

Power Users of Technology

Who are we?
Why does it matter?
Where are we going?



Center for Education, Employment
and Community at Education
Development Center, Inc. in
Collaboration with a Global
Network of Partners

Power Users of Technology Research Initiative 2001–2020

How Power Users of Technology Are Shaping Our World

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Education Development Center, Inc. (EDC), is an international nonprofit organization, building bridges between research, policy, and practice. Our award-winning programs and products, developed in collaboration with partners around the globe, consistently advance learning and healthy development for individuals of all ages. Today, EDC manages 325 projects in 40 countries. Our work strengthens nearly every facet of society, including early child development, K–12 education, health promotion, workforce preparation, community development, learning technologies, basic and adult education, institutional reform, and social justice.

EDC's innovative solutions emerge at the intersection of research and practical experience. Each project grows out of existing research. Rigorous field-testing and evaluation inform each new tool or approach. EDC believes that people working effectively in groups are often capable of greater vision and creativity than individuals working alone. EDC is an expert in building collaborations across countries, cultures, generations, classes, and professions. This diversity of purpose and quality of program makes EDC the best choice for leading the effort on the ***Power Users of Technology Initiative***.

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Power Users of Technology Research Initiative

How Power Users of Technology Are Shaping Our World

Working Definition of a Power User of Technology:

Power Users of information and communication technologies are individuals who break out of the confines of traditional learning, demographic, or technological barriers by constantly using, sharing, creating, producing, or changing information in creative, innovative and/or unintended ways so that they become force multipliers in their own environments.

(Global Advisory Committee, 2002)

Who are they?

We know who they are—our children, nieces, nephews, and students. We see them every day at home, in school, in libraries and after-school programs, community technology centers, and cybernet cafes. They play video games, talk to friends using instant messaging, listen to MP3s, and do their homework—all at the same time—multitasking, moving their focus from one task to another seamlessly, without effort.

They download software, music, and games. They are the youth who are playing in global, virtual worlds long after we are asleep. They seek information, learn what they want to know, when they want to learn it, to the level of depth that satisfies their immediate quest for knowledge—on a just-

“I use the Internet to look for things because I’m wondering about them. The Internet has a wider range of resources and a lot more information.”

(Power User Michael, 11)

in-time, as-needed basis. They are the youth who have avatars interacting with children and adults around the globe, who make friends with strangers, who ask questions of experts—and get answers as peers. They are the ones we call upon to program our video recorders, help us troubleshoot our software and hardware problems, and advise us on specifications for technology purchases at home. They are our technology advisors.

Their self-selected, long-term, intensive experiences with technology have changed them. They think, behave, and solve problems differently from us and from others who have not had this special relationship with technology. We really don’t know everything they are able to do. We are “amazed” when we learn what they have accomplished at young ages. We are puzzled by their learning patterns and concerned about their trajectory. We now live in a world where many of our youth are the “experts” and adults

are the “novices.” With ready and easy access to information, they challenge us as parents, teachers and adult supervisors.

Underlying all of this we are compelled to ask what will it all mean? What does this mean for our families and societies? What does it mean for the way we design and organize schools when children have the skills of experts? What challenges them? What will be the economic impact as this upcoming wave of Power Users of Technology emerges into our workforce? What do we need to know about them to promote their human potential and learning, and to guide their personal, academic and career development—so that they are a positive force in our future world?

Who are these Power Users of Technology? They are our children—they are our future.

Why are they important?

By the age of 10 to 15, Power Users are in control of their technologies and have become self-directed learners, seeking and constructing new learning from their environments and from one other. The Internet provides powerful opportunities for millions of children worldwide for social affiliation and for playing with identity. These experiences are occurring at a developmental stage when Power Users are evolving their own personal interests and formulating their values, envisioning possible futures, and setting themselves on paths leading to professional, technical, and service careers. It is also at this developmental stage where females and cultural minorities are more likely to fall out of the pipeline to mathematical, scientific, engineering, and technical careers.

Research from various fields tells us that Power Users may, indeed, be different from those youth who have more limited access and experience with technology. Research on how people learn tells us that “experts” exhibit certain ways of thinking and problem-solving. Power Users are technology “experts.” We know that intensive, long-term experiences with technology can change the ways our young people process information. Research on brain plasticity tells us that chemical and biological changes in the brain can be influenced by experience. What, then, is the influence of the intensive, long-term, continuous technology experiences, coupled with the self-directed learning patterns of Power Users? This research initiative will help us understand better that these children are unique in our human experience. This project will identify existing research and ask questions that will inform the development of a long-term research agenda.

How would Power Users Compare themselves to non-technology peers?

“We are better strategic thinkers.”

(Power User Jonathan, 16)

We have gathered descriptive studies on the emergent culture of Power Users of Technology. *However, we have found no relevant long-term studies that begin to capture this phenomenon to explain the behaviors of this emergent culture in relation to education, workforce, and economic development issues.*

Technology is not only influencing young people. The behaviors that characterize teens' use of technology—socializing, multitasking, going mobile, making personal statements, collaborative computing—are increasingly influencing what is being developed in industries from telecoms to electronics to software. . (some industries have been asking how to market to avatars). This includes emerging changes in the education industry—everything from virtual online learning to new ways of “knowing” in the classrooms and beyond. Kids have the time and inclination to experiment, and the futurists are listening to what they have to say.

Questions from the field are beginning to help us understand their importance to educators, workforce and economic development leaders, and social scientists. Take the following examples:

- What is the relationship between intensive technology experiences at early ages and learning (potential for learning, depth/breadth of skills/knowledge, scaffolding of learning experiences, direction of learning toward technical careers)?
- Which studies help us understand the learning patterns of Power Users of Technology in the formal education setting? the informal education setting?
- What potential impacts will the emergence of groups of Power Users of Technology have on education policy and practice over the next quarter-century within our communities, regions, and worldwide?
- What would a society look like when groups of Power Users of Technology emerge and influence? What would be the social/cultural consequences if this should happen? In what ways might national and international balance of power be impacted?
- What is the relationship between intensive technology experiences and social development? psychological development (e.g., effects on behavior, self-esteem, achievement, locus of control, etc.)? human development?
- Is there a relationship between intensive use of technology over extended periods of time and the brain (physiology, neurological development, chemistry)?
- What are the possible economic impacts of a national policy that raises the level of information technology (IT) literacy for all, so that students leaving grade 12 possess both broad-based and highly sophisticated computer skills?

“I made friends online who had similar technology interests and they helped guide me in learning what I needed to know. . . . My biggest interests are in using computers to solve medical problems . . . and using nano technologies to treat pathological diseases such as aids and cancer.”

(Power User Trevor, 21. Head of a nationally recognized multimedia company's web department)

While all of this is going on, we can't just wait for things to happen. We can't just leave all of this to chance. This emerging phenomenon is something we not only need to learn *about*; we need to learn *from* and *with* these young people who are Power Users of Technology. What they offer is a new window on a world that is experiencing dramatic changes in ideas and growth on the one hand and that is still stuck in the hard work of dealing with everyday struggles.

We believe that *how they think* and *what they do* is revolutionary, not evolutionary. They are leapfrogging over many of the more traditional ways that we think about learning. Their minds and their brains are developing—in ways that most of us can't quite understand, because we are not “wired” in the same ways that they have been. These Power Users simply do not fit many of the traditional assumptions we use to describe

adolescents in the world of psychology, anthropology, sociology, medicine, and education. They behave as experts, not novices, in their worlds of technology; they “see” the world in ways that are different from our own; they harness ideas and knowledge using strategies and logic that fall outside the boundaries of the models we know. And, in all of this, they challenge the very essence of our contemporary learning systems—anywhere in the world.

To engage these wonderful young people from around the world is a special and unusual task. We can’t simply “watch” what happens . . . for we know that the paths that Power Users take can be mobilized for both positive as well as negative outcomes. We must discover new research methodologies that enable us to study this phenomenon *with* them; we must allow ourselves to cross the traditional disciplinary boundaries that hold us too close to our own view of the world; we must be prepared for the unexpected in terms of what we learn. We must make room in our theories for new breakthroughs that upset many of our current, more comfortable notions.

And why should we invest in this work?

Because we know that Power Users from around the world offer humanity an entirely new source of talent and imagination for the future. But, our goal is not simply to nurture these unusual and masterful young Power Users to create a new elite . . . but to understand better what is at the heart of their thinking and to be far more intentional in bringing this knowledge together to give *all* children the opportunity to take advantage of what technology can offer . . . and more importantly, to create welcoming environments that encourage young people to be creators and inventors of new technologies that connect us and improve our world.

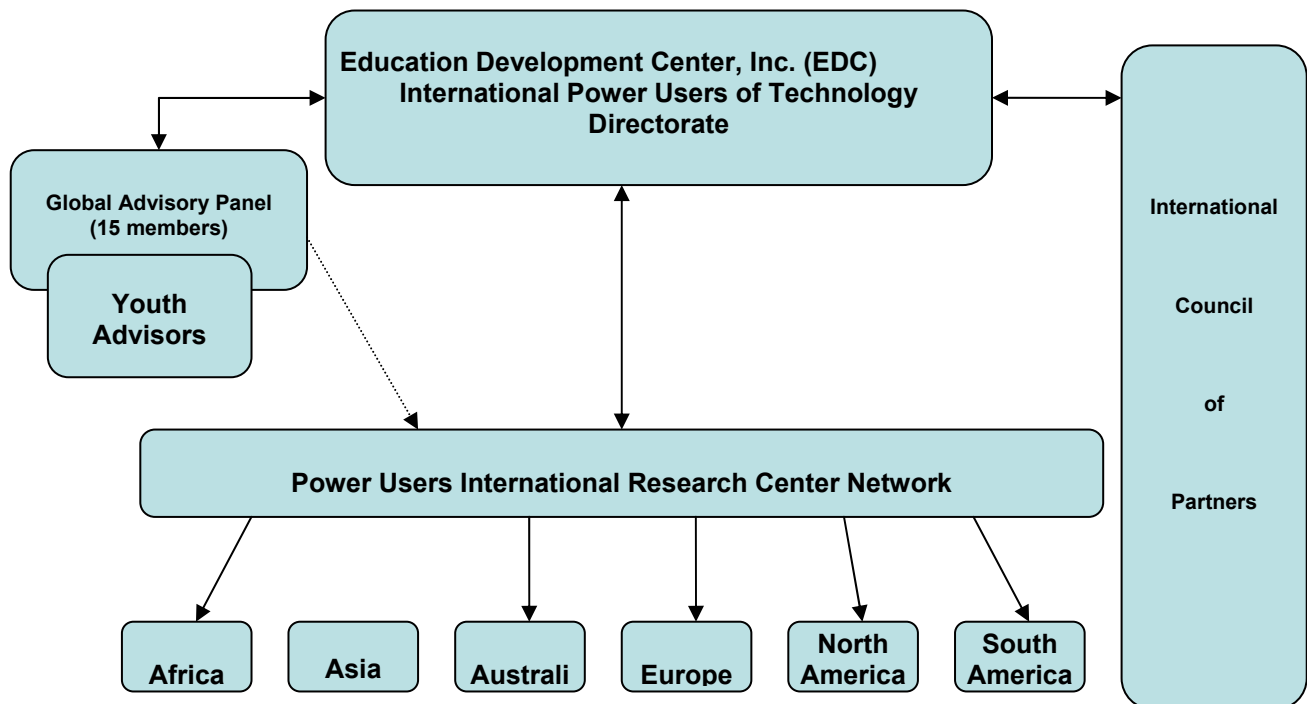
But this is not just about the young people—it is also about being open to the idea that what we learn may turn the learning systems inside out and upside down—paving the way to entirely new ways of creating knowledge.

If we believe that technology can change the world, we cannot avert our eyes, pretend it is not happening, or make sweeping generalizations based on our current ways of explaining phenomenon. We need to dig deep, to open our eyes by allowing ourselves to peer through the eyes and hearts of the next generation—to listen and let the children open our minds. Together, we may be able to create a new brand of wisdom and hope that creates new environments for idea generation and makes the world a better place.

And so, we welcome and challenge you to join us in this exploratory learning community—and to work differently together to understand the tremendous potential of our young people around the world and to help this next generation take on the mantle of leadership that will make this world a better one. The cascading set of concepts emerging from this effort so far is profound . . . and has great potential for impact. We invite you to join us in this journey—and to forge new and promising pathways with the Power Users and with each other.

This is not just a dream—it is a real possibility; if we have the will and the desire to open ourselves to the promises it holds.

Structure for Management and Global Collaboration of the Long-Term Research Initiative



The International Power Users of Technology Directorate is the management and research control center for this 20-year initiative. It provides overall conceptual leadership and oversight; builds global awareness and participation for the Power Users Initiative; and directs partnerships, research, development, and dissemination. The Directorate, a project within Education Development Center, Inc. (EDC), provides fiscal management for the research projects. It was launched by EDC in 2001 and will permanently reside at EDC.

The Global Advisory Panel provides advice and support to the overall initiative. The Panel was established in 2002 to test the Power Users of Technology concept and feasibility of long-term research. Co-chaired by EDC and a rotating representative of the Panel, it meets twice per year. Three meetings have been held to date.

Six Power Users International Research Centers are being established to raise global awareness of the importance of the Power Users Initiative within designated geographies, create a global public presence for the initiative, and ensure participation of

all regions in the world in Power Users research and related activities. The global network of Research Centers will develop a shared research agenda. With EDC the Centers will develop partnerships, projects, and research activities that contribute to the Power Users' mission and goals. Two of six Centers have been identified to date: The Centro Internacional De Politica Economica (CINPE) at the Universidad Nacional de Costa Rica will serve as the coordinating institution for the Latin American Research Center; for Europe, Aalborg University Department of Communication, Postgraduate Research School on Human Centered Informatics in Denmark. Research Centers for North America, Asia, Africa, and Australia have not yet been identified.

International Council of Partners provides for corporate representation and foundation participation in the project and connects the Power Users Initiative to interests of their own constituents. Requirements for participation may include in-kind support or financial contribution, political support, intellectual support, or contribution of significant research and resources to the project. Partners benefit on a sliding scale based on their level of support (Founding Partner, Gold, Silver, and Supporting Partner) by raising questions and issues to be considered in research activities, becoming participants/observers at Advisory Panel meetings, assisting in planning activities, receiving early research results to inform business/philanthropic strategies, and participating in collaborative learning, global alliance building, and site visits. Partners may also collaborate on special projects and co-brand-related reports/events. Partners receive corporate recognition on the Power Users Web site and publications related to Power Users research.

TIMELINES AND MILESTONES

Phase I: Test of Concept During Phase One, EDC and the Advisory Committee found that the Power Users of Technology concept was supported by research, that an International Symposium and long term research initiative would add valuable new knowledge to the field.

Phase II: Information Gathering & Design During Phase Two EDC and the Advisory Committee gathered existing research from related fields, formulated a short and long term research approach and set wheels in motion to leverage investments.

Phase III: Partnership Development & Global Communication Activities During Phase Three EDC and the Advisory Committee formalized the structure of the initiative and its operations, expanded committees to ensure global and industry input and participation, and launched communications and outreach efforts to build partnerships and raise funds necessary to accomplish goals.

Phase IV: Launch of the Long Term Initiative During Phase Four the Power Users Initiative will conduct research and inform policy makers and practitioners on a regular basis through publications, web activities and active utilization of the international network of partners.

Timeline and Milestones

	2002				2003				2004			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase One												
Project Launch by EDC	◆											
Initial Donations for Project Launch		◆										
Recruitment of Blue Ribbon Global Advisory Panel	■	■										
First Advisory Meeting in California, USA		◆										
Stakeholder Focus Groups			◆									
Assumptions, Definitions, Research Questions				◆								
Phase Two	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Second Advisory Meeting in Brussels, Belgium			◆									
Research and Data Gathering Design	■	■	■	■	■	■	■	■	■	■	■	■
White Papers Commissioned						◆						
Fundraising Strategy Initiated	■	■	■	■	■	■	■	■	■	■	■	■
Contributions for Advisory Support						◆						
Third Advisory Meeting in San Jose, Costa Rica						◆						
Phase Three	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Latin American Research Hub Established							◆					
European Research Hub Established							◆					
Other International Hubs in Place								■	■	■	■	■
Project Management & Structure Design							◆					
Web site launch								◆				
World Summit on the Information Society (WSIS) Geneva								◆				
Dinner Party with 20th Century Power Users								■	■	■	■	■
Funding Solicitations & Building Support	■	■	■	■	■	■	■	■	■	■	■	■
Communications and Outreach	■	■	■	■	■	■	■	■	■	■	■	■
International Symposium – 2004									■	■	■	■
Phase Four	2005 – 2010				2011 – 2015				2016 – 2020			
Publish a Comprehensive Five-Year Report		◆										
Release World Wide Data Base of Information				◆								
Report Data & Publish Chronicle of Social Change								■	■	■	■	■

Key Activities and Opportunities to Participate in the Power Users Initiative

CALL FOR PAPERS—2003/2004

Current Research, Issues, and Questions about Power Users of Technology

Education Development Center, Inc. (EDC), offers the opportunity to write and publish papers on Power Users of Technology from the perspectives of various fields. Papers may inform Initiative panel members of the major theories, research questions, and significant issues in the field as they relate to the real and potential impact of Power Users of Technology on cognition and learning, education, psychology, sociology, economics, medicine, or cultural anthropology; synthesize existing research; or propose and defend hypotheses.

In developing the papers, writers might consider the following:

- What are the major theories/issues/factors that Initiative panel members should be aware of as they design long-term research studies on Power Users of Technology?
- What are the possible impacts of a national policy that raises the level of information technology (IT) literacy for all, so that students leaving grade 12 possess both broad-based and highly sophisticated computer skills? For example, see current trends in IT Pathway/ Pipeline Model: Rethinking Technology Learning in Schools (www.edc.org/EWIT/pipeline.pdf).
- Which are the centers of research and experts in the field who are studying the relationship between technology skill development and your field? What questions are they asking? What do their studies indicate?
- What would a society look like when groups of Power Users of Technology emerge and influence? What would be the consequences should this happen? In what ways might national and international balance of power be impacted?

Who can apply: Organizations and individuals with demonstrated capacity to do this work; graduate students with letters of support from advisors.

Process: Complete and return the attached Letter of Intent form to Joyce Malyn-Smith, Ed.D., by fax: (617) 332-4318 or by e-mail: jmalynsmith@edc.org. Selected papers will be published on the Web and in the collection of research on Power Users of Technology.

How to Participate:

- Propose a paper synthesizing relevant research from your field.
- Critique/review papers.
- Commission papers on specific topics.
- Link to Power Users Web site to disseminate findings.

INTERNATIONAL SYMPOSIUM—2004

The first **International Symposium on Power Users of Technology** is a four-day event planned for fall 2004. The symposium will yield a common definition and understanding of Power Users of Technology and shape the long-term research agenda. The symposium will create an environment for interaction and synergy among three diverse groups who are independently shaping our future:

- a. Visionary IT industry experts who are developing our IT tools and resources (knowledgeable about current and future technology industry trends)
- b. Education/human development experts representing various disciplines (grounded in research and theory related to human potential and learning, who are reforming our education systems)
- c. Children who are Power Users of Technology

Children and adults will work together in teams using technology tools to solve a problem. Problems will be designed to allow youth to demonstrate the depth and breadth of their technology skills and knowledge as well as their preferred ways of working and problem-solving. At the end of the exercise, teams will present their solutions. Adult experts will reflect on what they have learned about Power Users of Technology and generate questions that reflect important issues from their fields that should be addressed in subsequent studies within this initiative. Teams of participant/observers will develop local plans to address Power Users of Technology in their own communities. Symposium outcomes include the following:

- A common definition and understanding of Power Users of Technology, including: a description of who they are; the scope and depth of current uses of technology; examples of what they have created through technology; a vision of their potential human and career development and their potential impact on society and work (based on anticipated technological developments); and an initial set of strategies to nurture their human development as well as their technology skills/interest
- A research agenda defining an initial set of research questions and a conference proceedings document that can be shared with national and international publics
- A cross-generational learning community that continues the dialogue on issues raised at the symposium

Participants: EDC and the International Network of Research Partners will identify and recruit 20 primary participants representing visionary thinkers from the IT industry and the world of learning, and 20 children who are Power Users of Technology and who represent culturally and geographically diverse groups.

How to Participate:

- Nominate researchers and Power Users
- Sponsor Power Users and/or local teams, participants
- Participate as a local, regional, or national participant/observer team
- Attend symposium

For more information, contact: Jmalynsmith@edc.org.

Long-Term Research Plan

Long-term research will build on questions raised at the International Symposium on Power Users of Technology. We will use the baseline data gathered and analyzed through this project to begin a long-term research study that follows cohorts of Power Users for 20 years. We will report on changes in their patterns of practice and examine the impact of these patterns on their personal lives, educational decisions, and career development. We will learn about intended and unintended consequences of using technology and the relationship of long-term, intensive use of technology to cognitive development, conceptual and social development, academic achievement, and career development.

EDC will develop a comprehensive Web site to continuously share information on the longitudinal study. Participating partners and sponsors will have the ability to interact and define study elements and associated materials.

The First Five Years study will include a review of existing research to determine what is known about the characteristics and trajectories of Power Users; in-depth qualitative studies in the first five years to understand Power Users: who they are, how they're different from other youth, what decisions they're making, to document their development; how they experience technology, and why they're Power Users; and quantitative studies and surveys to develop a baseline of data. At the conclusion of the first five years of this project, EDC will publish a comprehensive report describing the effects of technology on Power Users in the form of a multimedia report and documentary that will become a *Chronicle of Social Change—How Power Users of Technology Are Shaping Our World*.

Beyond the first five years, we will broaden the research to generalize these learnings to the larger group of Power Users, accounting for international, gender, ethnicity, and class differences. After each three- to five-year cycle of research, policy briefs will be written to describe the topography of the Power Users phenomenon and call for further research into specific questions. EDC will issue major reports as the cohorts of Power Users pass through key transitions, e.g., middle to high school, high school to college or work, college to work, and five years on the job. EDC and its international partners will develop a comprehensive Worldwide Data Base of Information on Power Users of Technology and publish progress reports every three to five years of the study and as needed.

To date, initial contributors to the research study are: EDC, Microsoft, California State University at Sacramento's Institute for the Study of Politics and Media, Statistics Canada, PLATO Learning, PTC Software, George Lucas Educational Foundation, PLATO Learning, and CINPE at the Universidad Nacional de Costa Rica. Pending proposals are under consideration by National Science Foundation and Educational Testing Service (ETS). Additional grant requests are under solicitation from government agencies such as Department of Defense, National Science Foundation, World Bank, European Government Foundations, private foundations, and private corporations.

How can you participate in the Power Users Initiative?

Raise awareness of the Power Users Initiative within your own networks, linking the Power Users Initiative to your Web site, creating venues to share information on Power Users by inviting the Initiative to present at conference, write articles for journals/newsletters, and chapters for books.

Respond to the Call for Papers to synthesize existing research on Power Users of Technology and/or test new hypotheses.

Become active in the International Power Users community. Join Power Users of Technology online discussion groups.

Nominate Institutions to serve as Regional Research Partners (Africa, Asia, Australia, and North America seats available).

Provide internship opportunities for students to participate in Power User research, projects, and activities.

Provide scholarships for Power Users in your region to participate in the International Symposium in 2004; sponsor teams of educators/content experts to serve as participant observers.

Join the International Council of Partners, which provides financial support for the Power Users Initiative and is planning the first International Power Users Symposium, at three levels:

- Founding Partner
- Gold
- Silver
- Supporting Partner

Support regional Power Users research and activities through grants, in-kind support, and partnership in your own research or program projects.

For more information, contact:

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Appendices

Appendix A

Directorate Staff and Consulting Team

- **Dr. Joyce Malyn-Smith**, director of Strategic initiatives in Workforce and Human Development at EDC's Center for Education, Employment and Community, leads the Power Users Initiative.
- **Ms. Vivian Guilfooy**, senior vice president, EDC, and director of EDC's Center for Education, Employment and Community, is co-principal investigator and technical monitor for the Power Users Initiative.
- **Dr. Franz Rameckers**, director of EDC, Europe, builds European partnerships for the Power Users Initiative.
- **Kempster Group**: assists in the facilitation of the international advisory process, strategic alliance building, project communications, and fundraising for the project. The firm's global Information and Communications Technologies (ICT) Literacy effort provides an e-communications platform and networking mechanism for gathering resources and identifying global researchers that will contribute to the study. Brenda@Kempstergroup.com and Heinz@Kempstergroup.com
(See www.ictliteracy.info.)

Current Members of the Global Advisory Panel include the following:

- **Dr. Milton Chen—executive director, George Lucas Foundation (GLEF)**, was founding director of the KQED Center for Education & Lifelong Learning (PBS) in San Francisco; director of research for Sesame Workshop (*Sesame Street*, *The Electric Company*, and *3-2-1 Contact*) in New York, assistant professor at the Harvard Graduate School of Education, and author of more than 30 books, chapters, and articles.
- **Dr. Jason Chu—chief operating officer, DigiPen (USA) Corporation**, and member of the Board of Directors of the Washington Federation of Private Career Schools and Colleges, developed and wrote the world's first curriculum for a Bachelor of Science degree in real-time interactive simulation (game programming) in 1996. He initiated a first-of-its-kind collaboration to bring computer science and computer animation to high school students by applying the various topics into game productions in order to increase interest in mathematics and sciences.

- **Dr. Lone Dirckinck-Holmfeld**—an internationally known researcher and expert in the field of learning in virtual environments, human computer interaction, and ICT learning and didactics; and a research professor on ICT and Learning at Aalborg University, Department of Communications, in Denmark. Her main field of research is computer-supported (distance) collaborative learning, participatory design, and implementation. She has written and co-written several books and more than 100 papers, articles, and reports on ICT and learning. Her most recent book is *Learning in Virtual Environments*, Samfundslitteratur Press (2002).
- **Dr. Randy Hinrichs**—**director, Research Microsoft Corporation**, directs the Learning Science and Technology research group in Microsoft Research responsible for researching next-generation learning environments, extending learning from K–12 through universities and into workforce lifelong learning. Author of *Web Page Design: A Different Multimedia* (cognitive and interactivity design) and *Intranets: What's the Bottom Line?* (creating learning organizations with intranet technology), he is a frequent keynoter and publisher of thought leadership in technology in education.
- **Denyse Leslie**—**Education Testing Service**
- **Mr. Jeffrey Munks**—**executive learning officer, United States Navy**, is responsible for training and professional development for senior executives. He served as chairman and CEO of Arista Knowledge Systems, leading an effort to deliver the first of the Next Generation e-learning Management Systems.
- **Dr. Ellen M. Nelson**—**CEO of Decision Development Corporation** and a leader in the development of educational materials that use the constructivist approach and technology, managed the design and development of more than 80 educational software, video, and print products for DDC and other publishers such as Silver Burdett & Ginn and Harcourt Brace Jovanovich.
- **Dr. Barbara O'Connor**—**professor of Communications & Media at California State University, Sacramento**, is director of the University's Center for the Study of Politics and Media. Former chair of both the California Educational Technology Committee and the California Technology CEO Task Force, she was a founder and former chair of National Alliance for Public Technology, a national advocacy group focused on universal access and telecommunications reform—a key player in the national telecommunications reform policy signed by President Clinton in 1996. She recently served as chair of the Educational Testing Services Information and Communications Technology Literacy Advisory Panel.
- **Mr. Steve Coulter**—**representing Power Users Public Policy and Consumer Advocacy**, spent 20 years as vice president of Pacific Bell responsible for technology, philanthropy, and public and social policy issues. A former radio and TV journalist, university instructor, and small-business owner, he continues to be active in helping San Francisco rebuild its public library system, having spent a dozen years as a library commissioner under three mayors. He now works as an independent consultant on public strategy and funding to philanthropic and consumer interest groups, and business.

- **Dr. Jose Luis Rueda—representing Agricultural and Economic R&D for developing countries**, is an independent consultant in sustainable research development who has lead the Consortium for the Sustainable Management of Natural Resources in the Andean Region and served as assistant to the deputy director general for research at the International Potato Center, Lima, Peru (US/AID, World Bank).
- **Dr. Edward J. Salazar—deputy political advisor at the U.S. Mission, NATO**, is an active proponent of integrative language policies and technologies in education and the workplace. He served on the Board of Advisors for the National Language Resource Center and continues to serve on the Board of the prestigious Monterey Institute of International Studies. He is a key player in creating and implementing landmark agreements with Moscow to build new mechanisms of trust and cooperation between Russia and the Allies.
- **Dr. Olman Segura-Bonilla—representing International Economic Policy Research**, is director of the Research Program in the International Center for Economic Policies for Sustainable Development (CINPE), Universidad Nacional de Costa Rica, and a member of the International Society for Ecological Economics. An international expert in ecological economics, innovation and technological change, he has written several books and articles on the subject.

Appendix B:

ICT4D Information and Communication Technologies for Development

The Danish Ministry of Foreign Affairs in cooperation with the international project on Power Users of Technology, the international project on Virtual Learning and Sustainable Development in Central America (VISCA), and the Danish University consortium on virtual learning environments (MIL) invites you to participate in two roundtable seminars on Information and Communication Technology (ICT) and Learning. These roundtable seminars will be held Wednesday, Thursday, and Friday; December 10th–12th, 2003

Roundtable Seminar Day 1

Date: Wednesday the 10th of December, 2003, 16:00–18:00
Location: Geneva Palexpo Conference Center, Room no. 18
Contact: Dr. Joyce Malyn-Smith (jmalynsmith@edc.org)

Power Users of Technology

Agenda

16:00–17:15 **Power Users Overview and Brief Presentations**
17:15–18:00 **Networking and Social Time**

Power Users of information and communication technologies are individuals who break out of the confines of traditional learning, demographic, or technological barriers by constantly using, sharing, creating, producing, or changing information in creative, innovative, and/or unintended ways so that they become force multipliers in their own environments. Children who are Power Users of Technology have had intensive interactions with technologies over long periods. By the age of 10–15 years old, they are confidently in control of their technologies and have become self-directed learners, seeking and constructing new learning from real and virtual environments and from each other. As experts with technology, they exhibit expert ways of learning and working.

As pockets of these youth emerge, we are beginning to see patterns of a decentralized social system of Power Users of Technology emerging worldwide, pushing traditional boundaries, challenging our assumptions about authority, and current theories of learning and intelligence.

We see them in our classrooms challenging our teachers by being able to access information on any topic, at any time, to any depth of concept or level of technical sophistication that interests them. We see them bored by curricula that emphasize knowledge that they can find readily on their own, or that treat them as novices rather than the “expert learners” they have become. We see them entering our military, asking why and wanting to know about the information base from which decisions are made. We are beginning to see them entering the business world as technology entrepreneurs pushing the boundaries of our social system and challenging us to think through new “rules” (e.g., Napster).

What do we know about these youth? Are they becoming a global culture of their own? What are their beliefs and values? What impact will they have on our families and communities? on our economy? on the balance of power and wealth of nations? What role will they take in sustainable development?

The roundtable seminar provides the participants with an introduction and overview of the Power Users Initiative, the rationale for short- and long-term research, and the planned activities of the Power Users Directorate and International Blue Ribbon Advisory Committee to build a global research network with regional research centers to learn from and with Power Users of Technology emerging in nations around the world. Taking opportunity of the intercultural setting of IST4D, special attention will be given to the focus on diversity and different perspectives of identifying Power Users. The meeting will address potential cooperation partners and resource sponsors.

Program

- **Presentations**

Chair: Dr. Joyce Malyn-Smith, Director, Center for Education, Employment and Community, Education Development Center, Inc.

The Power User Initiative—Rationale and Welcome

by Vivian Guilfooy, Senior Vice President, Education Development Center, Inc. (Video)

Power Users Initiative—Overview, what we have learned so far, and how to participate

by Dr. Joyce Malyn-Smith, Director, Center for Education, Employment and Community, Education Development Center, Inc.

The importance of research on learning and the new group of power users of technology

by Dr. Lone Dirckinck-Holmfeld, Professor, E-learning Lab, Aalborg University

What is a power user of technology?—a Scandinavian perspective

by Dr. Birgitte Holm Sorensen, Research Director, the Danish University of Education

Power Users of Technology as a key element in sustainable development—a Central American perspective

by Dr. Olman Segura, Director, and/or Dr. Leinar Vargas, Universidad Nacional Autonoma de Costa Rica

- **Networking and Social Time**

Roundtable Seminar Day 2

Thursday the 11th of December, 2003, 10:00–12:00

Location: Geneva Palexpo Conference Center Room, no. 14

Contact: Dr. Joyce Malyn-Smith (jmalynsmith@edc.org) and Dr. Lone Dirckinck-Holmfeld (lone@hum.auc.dk)

Jumping across the Digital Divide—from Power Users to Virtual Learning Environment

Agenda

10:00 –11.00 Power users and the digital divide

11.00 –12.00 Participant discussions, partnership, and event planning

Power users and the digital divide

Chair: Dr. Joyce Malyn-Smith, Director, Center for Education, Employment and Community, Education Development Center, Inc.

Recap of previous days' overviews of Power Users

by Dr. Joyce Malyn-Smith, Director, Center for Education, Employment and Community, Education Development Center, Inc.

Challenges for universities—The VISCA case

by Dr. Olman Segura, Universidad Nacional de Costa Rica

Development of software industry in Costa Rica

by Dr. Leinar Vargas, Universidad Nacional de Costa Rica

- **Participant discussions, partnership, and event planning**

- **Respondents, discussants and special guests:**

Education Perspective

By Dr. Ulf Lundin, Director, European Schoolnet

Importance of Power Users as a Global Initiative

By Mr. Amir Dossal, Executive Director, United Nations Fund for International Partnerships

United States WSIS Delegation

Dr. Ray Myers, Office of Educational Technology, U.S. Department of Education

What it Means to be a Power User

Mr. Michael Furdyk, Cofounder and Director of Technology, TakingITGlobal.org

Roundtable Seminar Day 3

Friday the 12th of December, 2003, 1:00–18:00

Location: Geneva Palexpo Conference Center Room, no. 17

Contacts: Dr. Lone Dirckinck-Holmfeld (lone@hum.auc.dk) or Winnie Ritterbusch, Project Director, (winniebr@hum.auc.dk)

A bridge? Sustainable development strategies for virtual learning environments

Agenda

16.00–16.35: The cases of a VISCA, Virtual Learning and Sustainable Development in Central America and the Case of MIL, Master in ICT and Learning

16.35–17.05: Roundtable Discussion

17.05–18.00: From Dialogue to Action

The ICT technology embeds significant and far-reaching possibilities for virtual learning. In principle it becomes possible to bridge the digital divide through building cross-regional virtual learning environments: Any place can be reached by anybody at any time. Building bridges is, however, not only a question of network and hardware. It also addresses fundamental aspects such as how do we understand learning, what pedagogical traditions do we build on, what strategies are we able to implement, etc. Learning at a local level may become global, but a conceptual model, which incorporates social and cultural diversity, and enhances democratic processes is a must. Hence systems, which enhance sustainable development must be designed just as cross-institutional reflections, collaboration, and dialogue based on equity among participants is required.

Taking opportunity of the intercultural setting of IST4D, the roundtable seminar will especially focus on the diversity and different perspectives on sustainable cross-regional virtual learning environment. What is it? What are the challenges and barriers? How to develop it? The meeting will address potential cooperation partners and resource sponsors. We aim at establishing international research and development projects on developing virtual learning environments within higher education and lifelong learning.

Program

• Presentations

Chair: Dr. Oluf Danielsen, Professor, Roskilde University, Denmark

Introduction and background

by Dr. Janni Nielsen, Professor, Copenhagen Business School, Denmark

Fighting the digital divide—the case of VISCA, virtual learning and sustainable development in Central America

by Dr. Olman Segura, Universidad Nacional de Costa Rica

Bridging the digital divide — the case of MIL (Master in ICT and Learning).
by Dr. Lone Dirckinck-Holmfeld, Professor, Aalborg University, Denmark

• **Roundtable: reflection**

Chair: Dr. Birgitte Holm Sørensen, Research Director, the Danish University of Education

• **Invited Respondents, Discussants and Special Guests:**

Challenges and possibilities within universities

By Professor Vera Solis, Dean, Universidad Centro Americano de Nicaragua: (comment by paper)

By Mario Lopez, Research Director, Universidad Nacional de Nicaragua: (comment by paper)

• *** From Dialogue to Action: Building Bridges**

Chair and organisers: Dr. Oluf Danielsen, Professor, Roskilde University and Dr. Janni Nielsen, Professor, Copenhagen Business School, Denmark

- Visions and/or needs
- Specifications
- Possible cooperation

Webcast

In cooperation with Macromedia, the roundtable seminars will be recorded for Webcasting later.

Pre conference presentation information and live audio coverage of the WSIS and ICT4D Roundtable during the conference is available at www.ictliteracy.info . At the site, click to register in the ICT Community in order to participate in the ongoing discussions and provide your input to Roundtable presenters.

DANIDA STAND

Informal and formal discussions for partners and sponsors interested in project collaboration

- Meet the Power Users (Thursday, December 11th – 15:00-17:00)
Dr. Joyce Malyn-Smith

- Meet VISCA: Virtual Learning and Sustainable Development in Central America ()
Dr. Olman Segura, Dr. Leinar Vargas

- Meet MIL: Master in ICT and Learning ()
*Dr. Janni Nielsen, Professor, Dr. Birgitte Holm Sorensen, Dr. Lone Dirckinck-Holmfeld
Dr. Bo Fibiger, Professor, Århus University; Winnie Ritterbusch, Project Director, Aalborg University, Denmark*

Organizers

Power Users of Technology

VISCA: Virtual Learning and Sustainable Development in Central America

MIL: Master in Information and communication technology and Learning

Partners and Supporters

DANIDA

EDC

Universidad Nacional Autonoma de Costa Rica

Universidad CentroAmericano de Nicaragua

Universidad Nacional Autonoma de Nicaragua

Aalborg University

Århus University

Danish University of Education

Copenhagen Business School

Roskilde University

Macromedia