Supporting the development of collaboration skills.

The program’s pedagogy, which represents a shift from the didactic “transmission” models of teaching, stresses the following approaches: *thematic instruction, problem identification and solution, relevance to learners’ lives, active exploration, choice and autonomy, cycles of creation, collaboration and communication, authentic feedback, the teacher as facilitator, and the use of 21st-century tools.*¹ These approaches are the program’s essential core features and make Intel Learn what it is. As has been shown in past evaluations of the program worldwide, it is the shift to a child-centered approach to that has made the Intel Learn model so powerful in other countries (Michalchik, Sussex, & Gorges, 2007).

First launched as a small afterschool program in 2006, the Intel Learn Program in Chile has expanded to reach almost 25,000 youth and adult participants in municipalities and regions throughout the country, with over 2,000 facilitators trained. In April of 2010, researchers from SRI International (SRI) conducted site visits in communities throughout Chile to document the ways in which the program has developed and the types of impacts it has had on the *communities* where it has been implemented—looking beyond individual learning outcomes to the program’s effect on life outcomes of participants and their families, their neighborhoods, and other collective groups that Intel Learn has served.

Before conducting the study, we participated in teleconferences with program leaders who apprised us of the history and current scope of the Intel Learn Program in Chile. On the basis of that information, we determined that conducting a case study of Intel Learn in the country would allow us to document community impacts across a wide diversity of program types, participants, and facilitators. SRI researchers worked closely with Laurentzi de Sasia from Intel, Intel’s project advisor Mario Lopez, Gisela Hernandez of the implementation agency Corporación El Encuentro, research partners from the Catholic University of Valparaiso (la Pontificia Universidad Católica de Valparaiso), and several regional program directors to collect and interpret data before, during, and after our time in Chile. For the trip, our Chilean collaborators arranged for visits around the country with as broad and representative sample of individuals and programs as possible—including in districts of Santiago and the municipalities and surrounding regions of Quintero, La Serena, Vicuña, Puerto Montt, and Talca. We met with program facilitators and learners of varied backgrounds and ages, and also with the Ministry of Education (el Ministerio de Educación de Chile—Mineduc), school, community, and university partners responsible for the implementation and support of the program. Appendix C sets forth our schedule during our visit the week of April 12-16.

Although the SRI research team stayed in Chile for only 1 week, because we received such strong support from the Chilean implementation team—from detailed background information months in advance of our

¹ For more detail, see Appendix A.

trip to comments on versions of this report—we were able to document many of the ways in which the program has evolved from an afterschool technology offering for youth to one that is enriching the lives of people of many ages and backgrounds in a variety of ways. This report presents highlights of the Chilean model for implementing the Intel Learn Program, and draws connections between Chile’s strategies of implementation and the rich and varied impacts our findings have documented.

Country Context and Digital Inclusion Efforts

A country of 17 million people, Chile has a relatively strong economy and, after a period of military dictatorship in the 1970s and 1980s, has had a stable democracy. Since the early 1990s, the Chilean government has endeavored to increase access to technology through a wide variety of initiatives aimed at building technological infrastructure and supporting individuals and business in successfully making use of the Internet. The Digital Agenda (la Estrategia Digital) initiative of 2004, for example, emphasized attracting foreign investment into the country's information technology sector. The recently launched Mobile Cities (Móviles Municipales) program, like various others, provides individuals access to digital technology to efficiently conduct their administrative affairs, in this case by operating four buses that act as mobile technology centers throughout the districts of Santiago (<http://www.estacioncentral.cl>). One of the longest term and most far-reaching national initiatives is the Mineduc's Links (Enlaces) program begun in 1992 which provides schools nationwide with computers and technology-related curricula, and more recently, has added outreach to offer computer training to adults in impoverished and marginalized areas.

As a result of these efforts, Chile has made progress toward digital inclusion, with many poorer and rural children benefiting from access to computer technology in their schools and the digital divide narrowing among adults. For example, when Enlaces was launched, the ratio of students to computers was 1:80; today, the ratio is 1:10, and 75% of schools are connected to the Internet (Gaete, 2010). Nonetheless, as of January 2009, only 40.6% of the Chilean population had any type of regular Internet access (Gobierno de Chile, 2009), and, although Chile is a leader among Latin American countries, it lags in comparison to the developed world. Moreover, as in other countries, Chileans' access to technological tools varies markedly with their economic status, and importantly, the productive use of digital technologies within the country is highly uneven. A 2006 report from the United Nations Development Program noted that although Chile has a high rate of digital technology penetration... "utilization to broaden individual and group capabilities is still limited. Beyond certain rather basic applications, the full benefits for human development of the extended technological platform which the country already possesses are not sufficiently exploited" (UNDP, 2006: 2)

As we know, using technology effectively for educational, creative, or other purposes does not simply depend on access or connectivity. Supports for *learning* how to use digital tools have been shown to be critical in increasing digital inclusion (Kozma, 2008; Michalchik et al., 2006). At the same time, learning how to use technology, like learning any tool, occurs most effectively when addressing real problems or when creating real products. Moreover, learning occurs on a foundation of existing experiences (Gutierrez & Rogoff, 2003); creating a bridge of prior and new knowledge, while creating possibilities for further development and application of this knowledge, is the hallmark of an effectively designed learning environment (Bransford et al., 2006). The Intel Learn Program fits squarely within these criteria: promoting the development of new technological skills in service to broader goals that connect to real-world issues and future possibilities for action (Michalchik, Sussex, & Gorges, 2007). During our visit to Chile, participants, facilitators, and program managers repeatedly indicated that the Intel Learn Program works by promoting collaborative focus on attaining an important goal, for which technology is just a tool—or, as one contributor stated it, “the beauty of the course is that you learn about productivity tools without even knowing it.”

To assess the level of the technology experience of Intel Learn Program participants in Chile and to understand the impact of the program on their lives better, we distributed an online survey to Intel Learn participants before our visit.² We received responses from 292 youth alumni of an Intel Learn summer camp and from 31 Intel Learn facilitators throughout Chile. We found that most of the youth had used computers before taking the program, but only for social networking and instant messaging; they had little

² Support of the local implementation team made this aspect of our data collection possible.

to no experience with productivity software such as word processors or spreadsheets. Only 28% of youth reported having computers in their homes, and of those who did, 13%—fewer than half—had home internet connectivity. More than 60% of youth participants relied on cybercafés for access to digital technology, in contrast to the 25% of students who accessed computers in school. Nearly all of the youth (more than 90%) who used computers at school did so for less than 2 hours per week. These survey data, we found, were representative of the youth participants we met across the country during our visit: few had computers or connectivity at home, and they had little opportunity to use computers for longer periods at school. Additionally, before participating in the Intel Learn Program, they had had little idea of what to do with computers other than socialize.

Research Questions and Methods

The primary purpose of our case study has been to investigate the community impacts of the Intel Learn Program in Chile, which is currently in its fifth year. Because this type of research has not previously been conducted in relation to the Intel Learn Program, we approached the site visit with a purposely broad, open-ended, and interrelated set of research questions that aligned with the exploratory nature of the research. In developing research questions, we relied on a set of concepts and themes based on our knowledge of the Intel Learn Program. Appendix B provides a chart of these concepts and themes.

The research questions that informed our approach included the following:

- What are the short- and long-term impacts on learners of Intel Learn?
- Which members of the community, outside of the learners themselves, are impacted, and how?
- How is the community as a whole impacted as a result of Intel Learn?
- What are the impacts on facilitators, both professionally and personally?
- Does the “new pedagogy” impact facilitators and learners outside the Intel Learn classroom? If so, how?
- Do learners take on new roles in the community after participating in the program? If so, how?
- Do learners gain a different sense of their role/agency in the community as a result of Intel Learn? If so, how does that change manifest itself in their lives?
- Does the community service aspect of Intel Learn impact learners’ or facilitators’ relationships with their communities? Does their interest in other community activities change?
- Does gaining digital literacy help learners communicate and access resources online to create new, positive life outcomes?
- Does the gain in digital literacy affect learners’ ability to navigate among online communities?
- Do relationships change across facilitators, administrators, learners, and their families as a result of Intel Learn? If so, how?
- How do stakeholders view the program? Do stakeholders’ relationships in their professional communities change as a result of administering Intel Learn? If so, how?
- Does the value to the community of the facility or space in which Intel Learn is conducted shift after holding Intel Learn courses? If so, how?

We relied on questions such as these in preparing the interview and observation guides that we used for data collection, which took place within the methodological framework of *rapid ethnography*. Rapid ethnography takes its basic research methods from classic ethnography, but applies them within a time-constrained evaluation context. In the rapid ethnographic approach, members of the community are studied even as the study is being framed. Thus the approach capitalizes on the knowledge and capabilities of collaborative teams, including local specialists and insiders in the field, and on the use of local teams for data collection and interpretation of findings. This approach is iterative: the preliminary data gathered is then used to help guide subsequent decisions about additional data collection in the field.

Working within this framework, we spent significant time gathering data before entering the field. We held extended discussions with the Chilean Intel Learn team, read all materials available about the program (including several reports and data from annual internal evaluations of Intel Learn Chile), and familiarized ourselves with the landscape of Information and Communication Technology (ICT) educational interventions in Chile over the past two decades. We also administered surveys (using

SurveyMonkey™, an online survey administration tool) to youth alumni and facilitators of the summer camp program to gather background information. As mentioned, 292 learners and 31 facilitators completed our surveys.

On arriving in Santiago, we spent most of our first day in a briefing session with the local team and Enlaces staff from the Mineduc. These briefings were essential to our understanding of the history and structure of the Intel Learn Program as it has evolved in relation to other initiatives and social contexts in the country. The depth and breadth of information shared by the Chilean team and Mineduc staff shaped our visits to schools, universities, and community centers. Importantly, we were able to visit each site with members of the local team, which greatly enhanced the efficacy of our efforts and allowed the U.S. researchers and local team to function as full collaborators.

In the field, SRI researchers generated more than 200 pages of field notes based on discussions and observations across the dozen or so sites visited. We conducted semistructured interviews with learners, facilitators, parents, administrators, and researchers affiliated with the program, and audio-taped several of those interviews.³ For the most part, group interviews were held, often following recent program participants' presentations of their final projects. Denise Sauerteig and Laurentzi de Sasía provided the majority of the translation, taking care to ensure that as much cultural and linguistic nuance was captured as possible.

³ For sample interview protocol instruments, see Appendix C.

Program Typology

Intel Learn programming in Chile has developed during the 5 years of its implementation from an informal program for rural youth boarding at high schools to an offering for broad age ranges in a wide array of contexts—including adult education programs, vocational training, and university orientations and curricula. We identified four major types of Intel Learn programming in Chile: (1) out-of-school youth programs, (2) in-school youth programs, (3) specialized university trainings for preservice education students, and (4) adult education, either as a stand-alone offering or as a supplement to more comprehensive adult vocational programs.

Youth Programs in Out-of-school Time

The out-of-school implementation of the Intel Learn Program follows the original program design and curriculum. These programs are typically held in school buildings after school, on weekends, or in the summer and are sponsored by many different funding and support sources. Facilitators for these programs include schoolteachers, adult volunteers, university students, and high school students (working with elementary students). The program has been adopted for use in technology programs offered outside of school time because, as one project leader said, it includes “the best mix of fun and structure for learning.” One interesting adaptation of the Intel Learn programming was a summer camp serving hearing and speech impaired children. Recognizing the responsiveness of Corporación El Encuentro to the needs of the community, an Intel Learn facilitator whose daughter is hearing and speech impaired proposed adapting the program for her and her classmates.

In-School Classes for Youth

The success of Intel Learn in out-of-school time has motivated in-school implementations. These include: (1) mandatory and elective courses offered at boarding schools throughout the country, originally supported by the Mineduc’s Enlaces initiative and now continuing only with local funding, (2) in the municipalities of Alto Hospicio and Vicuña, locally funded programming for public high school and elementary students (with high school students as facilitators) overseen by Corporación El Encuentro, and (3) at two schools in Puerto Montt, technology teachers offered their morning class time to the university student facilitators to implement Intel Learn, providing additional support to the facilitators and the programmatic efforts in the locality overall.

University Programs

A particularly valuable and adaptive use of Intel Learn in Chile has been as specialized programming for undergraduates at universities around the country. Universities are using the program to provide incoming preservice teachers with experience in progressive, student-centered pedagogy and 21st-century skills to lay a solid foundation for the rest of their higher education. For many students, the Intel Learn Program serves as the main focus of their orientation when they arrive for their first year. In some cases, students who participate in Intel Learn serve as facilitators with youth in the area; in other cases, preservice teachers’ participation in the program serves as a basis for learning how to incorporate technology and new pedagogies in classroom teaching. We visited two of the universities that use Intel Learn: one in Puerto Montt, where university students facilitated the program with local primary schools, and the second in Talca, where faculty as well are taking the program to become familiar with the Intel Learn pedagogy and tools. A subsequent section describes those visits in detail.

Intel Learn for Adults

Through Mineduc’s Enlaces initiative, Intel Learn is offered to adults as part of programming available to the public; the shortened version of the traditional format—18 hours for each of the 2 Intel Learn units instead of 30, preceded by two additional 18-hour units on computer fundamentals—provides adults with basic technological skills and literacy. The shortened versions of the course have removed some content

deemed less-relevant, such as the nursing unit in *Technology at Work*. The program is typically implemented at school sites that also offer Intel Learn to children. Piloted in 2008, the program had more than 8,200 participants in 2009, after pilot study results showed that more than 95% of the participants rated the program very highly and would want to continue taking additional Intel Learn courses. Intel Learn has also been successfully incorporated into adult vocational programs, typically delivered in community centers by municipal agencies or nonprofits administering state and federal vocational programs. A 100-hour, business-oriented course, Technology, Accounting and Work (Tecnología, Contabilidad y Trabajo), sponsored by Chile's national job retraining agency (National Service for Training and Employment [Servicio Nacional de Capacitación y Empleo—SENCE]), includes basic digital literacy training, 30-hour versions of both Intel Learn units, and additional accounting content. A stand-alone version of the course using an unmodified curriculum was implemented by the Catholic University of Maule (Universidad Católica del Maule) with adults at Villa Baviera, who, as discussed in detail on p.19, below, had recently been freed from a highly restrictive and repressive cult to rejoin Chilean society. Other unmodified versions of the program have also been included in literacy training for the elderly and offerings for adult small business entrepreneurs.

Typology of Community Impacts

The previous section, which described the types of Intel Learn programs being implemented in Chile, focused on the target participants and indicated the impacts intended. This section elaborates on those impacts by discussing how Intel Learn programs have affected participants' lives. We emphasize that this case study centered on the more socially meaningful *community* changes that can reasonably be attributed to the program, and gave less emphasis to the more cognitive outcomes (e.g., higher order thinking, knowledge of specific computer skills⁴). Thus, the study was about changes in the lives of youth, adults, facilitators, and communities—both as participants during and after the Intel Learn courses and as they continued to take advantage of the new relationships and opportunities the course afforded them. In determining the degree of youth empowerment to act in their communities and whether a shift in the culture or practice of a community group occurred, we viewed these phenomena—changes in individuals and collectives—as going hand in hand.

Youth: Empowerment and Connection

Youth programming with Intel Learn in Chile has:

- Empowered children to take on new challenges in using digital tools and to use systematic approaches to creating useful products with these tools
- Provided youth with meaningful connections to people and groups with resources to offer.

The Intel Learn program empowers youth by helping them develop the ability to use productivity tools meaningfully in their coursework and personal lives (Kozma, 2008; Michalchik et al., 2007). Youth from most social strata in Chile typically have at least some experience with computers, and many have regular access to digital technology, albeit to a limited extent. Even in the poorest communities, children have worked with a computer at school or in a cybercafé and learned its basic functions; most have been online to search the Internet or to use chat or social networking applications. However, most program participants have not employed computers to create content and products that they can use both in and out of school. Furthermore, they have had little to no experience with student-centered pedagogies. Intel Learn provides both the time and space, as well as a collaborative and productive working structure, to help youth develop their own ideas about how to improve their community. Being given the resources and support to engage with others to solve real problems appears to be a unique opportunity for most youth, and contrasts with other training and educational programs in their lives.

To provide an example of youth empowerment through the program, the first phases of implementation of Intel Learn in Chile took place during afterschool hours for students in boarding schools. Boarding school children in Chile typically come from poor rural areas at some distance from the school and lack the means for daily transportation to and from school. Because they are poor and live away from home at the school sites, they are often the object of ridicule and marginalization by their nonboarding schoolmates. Several young secondary students who boarded at a school in central Chile in the first year of the program teamed up to create a final project about building a meditative and peaceful prayer space on their school grounds. At that time, through the Mineduc Youth Digital Inclusion program (Inclusión Digital Juvenil, or IDJ), students completing their final projects were eligible to receive the equivalent of US\$200. Those students built the meditation space they wanted with these monies and spoke of the value of collectively setting a goal and then receiving the resources to achieve it. Similarly, in the southern city of Puerto Montt, where it rains often and students' belongings are subject to getting wet, participants in the program

⁴ For a study that emphasizes evidence for these more individually centered outcomes see Michalchik, Sussex, & Gorges, 2007. In Chile, a research team at the Catholic University of Valparaiso has been working on developing measures to identify potential differences in cognitive outcomes between Intel Learn students and other students who have not taken the program (Centro Costadigital Team, 2009a; Centro Costadigital Team, 2009b).

developed a detailed plan for installing lockers in their school—which the administration then used when it installed lockers as part of a separate facilities improvement initiative. Student projects advocating additional bathrooms and changing areas also have influenced facilities planning at their schools. The life skills these children have developed from these experiences are, participants and facilitators feel, valuable far beyond the walls of the classroom where they participated in the course.

In one interesting, albeit atypical, case, 10th-grade students at a boarding school in an especially poor, rural community who were enrolled in the program in its early stages found themselves with a facilitator ill-suited to the task. The students viewed the program as an opportunity to develop their voices and become empowered; the facilitator appeared to be a traditionalist not interested in supporting student collaboration, autonomy, or choice. When it became clear that the facilitator would not change his ways, preferring to resign rather than run the program differently, the youth petitioned the head of the boarding school facility to allow them to run the course themselves—which they did quite successfully and in contrast to expectations by program leaders. Furthermore, the students subsequently ran the program for others at their school site. Although this example is not representative of Intel Learn facilitators in Chile, it serves to highlight the flexibility, simplicity, and appeal of the program. It also illustrates the appropriateness and value that can come from trusting in local decisions for providing the program as a resource for youth to use in their authentically motivated learning and development.

Connections to others have been facilitated through the collaborative nature of the program's projects and relationships with facilitators and other supporters. Youth mentor one another, sometimes within their own peer groups and sometimes across ages and community boundaries. For example, to implement a program targeting homeless teenagers, university students were used as facilitators because they came from outside the immediate community and were thus able to serve as role models and conduits to the world of academic and personal success. The program has become a bridge between children and adults in several communities, as in cases where children serve as assistants and tutors in adult programs (see the discussion of Quintero, below). These experiences have added to children's sense of efficacy and to opportunities they have to effect changes through helping others. The course has also affected communities by connecting new regional universities with elementary and secondary students and their families in the universities' catchment areas.

These multiage and cross-community connections have created powerful and enduring mentoring relationships that have increased the opportunities available to youth.

Improving the Lives of Underprivileged Youth in Puerto Montt

The Intel Learn Program has reached more than 500 youth between the ages of 11 and 15 in Puerto Montt, a small port city in the scenic Lake Region of southern Chile. The program's positive effects were apparent during our visit to area schools as children excitedly shared stories about their time in the course, their final projects, and their friendships with facilitators, who are first-year university students in the Department of Physical Education Sciences from the University of Los Lagos.

When asked how this program differed from the school's computer classes, students answered with comments like the following:

I learned more deeply and a lot more.

We didn't move on to the next thing until the whole class knew what was going on.

We loved working in groups, even though sometimes it was hard.

I like the facilitators a lot because they were patient in going through the lessons.

Students in the program were quick to point out differences between the type of education they had received in some of their courses—didactic, rote, memorization based—and the dynamic, student-centered approach in Intel Learn. Although held in school computer labs, but after school hours, the program nonetheless differed from their typical school classes. More than anything, the program encouraged these youth to develop ideas and content related to their own communities and interests. Course projects ranged from advocacy of simple physical improvements at the children’s school, to ways of caring for stray animals, to consideration of means for combating domestic violence and drug and alcohol abuse. The children noted how helpful the program had been for their schoolwork, and they showed great enthusiasm for extending what they had learned to blogs and Web pages about social issues that mattered to them and around which they could build shared interest communities—a powerful model for deepening children’s engagement in learning activities and technological skills (Ito et al., 2008).

Youth also repeatedly stressed how much they liked the facilitators personally, in addition to how exciting and interesting they found their teaching style. The relationships built between the facilitators and these underserved youth provided clear role models for educational attainment and possibility, potentially shaping the youths’ expectations for what they, too, can achieve (Holland & Farmer-Hinton, 2009; Martinez & Klopott, 2002). Many facilitators we spoke with noted that they continue to communicate with the children they have taught, answering questions about computers or academic work; the facilitators also felt it likely that these relationships will continue over time. One facilitator’s comments reflected others’ comments regarding their experiences with teaching the course:

The recognition and love the kids have given me is what I have enjoyed the most.

Studies of resilience and youth development shows that these kind of external resources can have significant positive effects in helping at-risk youth overcome obstacles to higher education (Botrell, 2009). These studies also point to the acquisition of problem-solving skills and the development of intellectual capacities as factors that improve youth outcomes, both of which the Intel Learn Program works to strengthen (Unger, 2009).

Adults

Adult programming of Intel Learn in Chile has dramatically affected the lives of participants. As with youth, adults have benefited through introduction to the kinds of changes they can effect with the proper tools, support, and structure; they have also benefited from the new connections and community bonds they have formed. Adults we spoke with were committed to using their Intel Learn experiences for:

- Developing personal tools for microenterprises and other practical benefits
- Enacting social change in their communities and addressing the needs of their families better.

In the town of Quintero, parents taking the course at the Colegio Polivalente Don Orione have focused on *Technology at Work*, using the entrepreneurial unit to develop ideas and plans for businesses. Several of the parents showed us the business plans they had created in the course and described their results, which included home printing, cleaning, and laundering businesses they had launched, run, and publicized using digital tools. Two women with printing businesses showed us what they have made, noting how the course had taught them to create invitations, birth and death announcements, and other keepsakes marking major life events. For all the adults in the course, their new endeavors represented both sources of income and dramatic changes in their feelings about their life opportunities. They offered comments such as the following:

Coming to this class has opened the doors of technology to me... It has opened a whole new world.

The course offers dreams and opportunities along with a rebirth.

You build your own environment, so if you have the desire and motivation, you can achieve anything.

The course makes you work with your creativity. Adults have forgotten how to dream and they need to move into new realms, putting their imagination into the course.

In the low-income commune of La Pintana in the Santiago Metropolitan Region, we spoke with a man who had enrolled in a 100-hour vocational program offered by the commune that included basic technology training, the two Intel Learn courses, and an additional course in accounting. He completed the courses in 1 month. Before taking the courses, this man had been laid off from this job of 22 years; although his computer knowledge consisted only of minimal familiarity with Excel, he wanted to open his own cybercafé. His course projects consisted of creating a business plan and researching and assembling all the information needed to start his business. After completing the course, he purchased three second-hand computers with his modest severance package and started a cybercafé in his garage. Now, together with his wife, he has a growing business with 12 computers and a strong customer base of local students. The skills he learned have also helped him in teaching his young customers informally, as well as his wife, how to use word processing and spreadsheet applications better.

Related to these practical impacts are ones that simply save people time and money. Throughout Chile, we saw examples of people using the computer to communicate with friends and relatives, gather information, and conduct simple business transactions. One of the most potent examples we encountered was an elderly woman in La Serena, who went through the *Technology and Community* program and created a project focused on community gardening with her peers. Her personal history included a long-term career as a housecleaner with a maid service, and since she had become unable to keep up with the physical demands of the job, she was assigned the duty of keeping track of the hours worked by the housecleaners employed by her company and reporting that information to the company's payroll office. Previously, she had had to spend a full day hand in delivering a piece of paper with the hours worked to Coquimbo, traveling by bus around the bay from La Serena. The Intel Learn experience helped her become proficient on the computer enough so that she was able to save a day's work simply by emailing the information to the payroll office. The effect on her life was so dramatic that she purchased a wireless 3G modem for US\$60, but she had not realized that she would have to pay monthly service fees to maintain connectivity, a potentially useful issue for future courses to address.

As noted, the program in La Serena focused on *Technology and Community*, with the emphasis on participants' direct service to the community rather than on their development of new capacities to improve their own lives. As part of the Enlaces program the University of La Serena offered, adults attended 72-hour program sessions lasting 3 hours per meeting 3 nights a week for almost 2 months. Together, the attendees developed plans for community action that in many cases they have been able to bring to fruition, such as creating a folkloric dance troupe for children to preserve regional culture,

running a cybercafé for the elderly with mentoring support for using technology, and creating a greenhouse gardening project for urban teens. The teams have used technology to develop their plans, collect relevant information, manage and implement their projects, and document what they have accomplished. For the folkloric troupe, the documentation has contributed to cultural preservation, because the dances they have recreated have now been posted on YouTube. They are also using technology to search for funding for their projects, accessing, for example, a Web site compiled by a non-profit that lists grant opportunities for community action projects. The collaborative teams that have undertaken each of the projects originating in the class have persisted in implementing their projects; moreover, the bonds of friendship they formed also continue. Regarding the group's final presentations, one participant said:

When they presented these PowerPoints, you should have heard the applause and enthusiasm. Learning and helping each other was really heartwarming and charming.

As another participant expressed:

I feel secure now. I have experienced personal growth and developed a deeper relationship with other parents when before it was superficial. Then we became a community and were concerned about one another, and that relationship has been growing

In some communities, adult programs have a synergy with youth programming, as parents of children in the program enter a similar and parallel program for adults. That was the case in the small town of Vicuña, where teachers of children in the high school who were implementing Intel Learn offered their services to instruct the same children's parents in the evening. This school has endeavored to become a digital resource hub for children and their families in the region, with free wireless access available to anyone wishing to visit the school. The adult programming has been so successful with the children's parents that it is being extended to other adults, even those with minimal literacy. Teachers in Vicuña note that they have added an Intel Learn component to their basic literacy outreach, citing, remarkably, that some of the elderly in their programs who recently learned reading and writing skills have parlayed those skills into creating such things as cookbooks of treasured recipes that they have distributed to others in the community.

Adults who have participated in Intel Learn often spoke of finally being able to help their children with homework, communicating with them online, and understanding what they were doing with technology. Parents indicated that they had felt that the digital divide was not only a function of economic lines, but generational ones as well. The ability parents acquired to monitor and assist their children in the world of digital technology has proved a major benefit to parents, families, and communities. As one parent said: *"Now we can help our children because we speak the same language as they do."*

Assistance flows both ways: at Quintero's Colegio Polivalente Don Orione, youth from the Intel Learn program spend several hours a week with their parents and other adults assisting them in their evening classes, and learning life skills and values that improve the quality of the community. Many parents spoke of how difficult it was for their children to have the patience to teach them about computers in private settings. But the situation is much different as a result of the framework of students who are engaging in community service by helping adults as part of the Intel Learn Program.

A taxi driver related a humorous story related to his Intel Learn experience. He, like so many other adult participants, sheepishly signed up for the course, feeling presumptuous and foolish for thinking he could learn how to use computers: *"You arrive shy and ashamed of yourself, thinking you're the only one that doesn't know, but then you see that there others are also thinking, 'I'm going to break the computer and have to pay for it.'"* He mentioned that his fellow cabbies ridiculed him when he told them about the Intel Learn classes. But he explained his life has changed in so many ways since learning about computers: for one thing, he used to tell his children it was time to get offline and do homework, and believed them when they told him that it took 3 hours to turn the computer off. Now he knows it's simply a matter of clicking

one button, and his children can no longer get away with the extra time spent playing games. He indicated his fellow cabbies had become envious, and now wanted to sign up for Intel Learn themselves.

The primary contributions of the course, in the adult participants' view, are not technological skills per se, as much as the *methods* learned, a view echoed by the facilitators running the program in both Quintero and La Serena. The methods used in the course, in which learners work collaboratively to define problems or challenges that matter to them and potential ways to address the problems, serve to change participants' experience of themselves as learners and to empower them as agents for setting and accomplishing their goals. The adults in both Quintero and La Serena spoke of being able to realize dreams, to understand their own power, and to have the social and community support to do things that they never thought possible to do, ranging from the significant—new business and career possibilities, and the creation of new public service organizations—to smaller personal achievements. Together, these large and small impacts are changing the lives of the adults participating in the program in Chile.

Villa Baviera

In one distinctive case, participants attributed the transformation of an entire community to the project development cycle built into Intel Learn—plan, do, review, share. We visited Villa Baviera—formerly, an isolated and cult-like German commune with an exceptionally dark history. Before the Chilean government dismantled the commune in 2005, its members were abused, oppressed, forcibly shielded from modern life, and segregated from the Chilean society around them. For almost 50 years, residents of Villa Baviera had had little agency in making their own decisions. Dissenting opinions were not tolerated. The commune’s leader ordered that men and women be separated, that people work alone in their jobs, and that they speak German exclusively. Various types of abuses were prevalent.

Shortly after being “freed,” several of the adult members took the Technology and Community course as designed for youth, preceded by a few basic lessons on technology, such as how to turn on the computer and maneuver the mouse. The adults who had stayed in the community indicated that they wanted nothing more than to be accepted by Chileans—to be free as were other Chileans to live their lives as they wished and to be perceived of as normal, friendly compatriots. They also needed new sources of income to sustain the community and were developing the basis for bringing tourists to their rural wooded area. The adults who participated in the Intel Learn course had had no exposure to digital technology and were just beginning to learn Spanish when they took the course.

Several of the participants discussed how significant it was to work collaboratively and to develop their own agency in sharing their opinions and ideas for final projects—experiences new for them. They presented their final projects to us with exuberance, addressing topics such as changing others’ perceptions of them, building single-family homes to be able to live with their spouses, and developing small business opportunities such as selling herbal tinctures and medicinal plants. The course structure for developing a final project and following specific steps to complete it was transformative for this community, given its members had not had the opportunity to do something like this previously. Even though they had taken the *Technology and Community* course 2 years before our visit, participants repeatedly referred to the project planning aspect of the course as having notable long-term impacts, especially as residents of Villa Baviera continued to work on learning how to take control of their lives as adults.

Facilitators

Impacts of the Intel Learn course extend to facilitators, as well, many of whom have experienced profound personal changes as a result of their participation in the course. Our findings indicate that, because of the program, facilitators for Intel Learn in Chile have become:

- Deeply engaged in providing service to the greater community

- Experienced in both learning and teaching with nontraditional pedagogy.

For the most part, the Chilean implementation team has kept program costs low by enlisting volunteer facilitators, as opposed to hiring full- or part-time facilitators as has been the case in other countries such as Mexico. Many volunteer facilitators are university students who participate as part of an internship program. Other facilitators include individuals working at social service/vocational training programs, faculty members from universities, schoolteachers, and, in one case, high school students. The university students we spoke with indicated that the two main effects that facilitation for them have been the gift of community service and experience in teaching students with a nontraditional pedagogy. Working with lower income children in the community, helping them learn, and ultimately helping them create their final project has proved to be a powerful experience for these facilitators. Although many first-year university students stated that they were nervous to act as facilitators so early in their academic careers, the format of the facilitation guide with its easy-to-understand activities and room for the enthusiasm and individuality of the facilitator has eased the process.

University faculty indicated that nontraditional pedagogy and the use of technology in the classroom are both powerful touchstones for potentially reforming their practice. Being able to incorporate technology in their professional lives was especially significant for faculty at the Catholic University of Maule who were older and more traditional in their approach. Experience with the Intel Learn pedagogy also had a powerful impact on faculty members. Faculty members spoke of the connections with the community that come from the program—whether via university student internships at local schools or through their own facilitation experiences at local schools and with adults in their communities. The Intel Learn program has allowed entire departments of education to transform and modernize their teaching practices and philosophies; in teaching and training students, who are the teachers of tomorrow, they now give stress to 21st-century learning skills, teachers as facilitators, and technology in the classroom. The program has helped create new relationships between faculty and their university students; young adults and children; faculty and less-educated adults; and faculty and schools. This forging of sustainable relationships of service across social groups and ages is also having a powerful community impact.

Communities

Studying community impacts is generally more difficult than studying change in individuals because (1) a longer time scale is often needed for broader impacts to occur; and (2) tracing causes for change at the social level involves greater complexity. Nonetheless, even within the constraints under which this case study was conducted, the ethnographic data we have analyzed present plausible means for and indicators of how the program has effected and is continuing to support community change.

Most obviously, the program promotes **gains in human capital** that readily translate into new capacities in the community and therefore serve to improve it. Facilitators trained in the program acquire useful pedagogical skills. Learners, both young and old, develop 21st-century literacies: with digital tools, collaborative processes, analytic approaches to problems, creation of meaningful content, and validation of their personal agency. Program participants often go on to teach others what they have learned; parents help their children create products for school and, more often, children informally teach parents and siblings how to use technology, with all the attendant benefits. Individual program participants also serve as models for one another, whether through exemplifying willingness to take a computer course, entrepreneurship in creating a new business, or providing service to their community.

One type of human capital that directly applies to community impacts is the program's success in **instilling appreciation of and interest in community service**. The program fosters commitment to effecting change, evident in facilitators' ongoing efforts to better the community and learners' efforts to realize their final community projects. The focus of the program helps participants see the ready applicability of what they learn in the program to community service, even when that service differs from the topic of their final projects in *Technology and Community*. One woman from Peñalolen who participated in Intel Learn as part of a 100-hour vocational training program explained how participating

in the course motivated her to use her new technology skills to create a blog for her indigenous cultural organization, helping to raise awareness of its programs in and beyond her immediate community. Parent volunteerism has also increased at schools that offer Intel Learn courses for adults. The parents explained that because Intel Learn has helped them so much, they wanted to “give back” to the school where they trained, doing everything from helping paint classrooms to becoming facilitators themselves so that they could train other parents.

The change seen in individuals—direct gains in capabilities and the ability to model those capabilities for others—has **an aggregate effect** when many people from the same community participate in capacity-building experiences, particular ones that, as we repeatedly have seen in Chile, are life transforming. During the Intel Learn course, as participants work together on community service projects, their individual gains multiply in the process of collaboration. The emphasis in the course on applying individual skills and knowledge in community service becomes a collectively shared value, as do the validation of personal agency and empowerment that participants experience. Although the experience of collaborative group-work was one of the benefits of the course that participants noted most frequently, the aggregate impacts of changes in individuals extend beyond direct group-work to the broader community, creating synergies across groups of people. These synergies were apparent in administrators’ support of children’s efforts to improve school facilities; efforts by other community members to help realize adults’ service projects upon course completion; and, once Intel Learn was integrated in their curricula, university departments’ aligning with new teaching and learning techniques and with the needs of the local community (see the Hallmark Story below).

These aggregate and synergistic effects can occur across the broadest social levels, through building of **connections to networks** of people, organizations, and information. On the local level, the ties established between children in Puerto Montt and the preservice teachers who facilitated their Intel Learn courses serve as important forms of social capital as the children seek help with homework and academic activities for which they might otherwise lack supports. Intel Learn also promotes the creation of networks of people with shared interests—for example, in building a community garden or creating a cybercafé for seniors—that deepen through the sharing of ideas, knowledge, and resources. Intel Learn also has provided a stepping-stone to the Chile Buys (Chile Compra) program for participants who developed businesses in the course. Chile Compra functions as an online marketplace and allows small-scale entrepreneurs—like rural farmers, mechanics, and furniture makers—to sell directly to the government without a middleman. Only 15% of the country’s GDP is made up of small companies, but in 2004, when Chile Compra began, 23% of small companies became government vendors, and in 2007 this number had increased to 35%. Chile Compra is credited with creating 250,000 new jobs. Intel Learn is responsible for helping its program participants become part of this network.

Networks and **linkages are created across communities and organizations** as well, helping organizations grow and succeed. Local nongovernmental organizations (NGOs) build linkages with federal programs like One Roof for Chile (Un Techo Para Chile). They learn how to access outside grant funding for specific programs and become better known through their work with Intel. Corporación El Encuentro, a tiny NGO, has had a huge impact across the country as a result of its work with Intel. It has also created linkages with the organizations, state programs, and universities mentioned in this report, as well as with many more. Similarly, universities have gained stature in their fields and built connections to community members through the program.

Importantly, the Intel Learn Program has become part of **Chile’s modernization infrastructure** in the digital age, and thus has additional powerful social impacts. Although this phenomenon certainly has national ramifications, its features are best seen at the local level. In the poor Santiago district of Peñalolen, where Corporación El Encuentro is based, a major technological initiative is under way. During his tenure, the mayor of Peñalolen, Claudio Orrego, who founded El Encuentro and is President of its Board, has created systems to digitize all government administrative functions, dramatically easing and increasing citizen participation in activities such as driver’s license renewal and voting registration, and

increasing personnel efficiency and government revenues. He has also helped pave the way for opening many community cybercafés and institutes for entrepreneurship. To maximize the benefits of these endeavors, appropriate ICT training was needed, especially for adults. The Intel Learn Program has proved an essential link in this ecosystem, providing precisely the type of engaging, empowering, and meaningful experience with digital technology that was needed. Peñalolen leads all districts of the Santiago Metropolitan Region in online civic participation, despite being among the poorest. This leadership reflects the success of the infrastructure created using Intel Learn in synergy with other programs at the community level.

Hallmark story: The Use of Intel Learn for Innovation, Outreach, and Capacity Building in University Communities

On April 14, we traveled to Puerto Montt, the capital of the Los Lagos Region in southern Chile. A scenic fishing center with a growing population now nearing 200,000, in recent years the city has also suffered from the economic downturn and a decline in its tourist and salmon industries.

The Intel Learn Program serves diverse recipients in Puerto Montt. Accordingly, we visited two schools, one urban and one semirural, speaking with teachers and students there, and also met with university administrators, faculty, and student facilitators in the University of Los Lagos' Department of Physical Activity Sciences (el Departamento de Ciencias de la Actividad Física—the Department).

The University administers the program in Puerto Montt, which is run by Brenda Lara Subiarbe, an academic administrator in the Department. The program curriculum is part of a one-semester mandatory course in the tract for first-year physical education students studying to become preservice teachers. In their orientation week, the students are first introduced to the theory behind the Intel Learn approach; then, in their first semester they take a mandatory Intel Learn training course to learn how to facilitate *Technology and Community* and *Technology at Work* and to become acquainted with the theories behind the pedagogy. In a second semester internship, students go into the community to facilitate the course, primarily for youth at local schools as part of an after-school program. In 2009, the 40 students trained as facilitators in turn trained about 500 participants in the community.

We met with about two dozen university students, all of whom had positive stories to tell about their experiences in the program. For the great majority, the internship constituted their first community service or volunteer work. The students remarked on how good it felt to give back to the community and help children learn, and many perceived their community service as the greatest program impact for them. Students also enthusiastically cited being able to work as teachers and apply pedagogy lessons learned in their first year of studies. Moreover, all seemed aware of the positive impact that this foundational experience was likely to have on their future teaching careers.

Faculty and students in the Department's preservice teaching tract concluded that the tract was the right one for implementing this technology initiative: in their view, physical education teachers are less wedded to outmoded pedagogical practices than other types of teachers and thus tend to approach teaching in more open-minded, creative, and active ways. They stated that physical education teachers understand the need to incorporate enthusiasm, breaks, diversity of activities, movement, and working in groups in the classroom—all elements of the Intel Learn Program.

The Department director and other faculty indicated that they had incorporated ICT in their program 5 years ago for two primary reasons: (1) they wanted students to graduate with well-rounded skills and knowledge, equipped with the essential tools to be effective as teachers and successful in life; and (2) the Intel Learn's alternative pedagogy prepares students for critical thinking and, by challenging their traditional beliefs, attitudes, and practices—including their experiences in the Chilean school system—allows them to become better teachers.

Department faculty stated that the critical thinking skills students develop as Intel Learn facilitators also help them in their physical education classes. Chile has high levels of both obesity and sedentary lifestyles, comparable to rates in the U.S. Faculty want their students, when they become teachers, to think critically about the assumptions that lead to poor food choices and inactivity. Physical education combined with technology training, they said, can help the new generation learn how to be active while also providing the tools needed to find information, create content, and share resources. That information will promote informed choices about health and help community members become agents of self-care and thus improve public health outcomes. Faculty also emphasized that the engaging and motivating program prepares their students to teach in ways that emphasize fun, encourage physical activity, and are

meaningful.

The university staff and faculty viewed their adoption of the Intel Learn Program as “revolutionizing” and “modernizing” their teaching of pedagogy. They had needed a way to teach project-based, participatory methodology to their students, and Intel Learn provided an excellent platform for doing so: students learned practical, simple exercises for applying the methods to the age group for which it was designed. Moreover, the program has helped the department meet its responsibility for conducting public outreach and building strong, sustainable relationships in the local community. The faculty also noted that through its use of the program they are now ahead of their peer departments at neighboring institutions in employing teaching practices supported by findings from the learning sciences. With the teacher’s serving as facilitator and the incorporation of technology, they cited shifts in power relations in the classroom toward greater democratization, given that children often end up teaching their teachers how to use technology.

The Talca Province in the Maule Region in the center of Chile has a similar program which we also visited. At the Catholic University of Maule, education students take Intel Learn during their first year both to help first-generation college students increase their capacities to use technology and, more importantly, to expose the students to progressive pedagogy. Faculty members and some administrators also take a modified version of the course to help transform their teaching and learn how to incorporate technology, group work, and project-based learning in their undergraduate teaching—and also to learn basic technology skills. Because many of the faculty had minimal experience with technology, this modified version of Intel Learn for was developed in lieu of offering Intel Teach. This version preserved the Intel Learn methods and structure but were modified to fit professional needs of the staff. Both universities are using the Intel Learn Program successfully to provide an alternative pedagogy. As a result, youth, preservice teachers, faculty, and university administrators have experienced transforming educational approaches—approaches that have altered teacher training, extended university public outreach, and favorably impacted the community.

Keys to Program Success

The evidence documented in this report should not be interpreted to mean that the successes of the Intel Learn Program in Chile were guaranteed. Intel and its various partners have experimented widely with models for implementation of the course, taking action, observing outcomes, and changing direction as much as has been needed. Because our primary objective in conducting the case study was to account for Intel Learn's community impacts, we did not conduct a systematic study of the implementation factors associated with the outcomes we observed, particularly not at the level of strategic partnerships, financial support, or corporate decisions that shape programming. However, we did infer what we believe to be several operating principles that while not explicit, nonetheless allow Intel Chile to produce the positive impacts we have documented. These are:

- Maintaining the essential, core features of the program that account for its success: e.g., a project-centered approach, learning through hands-on exploration, the teacher functioning as facilitator, and learner engagement in cycles of planning, doing, reviewing, and sharing.⁵
- While maintaining the integrity of the program, make few assumptions about what will work in particular contexts, and try new approaches frequently. The diverse niches in which the program has fit attest to the experimental nature of program implementation and scale.
- Maintain an attitude of ongoing reflection and learning. The experimental and creative approach Intel Chile has taken requires a commensurate reflectiveness, with program leaders looking for and quickly responding to indicators of both successes and challenges along the way.
- Work with organizations excited about and committed to the program. No one who is dragged, coaxed, or pushed into a partnership will have the dedication needed to make the program work.
- Be willing to alter or discard plans in favor of developing and maintaining appropriate relationships. For example, as one of its partner organizations underwent staffing changes, Intel Chile suspended joint activities for the year, allowing the new staff time to develop and the option of pursuing the partnership further or not doing so.
- Prioritize diversity and adaptation, taking seriously an ecological model of how the program fits in niches. This principle has meant allowing for modifications in the target audience, venue, course intensity and duration, and materials, while maintaining the program's essential features.
- Do not push for numbers or results. Instead, strive to attain healthy and sustainable relationships and the results will follow.
- Choose collaborators of clear and demonstrated capacity who share Intel Chile's value of dedication to those served and its flexibility in approach. This principle applies to consultants, research partners, and the Corporación El Encuentro, which has served as the implementation agency for Intel Learn in Chile for the past 3 years.

A key factor in Intel Learn's success lies in the compatibility between Intel's operating principles and the capabilities, outlook, and ethical commitments of its implementation agency, Corporación El Encuentro.

⁵ See Appendix A for full elaboration.

Corporación El Encuentro: Making It All Work

Corporación El Encuentro is a small NGO in Peñalolen, a district of Santiago, whose mission is improve the quality of life in marginalized communities, increase civic engagement, and promote community self-management by offering ICT courses, internet access, and radio programming that serves local needs. Since 2007, El Encuentro has been the regional training agency (RTA) managing the Intel Learn Program in Chile. The program coordinator, Gísela Hernández, coordinates a nationwide, multifaceted effort, acting as a bridge between El Encuentro's community groups, and the academic institutions and the government agencies that implement and fund the program.

The program's successes speak to El Encuentro's ability to expand the scope of the program throughout the country significantly with limited resources. El Encuentro's success has derived from promoting fidelity in implementing essential program features, while experimenting with substantial adaptations of the program to fit local needs.

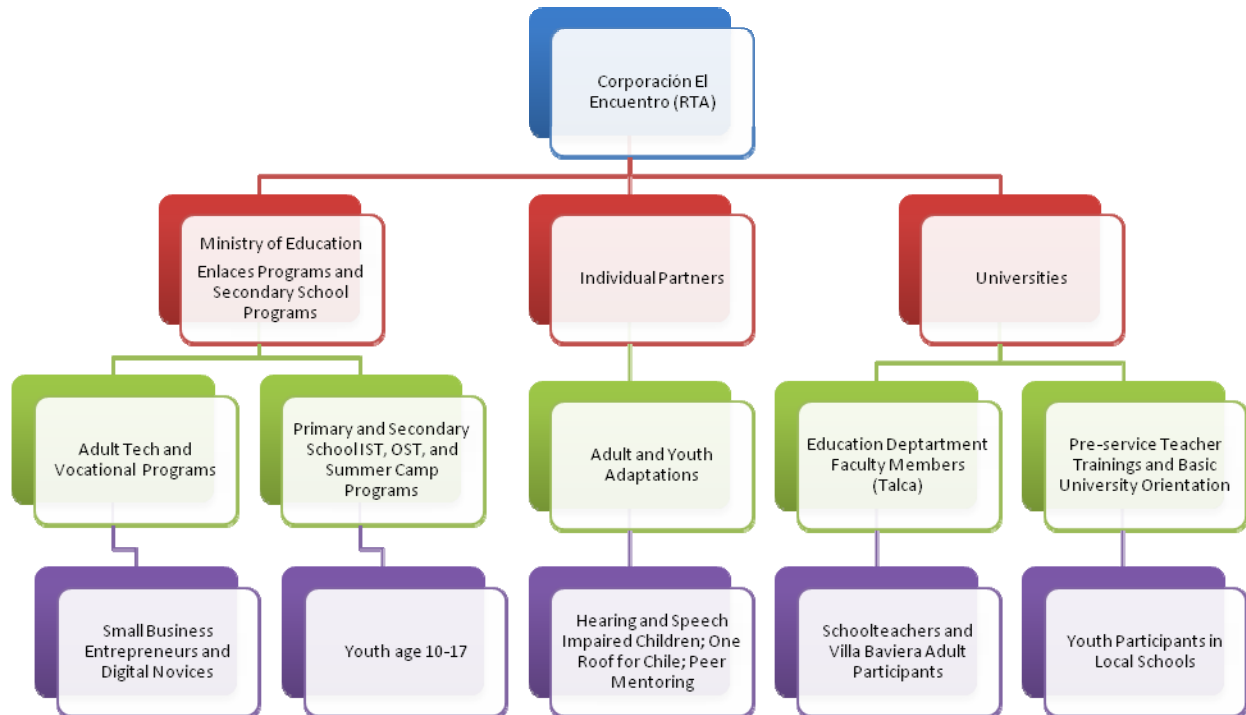
To ensure program quality and sustainability, before implementing the program El Encuentro first builds relationships with a wide range of organizations around the country, at the same time calibrating the depth of interest and the capacity that each potential partner may bring. Rather than depending on a single scalable model or sheer quantity of partnerships to increase the program's reach, El Encuentro has taken what can be termed a "design research" approach—testing new, customized models of implementation with parties who, after a pilot phase, are then able to scale up successful strategies in their communities. To maximize its limited resources, El Encuentro frequently relies on volunteers as facilitators, an approach that has often met with mixed success in other Intel Learn countries. In Chile, however, the institutional strategies of El Encuentro's partner organizations have helped mitigate high attrition rates and other problems encountered elsewhere with using volunteers. For example, university students facilitate the program in local schools as part of their coursework. Puerto Montt requires them to do so, but many of these students continue to facilitate the program after they have met academic requirements. Most notably, volunteers who facilitate the Intel Learn Program in Chile do so in the interest of serving their communities, a factor that is likely to have contributed to the high-quality of the programming and its ongoing community impact.

Small NGOs often falter under the pressure of having to do too much with too little. Many international development initiatives fail scale-up attempts because agencies are dogmatic about implementation fidelity and will not adapt programs to fit local needs. Intel Learn Chile has not encountered either of those pitfalls, largely as a result of Corporación El Encuentro's efforts and ingenuity as the Chilean RTA.

Corporación El Encuentro oversees a complex of partnerships, program types, and participants on behalf of Intel, as depicted in Figure 1. At the highest level are the Mineduc, university, and other institutional

partnerships that structure and guide programming. Each partner directly manages specific types of programs targeted at a variety of audiences and settings, including: youth, both in- and out-of-school; university programs, encompassing students and faculty; and adults in a broad range of community and institutional settings. Although the figure’s schematic representation necessarily oversimplifies the more fine-grained and dynamic reality of Intel Learn programming in Chile, it still provides an overview of the many players and relationships that account for the program’s success.

Figure 1. Intel Learn Chile—Partnerships, Programs, and Participants



Many, though not all, of the high level partners for the program were well established at the time the relationship began. Academic researchers have studied two Mineduc programs that are implementing the Intel Learn Program:

Youth Digital Inclusion Program (Inclusión Digital Juvenil or IDJ)

The IDJ program, a joint project of Intel Chile, Mineduc, and Enlaces. focused on low-income students in secondary boarding schools in four regions of the country from 2006-2009. Both modules of the Intel Learn Program were facilitated at schools, and Mineduc gave the equivalent of US\$200 to each school for the group of student participants to realize a final project. The goals were targeting youth at risk of social, cultural, technological, and educational marginalization; and promoting inclusion and participation of those youth in school and society. Research studies have shown that program participants were significantly more likely to be able to communicate their ideas effectively in presentations in comparison to a control; additional measures to determine cognitive outcomes are being addressed (Centro Costadigital Team, 2009a; Centro Costadigital Team, 2009b).

Enlaces

The Enlaces (Links) program is a Mineduc initiative that began in 1992 to introduce ICT in public schools to reduce the digital divide. Enlaces has been very successful, reaching 87% of Chile's student population and has connecting 75% of Chilean schools to the internet (<http://www.enlaces.cl/index.php?t=44&i=2&cc=-218.218&tm=3>). In 2002, Enlaces y Comunidad (Links and Community) began, opening school computer labs to the greater school community and providing digital literacy classes and internet access to teachers, parents, and neighbors (Alzamora, 2009). Intel Chile has worked with both of these programs to provide the Learn Program to youth and adults around the country.

In the 2 months after SRI's April 2010 visit, Intel Chile began new programs with women domestic workers in Santiago, both from Chile and abroad, and illiterate children and adults in Peñalolen. Some of the immigrant women in the domestic worker program are saving to buy computers to be able to communicate with their families in their home countries, exemplifying the proliferation and the power of the program for engaging people in learning how to use new technologies.

As report findings clearly show, Intel Chile has actively implemented the Intel Learn curriculum with adults as well as students. In general, although the two Intel Learn units have been shortened to cover 18 hours each in the Enlaces initiative, the curriculum for adults remains largely in the form developed for children and youth. The concepts and pedagogy, although simple in presentation, are rich, deep, and engaging enough to attract and inspire adults as well as children. The technical aspects of the course that challenge children are even more challenging for adults, and some of the applications that seem passé or underpowered to children and youth (those used in the graphics portion of the course in particular) have proved to be fully interesting to adults. The creativity, autonomy, and playfulness that characterize the curriculum, rather than discouraging or insulting adults, have proved welcome qualities, mitigating some of the fear and anxiety most adults experience in their initial exposure to the world of technology.

In one instance, for programming at the Catholic University of Maule, Talca, some relatively substantial, varied, and specific adaptations of the curriculum were made. To illustrate the considerations and care with which these adaptations were made, the description of the process provided by the local program leader, Rosa Cuadra is presented in full, as follows:

In 2008, we were commissioned to update the Facilitator's Manual, and on that occasion Don Hernan Soto [Enlaces Program Coordinator for Catholic University of Maule] asked me to work with him. We rearranged the contents, adapted some activities, and strengthened sections on generating projects.

The first changes I made, after learning of the "Learn" model, was a guide for preservice preschool teachers with an Educating for the Future course, which incorporates elements of reflection on the essential skills, theory of multiple intelligences, collaborative work, development of critical thinking, effective questioning strategies, critical friend roles, observation skills, listening and speaking skills, ability to give instructions to encourage skills, intervention, and group management. This adaptation was finished in 2007 [in connection] with Teach to the Future because it was believed that future generations of teachers should be aware of these skills.

I believe that these issues should be a strong part of initial teacher training and continuing training, which is why the collaborative working method and "Plan, do, review and share" are present in all our training processes.

When we began to deliver the teacher training at our university on Technology and Community and Technology and Work, I developed a guide that incorporated the same themes of reflection, and the learning activities and tools were adapted. For example, to perform stamp activity (Technology and Community), we based it on the 21st-century learning skills, and used the manual and skills book just as support

Then later, a school asked us to train their teachers in use of technology for Mineduc's ICT in the classroom program. I made a guide that adapted the Intel Learn Program for classroom teachers and thus was born Aprender Docente [Learn for Teachers]. It incorporated these methodological issues, topics for discussion, and content of the Facilitator Manual. This course was very well received by teachers, and I have improved it over time. Currently, as initiated by Intel Chile, we are providing this course for two groups of teachers in the community of Sagrada Familia, and to a group of teachers from Liceo Marta Donoso de Talca.

As these examples demonstrate, the Intel Learn Program curriculum, methods, and facilitation approach are useful in circumstances and with audiences beyond their original targets. The value of the program in the variety of contexts across Chile described in this report has depended on the skillfulness of adaptation and implementation with which program managers at all levels have worked.

Conclusion

Our study of the Intel Learn Program in Chile was intended to show the ways in which Intel Learn has impacted the lives of participants and the people and institutions most closely associated with the program. Accordingly, we studied the influences of the curriculum, pedagogy, and instructional approach on individuals, families, and communities. At the same time, we documented many of the strategies and principles that have guided program development and implementation systemically throughout Chile, noting the particular social needs the program has been used to address. The types of program impacts and the choices made regarding whom to serve and how to do so are closely related issues. That is, how a program is designed and implemented—the types of partnerships, adaptations, and supports that shape the program—are often critical with respect to whether or not it is a success.

The successes of Intel Learn in Chile when viewed in terms of its impacts on people's lives are dramatic. Youth and adults, facilitators and faculty, community organizations, and local business endeavors all have been shaped by the course. It has repeatedly been adopted to fill particular niches by providing technology training that is engaging, rigorous, and relevant to specific personal and community goals. As such, it has fit within the ecology of offerings in municipalities across the country, and become a key tool for schools, universities, and community-based organizations to promote social and economic development by enhancing a broad range of attitudes, skills, and values that underpin positive community change.

The program's robust, essential features, when preserved, have allowed the course to be used well beyond its original design specifications. The Intel Learn Program exemplifies many of the more abstract and difficult to visualize aspects of student-centered pedagogy. It embodies a set of practices that make the objectives of curricular and pedagogical reform concrete, providing a real, live, and vivid example of how teaching and learning can be markedly improved. When people see Intel Learn, they get it—they understand why new pedagogical approaches are important for collective innovation, creativity, and community actions. By the same token, Chile's model of course implementation has shown how broadly the course can be of use, regardless of participants' age and educational attainment. Consequently, the Chilean model has the potential to serve as an example for alternative ways the program can be adopted and adapted in other countries.

References

- Alzamora, M. V. (2009). *Informe final "Programa Aprender en Enlaces y Comunidad."* Santiago, Chile: Ministerio de Educación, Gobierno de Chile.
- Botrell, D. (2009). Dealing with disadvantage: Resilience and the social capital of young people's networks. *Youth & Society* 40 (4), 476-501.
- Bransford, J. D., Barron, B., Pea, R. D., Meltzoff, A., Kuhl, P., Bell, P., Stevens, R., Schwartz, D., Vye, N., Reeves, B., & Sabelli, N. (2006). Foundations and opportunities for an interdisciplinary science of learning. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 19-34). New York, NY: Cambridge University Press.
- Centro de Informática Educativa of Pontificia Universidad Católica de Chile. (2007). *Informe final 2007: Proyecto Inclusión Digital Juvenil*. Santiago, Chile: Author.
- Centro de Informática Educativa of Pontificia Universidad Católica de Chile. (2008). *Informe final 2008: Proyecto Inclusión Digital Juvenil*. Santiago, Chile: Author.
- Centro Costadigital Team. (2009a). *Segundo Informe de Avance, Programa Inclusión Digital Juvenil*. Valparaiso, Chile: Pontificia Universidad Católica de Valparaiso.
- Centro Costadigital Team. (2009b). *Primer Informe de Avance, Programa Inclusión Digital Juvenil*. Valparaiso, Chile: Pontificia Universidad Católica de Valparaiso.
- Gaete, A. (2010). *Inclusión Digital Comunitaria: Una experiencia que contribuye a la reducción de la brecha digital? Observaciones desde sus participantes*. Unpublished master's thesis. Universidad de Chile, Departamento de Antropología y Desarrollo.
- Gobierno de Chile. (2009). *Quinta encuesta nacional de consumidores de servicios de telecomunicaciones*. Santiago, Chile: Subsecretaría de Telecomunicaciones.
- Gutiérrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, 32(5), 19-25.
- Holland, N. E. & Farmer-Hinton, R. L. (2009). Leave no schools behind: The importance of a college culture in urban public high schools. *The High School Journal*, 92 (3), 24-43.
- Intel and Corporación El Encuentro. (2009). *Intel Learn Chile 2009-2010: Program to support digital inclusion in the community*. Santiago, Chile: Intel.
- Intel and Corporación El Encuentro. (2008). *Intel Learn Chile 2008: Program of support for the Digital Community Inclusion*. Santiago, Chile: Intel.
- Intel and Corporación El Encuentro. (2007). *Informe de Gestión 2007: Intel Aprender Comunitario*. Santiago, Chile: Intel.
- Intel and Corporación El Encuentro. (2009). *Intel Aprender en Chile: Resumen de su Ejecución 2006-2009*. Santiago, Chile: Intel.
- Ito, M., Horst, H., Bittanti, M., boyd, d., Herr-Stephenson, B. Lange, P.B. et al. (2008). *Living and Learning with New Media: Summary of findings from the digital youth project*. The John D. and Catherine T. MacArthur Foundation Reports on Digital Media and Learning. Retrieved from: <http://digitallearning.macfound.org>
- Kozma, R. (2008). ICT, education reform, and economic growth: the role of the Intel® education initiative. Retrieved from <http://www.intel.com/education/evidenceofimpact/Papers.htm>

- Michalchik, V., Carrier, S., Emery, D., Gallagher, L., House, A., Molina, A., Peck Theis, L., & Penuel, W. (2006). *One Economy Digital Communities: Transforming lives for low-income Americans in San Jose and Miami*. Menlo Park, CA: SRI International.
- Michalchik, V., Sussex, W., & Gorges, T. (2007). *Intel® Learn Program evaluation findings*. Menlo Park, CA: SRI International.
- Martinez, M., & Klopott, S. (2002). *How is school reform tied to increasing college access and success for low-income and minority youth?* Washington, DC: Pathways to College Network.
- Unger, M. (2004). A constructionist discourse on resilience. *Youth & Society*, 35 (3), 341-365.
- United Nations Development Program. (2006). *National Human Development in Chile. New Technologies: a leap into the future?* Santiago, Chile: Author.

Appendix A

Features of the Intel Learn Program that Support Development of 21st Century Skills

Broad and integrated themes around which learning is built. Themes provide coherence to a body of activities or projects, allowing for greater leveraging of ideas, insights, representations of information, and products. A theme fosters the application of a variety of skills and the deepening, integration, and development of new knowledge. In the Intel Learn program, themes such as improving the community and using technology for socially productive purposes help organize the learning.

Problem identification and solution. To develop the types of strategic thinking needed to solve real-world problems, learners need to understand the intrinsic properties of the problems themselves. Understanding the nature of “textbook” problems typically requires little analysis, and solving them typically requires the use of only low-level skills. In the Intel Learn Program, learners identify problems that matter to them and they wish to address, developing tools, strategies, plans, and ideas for moving forward as possible.

Relevance. Content that is relevant to the context of their lives leads learners to deeper engagement and deeper thinking. Relevance is enhanced in an environment that helps people draw connections between what they are learning and how they can put the knowledge to use, especially in developing solutions to challenges facing them or their communities. The latitude given to learners in choosing what they wish to pursue in their project allows them to make what they do relevant to their goals and interests.

Active exploration. Learners are better prepared to acquire, remember and apply new information, strategies, and skills once they have spent time exploring a challenge or problem for themselves, that is, without receiving explicit directions or answers at the outset of a lesson. The most powerful form of learning is “learning by doing”—hands-on, problem-oriented, and open-ended—the type of opportunity offered in the Intel Learn Program.

Choice and autonomy. An environment that supports the development of 21st century skills provides learners with a measure of choice in the activities they undertake, the strategies and tools they use, and the creative aspects of their plans, projects, or designs. The Intel Learn Program provides learners choices as to the nature of their projects and autonomy in carrying out their work.

Cycles of creation. The ability to use technology effectively, to think critically, and to collaborate meaningfully with others is enhanced best in a *cycle* of generating and improving their work. In each cycle, Intel Learn participants plan, execute, reflect on, revise, and share their insights about the project or solution they are developing, working with one another to improve their products.

Collaboration and communication. A key requirement of the 21st century workplace is the ability to communicate effectively with colleagues to set goals, identify and analyze problems, and deliver solutions. Collaboration is built into the Intel Learn through sharing of resources and team projects.

Authentic feedback. In 21st century learning environments, learners work on activities or projects that have no single specific outcomes. Instead, with the help of others, learners must assess their own work relative to how well it serves the purposes for which it was intended. The Intel Learn Program promotes self-assessment and reflection, peer criticism, and authentic opportunities for feedback on participants’ projects.

Adults as facilitators and mentors. Rather than serving exclusively as experts who provide information, in the 21st century learning setting adults serve to facilitate students' exploration, application of skills, development of personal interests, and creation of original work products. The facilitator function central to Intel Learn minimizes didacticism and builds relationships of trust between participants and instructors.

Use of 21st century tools. Participants in 21st century learning environments are given the opportunity to develop skills related to information, media, and technology. The Intel Learn Program is structured for participants to build their capacity to varied of digital technologies to communicate, express themselves, and develop approaches to problem-solving.

Appendix B

Intel Learn Program—Community Impact, Chile 2010

Hypothesized Benefits and Impacts of Intel Learn	Examples of Supporting Evidence We May Gather In the Field	Program Components that Contribute to Benefits and Impacts	Methods and Instruments for Gathering Evidence
<p>The location in which the program is held becomes a gathering place and resource for a locality, including neighboring towns or districts. This benefit will be greatest when previously under-used spaces (e.g. community centers, libraries) are available.</p>	<p>Communities use an existing location for new purposes, such as a digital resource center for email, classes, community events, dances, or beauty pageants.</p>	<p>Giving community members a basic level of comfort with computers and requisite skills, familiarizing the community with computers and their potential for improving lives, and providing the space to integrate computers into community life</p>	<p>Observations of Summer Camp in session and interviews with administrators, facilitators, learners, and (if possible) parents and community members</p>
<p>Learners gain digital literacy and conquer their fear of computers.</p>	<p>Facilitators report that learners are unable to manipulate mice and keyboards at the beginning of course. Learners report entering the course with a fear of computers, but finishing the course with mastery of and interest in computer use. Learners report that they sometimes needed to work on a computer at school, but didn't have the skills to do so until taking the Intel Learn program</p>	<p>Opportunities for learners with little to no digital literacy to acquire basic digital literacy skills in a scaffolded environment, with peers and lessons providing grounding</p>	<p>Interviews and surveys of facilitators and learners.</p>
<p>Facilitators gain skills in facilitation, teaching, and interpersonal relations.</p>	<p>Facilitators report personal and professional growth, an increased role in community, and better preparation for future jobs.</p>	<p>Professional training, skills gained through program implementation, and interaction with community members and families</p>	<p>Surveys and interviews with facilitators</p>
<p>Learners increase their participation in community activities.</p>	<p>Learners, family members, and/or community members report that learners become more active in the community.</p>	<p>Curriculum focus on community in addition to technology skills</p>	<p>Interviews with alumni, facilitators who follow alumni, and learners who express an increased desire to participate in community activities in the future</p>

Hypothesized Benefits and Impacts of Intel Learn	Examples of Supporting Evidence We May Gather In the Field	Program Components that Contribute to Benefits and Impacts	Methods and Instruments for Gathering Evidence
Parents become interested in using computers.	Adult family members, and self-described “housewives” in particular, report interest in taking the Intel Learn program.	Parents’ growing awareness of their children’s work and skills as they drop them off and pick them up from program classes and attend their final presentations	Interviews with parents and facilitators
Learners make contributions to personal or family businesses.	Learners and family members report contributions to businesses such as using the computer to make signs or help with spreadsheets.	Basic technology skills, increased interest and engagement in using the computer as a tool, and skills learned through the <i>Technology at Work</i> curriculum	Interviews with learners, parents, and family members
Learners’ academic outcomes improve.	Learners apply the critical thinking and technology skills learned to their schoolwork, especially in high school.	Critical thinking, technology, and collaboration skills that can be applied in studying and learning in school	Interviews with schoolteachers and (if possible) with parents
Learners begin to help others in school with their computer needs.	Learners report helping teachers with computer issues and having classmates come to them for help with computer assignments.	Group work and collaboration on Intel Learn in addition to gaining digital literacy skills	Interviews with learners and teachers.
Learners seek and attain more professional opportunities.	Learners and their families report their expectations for getting jobs as a result of the technical skills acquired.	Technology, critical thinking, problem solving, and collaboration skills	Survey and interviews with facilitators, learners, and parents
Local stakeholders seek to adapt the program for a wider audience (e.g., Enlaces)	Administrators report creating new, local versions of the Intel Learn program for stakeholders older than 8 to 16.	Filling a void in the greater community	Reports from program directors on adaptations and program evolution

Appendix C

Young Learner Interview Protocol

Instructions

Explain that you are here from the US to study how the Intel Learn Program is good for the people of Chile. You're not examining the teachers or anyone—just want to know what's helpful about the program

For each part of the interview, begin with the initial open-ended question. The topics listed on the left-hand column are intended to guide discussion. For each topic, the sample probes listed on the right are intended to initiate conversation and elicit information. Please note that the probes included here are suggestions to help obtain information about the topic. **Researchers are not required to ask every question listed; you are also welcome to make up other probes as might be appropriate and relevant.**

Questions

Part 1: Rapport building and background information

Please tell us a little about yourself.

Background

1. What is your name?
2. How old are you?
3. What grade are you in at school?
4. What are your favorite hobbies?

Part 2: Program participation

Please tell us a little about what you have been doing in this course or program.

Program experiences

5. How did you hear about the Intel Learn Program?
6. What has been the thing you have liked best?
7. What other kinds of things do you do when you're here in the program?
8. Anything you haven't liked much?

Outcomes

9. How do you think what you've learned will help you: in school, at home, work, etc? [*Prompt for each*]
10. What is/was the topic of your community project?
11. What are some other problems in your community? Who do you think should fix the problem? Can you help?

Family and friends

12. Do you share what you've learned in this course with your parents or other family members? What do they say?
13. Do you talk to your friends about the course? What do you

say?

Part 3: Future goals and dreams

We want to know a little more about what else you do and want to do.

- Beyond the program*
14. Do you participate in any other clubs, community groups?
Can you use what you have learned about computers to help this group?
 15. What would you be doing if you weren't taking this course right now?
 16. What do you want to be when you grow up?

Adult Learner Interview Protocol

Questions

Part 1: Rapport building and background information

Please tell us a little about yourself.

- Background*
1. What is your name?
 2. Can you tell me about your previous experience with computers before this course?

Part 2: Program participation

Please tell us a little about what you have been doing in this course or program.

- Program experiences*
3. How did you hear about the Intel Learn Program?
 4. What has been the thing you have liked best?
 5. What other kinds of things do you do when you're here in the program?
 6. Anything you haven't liked much?
- Outcomes*
7. How do you think what you've learned will help you – personally or professionally? [*Prompt for economic, educational, social, civic, transaction, recreation impacts*]
 8. What is/was the topic of your community project?
 9. What are some other problems in your community? Can you think of ways you can personally help?
- Family and friends*
10. Do you share what you've learned in this course with your family members? Have you helped them learn anything new?

11. Do you talk to your friends about the course? What do you say?

Part 3: Future goals

We want to know a little more about what else you do and want to do.

Beyond the program

12. Do you participate in any other clubs, community groups? Can you use what you have learned about computers to help this group?
13. What would you be doing if you weren't taking this course right now?
14. What type of work do you do? What would you like to do?
15. Have you taken other classes or technology courses?

Program Facilitator Interview Protocol

Questions

Part 1: Rapport building and background information

Tell us about your familiarity with the program, your child/ children and your community a little.

Part 1: Rapport building and background information

Please tell us a little about yourself, your role in this center, and your experience with technology.

Current experience

1. How long have you been working in this program?
2. How long have you been working in these kinds of programs?
3. Have you ever worked in schools (primary, secondary, college, or university)?
4. Are you a student at the university, a part-time facilitator, etc.?

Background with technology

5. What experience do you have supporting IT or children's use of technology? Other youth development work?
6. Tell us about how you use technology in other settings— at home or other workplaces, for example.

Part 2: Program impact

Please tell us a little about what you think of the program.

Impact on learners

7. How did you become a facilitator and why?
8. How has this job impacted you professionally or personally? [*Prompt for development as a professional, communication, helping others*]
9. Can you describe a typical day for participants?

Outcomes observed or reported by others

10. How do you gauge progress among the participants/learners?
11. What do you think is the greatest impact this program has had on learners?
12. How do learners change over the duration of the course?
13. What is your contact with the children's teachers? Do you see any linkages between Intel Learn activities and children's schoolwork?
14. Do you know of instances where learners change: [*Prompt for community action; schoolwork; prof or business; family contributions; helping others with computers?*]
15. Do you have much interaction with family members/parents of the learners? What do they say about impact of program?
16. Do you have interaction with others in this community—like leaders of organizations, governmental, or faith-based groups? Any interest or views from them on the program?

Part 3: Impact on facilitator

Please tell us a little about how the program has affected you.

Example of one thing they've learned about pedagogy

17. Please describe one new thing you, as a facilitator, have learned in the program.
18. How did you learn it?
19. Are there other valuable things you have learned?

Impact on them as professionals

20. Overall, how has this job impacted you professionally or personally? [*Prompt for development as a professional, communication skills, helping others, if needed*]
21. If you are/were a teacher, is this teaching style similar to or different than what you have done in the past?
22. Has facilitating this course impacted your role in the community? Have your relationships with people in this community changed because of the program?

Future

23. Has the program changed what you might do in the future?

24. How you think about your life or the community you have worked with?

Appendix D

Itinerary of Visits

4/12

Meeting with Claudio Orrego, the Mayor of the Penalolen commune in Santiago.

Meeting with select staff of Mineduc's Enlaces program.

4/13

- Municipality of La Pintana, Department of ICT for Pintana Online. Presentations from two adult participants of the Accounting, Technology, and Work program, a 100-hour program that incorporates *Technology and Community* and *Technology at Work* into its technology and small business training program for adults in this poor commune in Santiago.
- Visits to two schools in impoverished areas of Santiago – Peñalolen and La Pintana. During both visits, we met with alumni (aged 12-14) of the Spring Camp (OST) program offering *Technology and Community*. Interviews were also conducted with a few parents, some teachers, and principals of the schools.
- Meeting with researchers at the Pontifical Catholic University of Viña del Mar for an evaluation of the Youth Digital Inclusion pilot program.
- Visit to a school in Quintero that had implemented *Technology and Community* and *Technology at Work* with youth in after-school programs.

4/14

Trip to Puerto Montt, capital of the Lakes Region in southern Chile.

- Visits to two schools, one urban and one peri-urban, to meet with youth alumni of summer camp program offering *Technology and Community*, volunteer facilitators, teachers, and principals.
- Meetings at the Catholic University of Los Lagos' Department of Physical Activity Sciences, with the department director, the internship coordinator, faculty, and student volunteer facilitators.

4/15

- Meetings at the Catholic University of Maule in Talca, an area gravely affected by the March 2010 earthquake.
- Visit to Villa Baviera, a former German cult recently reappropriated by the state, and meetings with adult alumni participants in *Technology and Community*. Adults (around age 50) were both recently freed from the restrictive and abusive hold of the cult leader and were learning how to speak Spanish during the time they took the course.

Appendix E

List of Intel Learn Chile Reports

Intel Annual Reports

2007 P. Catholic University of Chile.

2008 P. Catholic University of Chile.

2009 Moe, Intel, CIE.

2006-2009, Intel and Corporación El Encuentro

2008: Program of Support for the Digital Community Inclusion (Intel and Corporación El Encuentro)

2009-2010: Program of Support for the Digital Community Inclusion (Intel and Corporación El Encuentro)

Centro Costadigital, Pontificia Universidad Católica de Valparaiso. Nov 2009. Segundo Informe de Avance, Programa Inclusión Digital Juvenil (and Primer Informe de Avance)

Research report on IDJ program. Analysis of results in an experimental study of IDJ pilot, looking primarily at learning outcomes such as presentation skills and reading comprehension.

Alzamora, Makarena V. *Informe Final “Programa Aprender en Enlaces y Comunidad.”* Programa Enlaces Abierto a la Comunidad del Centro de Educación y Tecnología (CET). Enlaces, Ministerio de Educación.

Final Report on facilitator training sessions for Enlaces y Comunidad program for adults

Gaete, Andres Lagos. 2010. Inclusión Digital Comunitaria: Una experiencia que contribuye a la reducción de la Brecha Digital? Observaciones desde sus participantes. Estudio de Caso: Colonias Digitales Aprender Chile.

Master’s thesis by Corporación El Encuentro staff member. Case Study of Summer Camp ILP in Santiago. Evaluators adapted his student survey and distributed it to summer camp alumni before the 2010 site visit.