Inviting Online Education

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Introduction

Living in a well-wired world during a frenetic age of instantaneous communication, some people have become technophiles who are quite sophisticated in transmitting, receiving, and constructing messages using an ever-expanding array of information and communication technologies (ICT). However, many others have not fared as well. Some of these “have-nots” have become technophobes, dubious about the cost, complexity, over-reliance, and ever increasing demands for speed and power that these technologies demand. To them gadgetry is insidious, not only taking over their professional lives but prying into their private lives as well. Some technophobes may nostalgically yearn for the “Good Old Days,” the illusionary time when the human touch was thought to be ever present and machines knew their place and kept a respectful distance. Others may fear the intrusive and arcane nature of what they perceive as the unreal world of “techies” and “cyberspace.”

To the delight of the technophiles and the dismay of the technophobes, information and communication technology appears to be gaining in both popularity and
application. A report by the U.S. Census Bureau indicates that at the start of the millennium, 51% of U.S. households had computers and Internet access (Newburger 2001). At the same time, schools in the United States have spent more than $8 billion on desktop computers, software, and infrastructure for Internet access (Smerdon 2000).

Online education — the use of information and communication technologies to deliver, support, or supplement classroom instruction — holds enormous implications for schools, educators, and society. However, the use of such technology in education needs to be examined prudently by those repelled by, and those smitten by, ICT’s power and potential. For technophobes, this means overcoming some anxieties and fears that are roadblocks to dealing with online education’s possibilities. For technophiles, this means understanding the anxieties and concerns of those less expert in using technology and recognizing the possible problems that might be obscured by unbridled enthusiasm for technological solutions. For both groups, this means examining the intended and unintended consequences of online education. Technophobes and technophiles alike will benefit from a prudent approach to online education — whether it is at a distance or adapted for use in a traditional classroom — an approach that attempts to be intentional, informed, inviting, integrated, and imaginative.

Invitational education (Purkey and Novak 1996; Novak and Purkey 2001; Novak 2002) provides a theory of practice that can be of assistance to educators developing online environments who seek to work from a
democratically oriented, person-centered perspective. It is based on five interlocking assumptions that provide educators with an operating framework based on care, trust, respect, and hope. The five assumptions are:

1. People are valuable, able, and responsible and should be treated accordingly.
2. Educating should be a collaborative and cooperative activity.
3. The process is the product in the making.
4. People possess untapped potential in all areas of worthwhile endeavor.
5. This potential can best be realized by places, policies, programs, and processes specifically designed to invite development and by people who are intentionally inviting with themselves and others personally and professionally (Purkey and Novak 1996, p. 3).

**Online Education in a Democratic Society**

Education for a democratic society is fundamentally an imaginative act of hope (Purkey and Novak 1996). As such, it involves a commitment to the development of individual potential and social practices that enable all involved in the educative process to savor, understand, and better their personal and social experiences (Novak 2002). Online educational possibilities need to be grounded in such hope and imaginative acts if they are to be ethical endeavours for growth and development.

The hope emphasized here is not merely that students and teachers will become competent in dealing with the
online world, but that they, and everyone involved in the educative process, will critically examine the underlying assumptions and consequences of online education.

A prudent perspective on technology is called for because a commitment to technology in education is not value-neutral. Such a commitment involves an investment of time, effort, money, and the reallocation of other scarce resources into the development of a technologically mediated education system that is based on instantaneous communication and information gratification that, at present, privileges certain technological, economic, social, and personal interests.

Education for a democratic society requires its participants to examine these interests in terms of implications for democratic living. Therefore online education has to go beyond merely technical and psychological rationales to justify its expanding influence in the education community. The larger social implications of online education also need to be considered.

**The Technologically Prudent Approach**

The technologically prudent approach to online teaching and learning alerts everyone to be mindful of issues and concerns that might be ignored by the heartiest technophiles and the staunchest technophobes. The ideas offered here for online education include, but move beyond, the narrow confines of technical or practical effectiveness into the heart of democratic development for schools, where information and communication technology is used to develop virtual environments for
the support or delivery of instruction. The ideas that form the basis of the prudent approach to online education offered here look at being intentional, informed, inviting, integrated, and imaginative.
Being Intentional: A Look at Two Schools that Lack It

Many schools have already embraced the technology of online education and proudly display their hardware and software as a badge of honor for all to see. Here are two such schools, a composite elementary and a composite secondary school, where the implicit and explicit messages that are transmitted about technology and education are unintentional and often disinviting.

A High-Tech Elementary School

Picture an elementary school that is technologically advanced, where administrators, most teachers, and some students are excited by the possibilities that online education may provide. Everything at this school, from the electronic “jumbotron” sign at the front gate to the networked television monitors in all the classrooms, suggests a school that is technology ready. The electronic display at the gate shows the school’s logo and mascot, as well as the corporate logos of the sponsors that were needed to help pay for the sign. A
scrolling marquee under the logo lists the number of games the school’s soccer team has won this season and provides information about upcoming matches. A flat metal sign near the main doors informs everyone that:

“This is a Video Safe-T-School. We Watch 24/7. Visitors MUST report to the Main Office.”

The principal is proud of the school’s student laptop program, high-speed wireless Internet connection, and classroom smart display technologies that were initially funded through a federal Star Schools grant. She longs for more funding to update the ICT systems and to be able to integrate technology across the curriculum. At public speaking sessions, the principal reminds trustees, local politicians, and parents that they should be delighted by the school’s “state of the art technology” because it will improve student knowledge and skills in science, math, languages, and technological literacy.

The school has an Information Technology Officer, who is also the librarian, half-time Spanish teacher, and coach of the school’s soccer team. The coach likes to refer to himself as the school’s “go-to computer guy” because he is in charge of the school’s laptop program. Beginning in grade five, all students at the school are provided with a laptop computer equipped with an assortment of software licensed by the school board. When students or teachers have trouble with their leased laptops, they go to the Information Technology Officer to have the malfunctioning computer sent back to the leasing company for repair or replacement. Students and teachers tend to return their laptops at the first sign of trouble, so the
Information Technology Officer says he sometimes feels more like a warehouse clerk than a professional educator.

Teachers and administrators at this school are provided with school-based e-mail accounts and Internet access from home. Students and nonteaching staff are not provided with e-mail accounts or home Internet access.

While the laptop program eliminated the need for computer labs at the school, it did not eliminate the need for printers and printing. To accommodate the demand, there are a number of laser printers at various locations throughout the school for teachers and staff to use. Students cannot use the printers without teacher or staff permission and supervision. Signs above the printers warn that the printers are “For Staff Use Only.”

When they receive a laptop in grade five, students are placed in “laptop classes,” where they are required to save class notes and work-in-progress to disk and the school’s shared network drives. Teachers are able to view all students’ work in these virtual spaces, and some students have expressed the view that “Big Brother” is always watching them.

Activities in laptop classes generally involve students accessing and searching Internet databases or websites for information on a given topic or theme, and then working on individual lesson modules related to the topics. Teachers have observed that some students have used the school’s Internet connection inappropriately to do their assignments or to avoid doing their work. For example, students have been caught sending messages to chatrooms and student discussion groups asking for answers to assignment questions or tests. Other students
have been caught downloading MP3 music files or video clips and playing online video games instead of doing their work. However, most students work quietly and independently on the lesson modules and only bother teachers when they run into trouble with a lesson or the technology.

This sketch of a high-tech elementary school depicts a landscape that abounds with technology. In this environment, some students and teachers are techno-philes who revel in using information and communication technology. Others are technophobes who are anxious and concerned about the technology and their own abilities to work with it. However, most are “technology survivors” who have learned how to cope with information and communication technology and are largely indifferent to its various uses in teaching and learning.

A High-Tech Secondary School

Now let us imagine a secondary school that has embraced information and communication technology. This school also is monitored electronically, and a sign on the fence warns that “Trespassers Will be Prosecuted.” The hallway leading to the main office is lined with display cases that host a variety of gleaming trophies and photos of various school sports teams, past and present. A television monitor sits on a wall stand beside the main office, and similar TV monitors are visible in hallways throughout the school. A piece of paper taped to the bottom of the TV screen displays a typed
message that reads, "All announcements for broadcast due by Wed at 12:00 or they will NOT air." The dials from the television monitor have been removed, and a metal bar has been screwed over the function controls. The school used to have a media production course where students created daily school announcements that were broadcast on the television monitors; but there is no teacher for the program this year, so the televisions are not in use and the program is not running.

Federal funding also initially provided for this school's computer labs and T1 Internet connection. A framed newspaper article in the office details how a teacher at the school won an award for a technology initiative in cooperation with an educational software development company. The teacher, who worked in the software and video development industry prior to teaching, used his connections to develop the project for his senior class communications students. Students were employed as software beta-testers and reviewers, and the students' positive reviews were published in a software trade journal and website. It had taken the teacher five years to develop and hone the program, but this year he gave up teaching and went back to industry.

This high school has two computer labs. The smaller lab is crammed with a dozen workstations and serves as a teacher work area. A sign on the door reads, "Curriculum Development Lab: Teachers and Staff Only." At the back of the lab, jammed along the wall, there is a large work table where a phone, a loose collection of computer magazines and newspapers, and a coffee carafe and hot plate generally reside. A laser printer sits
precariously on one corner of the table. A sign above the printer indicates that “Accounts Must be Paid in Full to Print.”

A shelf of thick books is visible on a metal shelf above the worktable. The titles include Internet Basics for Dummies and Idiot’s Guide to Microsoft Office. A padlocked wire cage cabinet for storing computers in need of repair and assorted components dominates one wall of the small lab. There is a corkboard above the worktable that has a thick sheaf of yellowed and torn papers attached to it. These are the Computer Acceptable Use Policies, Copyright Rules and Regulations, licenses, and technical documents for the various software packages available in the lab.

The school’s large computer lab is another add-on to the old school building. The lab sits in the remains of the school’s machine shop, and occasionally the smell of machine oil wafts up from the concrete floor. The room is cavernous, and sound tends to reverberate in strange ways, so everyone has to talk loudly to be heard. The lab contains 50 computer workstations arranged along the walls with a couple of long tables arranged in the center of the room. An overhead projector sits on the corner of one of the tables. The projector is used with a panel that can be attached to the instructor’s computer to project the computer screen onto a large screen at the front of the class. The lab often is unattended and is located in an older area of the school, so the projection panel is removed after every class and stored in a locked area. On the back wall of the lab there are two large, printed signs. One reads, “Never share your password,” and the other lists “Computer Lab Rules,” including:
NO food or drink allowed in this lab.
NO video gaming allowed on these machines.
NO MP3 downloads or music allowed.
You MUST file a report for all support calls.
NEVER install software on these workstations.
ANY files saved to desktop are removed daily.
ALWAYS log off before you leave the lab.

This school also has a technology officer. Her job is to help teachers learn how to use technology effectively in their classrooms. She was hired for the job because she is a computer engineer who has always been interested in teaching. She has a reputation for being able, with a few keystrokes, to solve students’ computer problems. She is a technophile who believes fervently that technology will improve education.

The technology officer has worked with many of the school’s teachers to get them to try various software applications for presentations, curriculum planning, and student grading. For some teachers this has proven helpful and exciting. For others it simply has meant more work and more anxiety. Some teachers are anxious because the principal has mandated that every teacher must prepare and follow a technology skills development plan. The development plan will be assessed in every teacher’s annual review by the principal.

The school’s web page is also part of the technology officer’s job. She is proud of the information she has placed on the school site for teachers and parents. She regrets that she does not have as much time as she wants to keep the site fresh and current. She has been so busy
with other parts of her job that she has not been able to update the website for months. The school website provides a list of teachers’ e-mail addresses. The technology officer felt this would be highly popular with both parents and teachers. However, teachers generally did not have much time to read or respond to e-mail during the school day, and checking school e-mail from home was often frustrating because of the limited phone access to the school’s servers. Many parents and teachers were annoyed by the school’s current system of e-mail communication, and the principal was talking about giving all students e-mail access from home.

Summary

Technology is anxiety producing for some of the teachers and students at both of these high-tech schools. For teachers learning to work with technology, it may be difficult and time consuming. They may view the technology as unreliable, opening the risk of not being able to cover important curriculum in allotted periods of time. For students, ICT may not match their particular learning styles and needs, or it may make them feel isolated and inadequate in terms of their own learning.

The need to justify a school’s expenditure on ICT also makes some teachers and parents anxious. Administrators looking at the cost of these technologies may feel a pressure to justify the expenditure. Some may suggest increasing class sizes or reducing arts and co-curricular programming to help defray the cost of technology. Others may want teachers to use the technology more
in their daily practice. For some teachers, information and communication technology seems to be a "Trojan horse" because, once it is introduced into schools, it can destroy budgets for other programs or promote a technologically focused curriculum that makes these teachers feel as if their jobs are less creative and meaningful.

These composite schools may abound with state-of-the-art information and communication technology, but they lack an intentional, informed, and imaginative approach to integrating people and technology within an educative environment. Technophiles and technophobes at these schools would both benefit from a more intentionally prudent approach to working with technology. Many individuals at these schools are not savoring, understanding, or bettering their experiences with technology because they are rushed, overloaded with information, and not able to reflect on the meaning of what they are doing. Some are anxious and driven by pressure to fit into technology-focused programs at their schools. Many are uninformed about the myths and realities of online education.
Being Informed: Some Myths of Online Education

The schools we visited in the previous section are “unintentional” partly because they have based their approach to online education on myths of technology that are informed by unrealistic or untested claims. A great deal of practice with regard to technology is based on an overarching mythology that maintains that “technology is the answer.” This myth has become implicit in many approaches to online education. It assumes that there is common agreement on the what, how, and why of technology’s use in education. But when it comes to technology in education, it is clear that one size does not fit all.

The pedagogical effectiveness of online education depends on an interrelated number of factors including, but not limited to, the type of course, the teacher, the level of instruction, and the student. While not every student will benefit from online education, all students benefit from interacting with caring and supportive teachers. Online education will succeed as an educative
environment to the extent teachers are able to provide a democratic online structure that preserves dignity and encourages communication. Alternatively, if teachers use technology to overload students with information, then online environments will freeze students in their tracks.

**Ten Myths About Online Education**

There is still much research and reflection needed to determine what online education should, can, or can not do. The following 10 myths about online education are presented for consideration and discussion by prudent technophiles and technophobes.

1. *Online Education Is Easy to Evaluate.* Whether student learning is improved or enhanced through the use of information and communication technology will be empirically determined someday, but until then we should resist simplistic comparisons of online education to traditional instruction. Ehrmann (1995) notes that learning is not so well structured or consistently defined to enable researchers to compare a technology or innovation against a “traditional” process without going into great detail about what that process is. He also reminds us that defining what is meant by traditional in terms of materials, methods, and motives limits research to very small and time-dependent samples. This does not mean that we should not evaluate, but that determining with any empirical certainty the effectiveness of online education will take considerable time, effort, and long-term testing.
2. Online Teaching Equals Better Learning. Information and communication technology can provide greater numbers of students with access to a variety of information that they might not have been able to access before, but this is not the same as students developing an understanding of important concepts and the interplay of ideas. Perkins (1992) notes that understanding is a consequence of thinking and not merely receiving information. Confusion between “informing” and “educating” abounds, requiring the technologically prudent to distinguish between having access to the wealth of information that technology can provide and inviting students to reach new depths of understanding and personal growth that develop through face-to-face interaction.

3. Wiring Schools Will Revolutionize Education. Technology may well have the potential to revolutionize education, but simply wiring schools and providing teachers and students with computers and Internet access will never have a lasting effect. The nexus of educational software and school programming often tends to create a rigidity of structure and use that can not address the increasingly varied needs that students bring to school. Education is an important and complex human undertaking that cannot be delegated to an electronic script. Technology will revolutionize teaching only to the degree that it can be used as a tool for communicating and deepening human experience.

4. Best Online Practices Are Known. There is little agreement on what educational roles and purpose informa-
tion and communication technologies can serve in the classroom. Every teacher, administrator, student, and parent may have a different view on what is necessary, possible, or even feasible with online technology. Mining a definitive list of best-practices from this constantly shifting landscape is difficult, if not impossible. Much more experimentation and reflection need to be done before we can say with any degree of certainty what will work and what will not in online education practice.

5. More Technology Means Better Schools. Today most schools have computers, Internet access, and a variety of software programs for teaching and learning. And yet all this technology alone cannot significantly change teaching practice or academic outcomes for the majority of students (Schacter and Fagnano 1999). Technology, in and of itself, does not create positive change in schools or practice. However, there is ample evidence that caring and dedicated teachers can and do make a positive difference in schools and in students’ lives. Technology may make a difference in student academic success in specific subject or skill areas, but only if teachers and programs explicitly target the use of technology to reach these educational goals. Learning about technology is not the same as learning to teach with technology. The road to better schools may be paved with technology, but it will be planned and built by teachers.

6. Online Education Saves Teachers Time. For many teachers and students, learning to work with online technology is time consuming, difficult, and ultimately
inconvenient. Consider a teacher who wants to use a simulation in a high school history course. The teacher must research and find a suitable software simulation that is licensed by the school and that will run on the machines available in the school lab. Next the teacher must learn to use the simulation and experiment with how it might be used in class. Once the lesson is planned, lab schedules, teaching students to work with the simulation, and unforeseen technical problems may limit the amount of in-class time that can be allotted for the lesson. Some teachers clearly view preparing a technologically supported lesson as a much greater demand on their time and energy than preparing a classroom activity without technology. The extra effort and planning involved in technologically mediated lessons also may promote anxieties about technology and about risking scarce lesson time on what some teachers view as less than dependable supplements to more traditional classroom methods (Di Petta, Novak, and Marini 2001).

7. Online Education Saves Money. This myth suggests that online technologies reduce the need for teachers and classrooms and ultimately save schools money. However, the full costs of information and communication technology in schools are not easily measured or monitored. Infrastructure, maintenance, and upgrading costs are ongoing and not a one-time expense for schools. Moreover, development expenses and reasonable estimates for teacher time, training, and support staff expenditures are often omitted from the cost estimates for online technology. Ultimately, even if online
technology enables schools to reduce the number of teachers and the number of classrooms or labs, such cost benefits may be offset by the need for hardware and infrastructure upgrades and more people in technical support roles. More technology does not reduce the need for teachers; rather, it increases the need for continuous teacher training to develop and practice the skills needed to work with technology.

8. Online Education Bridges the Digital Divide. The desire to bridge what has been called the “digital divide” that separates the “have” and the “have-not” schools is laudable. However, providing information and communication technology to all schools does little to address the other social, political, and economic conditions that contribute to the disparities that separate “have” and “have-not” schools and students in North America. Many schools with technology often lack the means and funding for teacher training and support. Teacher, student, and parental attitudes toward student success and ability also may differ and may shape how technology is used in the classroom. Students in economically disadvantaged areas are much more likely to use computers for drill-and-practice and supplementary learning tasks. Schools in more prosperous areas are more likely to use computer technology in project-based applications that are tied to problem solving or inquiry and in collaborative learning activities where the student is working with the online technology to achieve an educational goal and not as a supplementary activity to learning.
Online Technology Will Empower Teachers. Many innovative and successful online education programs are the result of the commitment, expertise, and resourcefulness of individual teachers. These programs rise and fall with the willingness of dedicated teachers to contribute their time and energy to maintaining and using technology in creative ways. For some teachers, working with technology is a leap of faith that hones their professional skills in the classroom and reinforces their personal beliefs in the efficacy of online education. For others, who may lack adequate support, training, or a technological inclination, technology demands a personal discipline and commitment that is neither liberating nor empowering. Invitational theory suggests that teaching is not a "technology" and teachers are not "technicians" and that online education is simply another environment in which the complex and important human interaction of teaching takes place.

The Internet Is an Education Gold Mine. According to current research, the Internet contains an estimated four billion pages of information; and this is increasing at the rate of 100% a year (Lyman and Varia 2000). The amount of information available for education and research purposes would seem to be a gold mine. However, there is no way for most users to verify the accuracy of information available on the Internet, and much of the available information is general in nature and not always presented in a clearly organized or accessible manner. According to Kornblum (2000), it has been estimated that the percentage of information on the Inter-
net that is useful to any particular person is in the area of 0.01% and dropping. There certainly are nuggets of gold on the Internet for teachers and students to find; but more often than not, such nuggets are buried under mountains of irrelevant information that prudent educators must sift, refine, and examine critically.

Summary

Good teachers have always mentored, coached, facilitated, and encouraged their students by engaging them in active learning. Having an inviting and prudent frame of reference is a way to become more intentional, integrated, and imaginative in the thoughtful practice of online education, for it is a constant reminder of what is truly important in education: an appreciation of people and their development.

Better teaching is not simply the result of better technology. Rather, as invitational theory points out, better teaching is a consequence of teachers who assume as a matter of course that all students are able, valued, and capable of learning important things. Such teachers maintain a people-centered orientation, rather than a machine or instrumental orientation, when dealing with their students, especially in the technologically mediated or virtual environments of online education.
Intentionality involves more than being informed about the workings of online education and seeing beyond its many myths. It also means having a framework for guiding teaching, learning, and democratic practice. Invitational education (Purkey and Novak 1996; Novak and Purkey 2001) provides such a framework by focusing on the complex system of messages that are sent and received in education environments and that inform people of their worth, ability, and self-directing power. The aim of invitational educators is to construct and maintain online ecosystems that are intentionally inviting.

Invitational education focuses on five areas that exist in every online learning environment and works to align these areas to promote sound educational experiences. Just as everyone and everything in law enforcement should invite justice, so everyone and everything in online education should invite meaningful learning experiences and communication. People, places, policies, programs, and processes are the Five P’s that make
up the online education ecosystem. Prudent application of these Five P’s in persistent, resourceful, and courageous ways can work to overcome such challenges as anxiety or technophobia, frustration, pressure to do more with less and in better ways, and lack of attention to unintended consequences.

People

Even though they might not be the most visible part of online education, nothing is more important than the people involved. In the online environment, people construct, maintain, and modify the places, policies, programs, and processes that influence educational experiences. Working with people in intentional and informed ways requires celebrations of online successes and understanding when there are technical or personal frustrations. Online educators have a special obligation to put the human touch on all their work. This can be a great help in overcoming the anxieties of technophobes and a means of stimulating interpersonal growth for technophiles.

Places

Physical spaces and cyberspaces offer a tangible starting point for inviting online education. In terms of physical space, ugly and dirty computer rooms are not inviting. Changing the signs in and around a computer lab to reflect a respectful attitude is a good starting point. In cyber or virtual spaces, people can readily recognize out-of-date websites, dysfunctional or broken
links to resources, and cluttered or uninformative content. Regularly updating websites, correcting grammar and punctuation mistakes, and reducing clutter is another good place to begin.

**Policies**

Policies are the procedures, codes, and rules, written or unwritten, used to structure present and future decisions. The policies created for online education need to reflect and communicate a strong message regarding the value, ability, and responsibility of people. Especially important are how policies regarding access to, and use of, information and communication technology are developed and enforced. An inviting perspective emphasizes a doing-with approach; so it is necessary that teachers, administrators, staff, students, and parents participate in the development of policies for online education.

**Programs**

Programs refer to the curricular and co-curricular activities available in an education setting. These formal and informal activities are an important part of education, and a key element in inviting online education, because many programs that deal with technology tend to focus on narrow goals that neglect the wider concerns. Programs that incorporate online technologies not only should promote technological competence, they also should emphasize the critique or prudent evaluation of information and communication technology’s
effects on culture and society, beginning with the school setting.

**Processes**

Processes deals with the ways the other four P's are integrated in a learning environment. Inviting online success has to be done in inviting ways for inviting ends. To do otherwise is to send a contradictory message and to call into question the intentionality of both the ends and the means. Changing signs in a computer lab to be more inviting, modifying online assignments to provide alternatives for the technologically disinclined, and evaluating the effect of online learning have to be approached in a collaborative, democratic manner. Shared leadership for the design, implementation, and evaluation of online education is based on doing-with processes. Inviting online education means that everyone should have the opportunity to be heard and acknowledged as a valued participant in the online process.

**Levels of Functioning**

Four levels of functioning are also identified in invitational education. Although everyone functions at each level from time to time, it is the level at which a person typically functions with technology that determines his or her direction and approach to online education. To reach the highest levels of invitational functioning requires intentionality, information, and reflective practice.

The inviting approach is not merely doing nice things such as sending positive e-mail messages, including
“smilies” in online communications 😊, or putting up humorous signs in the computer lab. While these may be worthwhile practices, the intention with which they are done is vital. The following levels of inviting provide a check system to monitor the people, places, policies, programs, and processes found in and around the online education environment.

**Intentionally Disinviting**

The most negative and toxic level of human functioning involves those actions, policies, programs, places, and processes that are deliberately designed to demean, dissuade, discourage, defeat, and destroy. In online education, intentionally disinviting functioning might be seen in an instructor who is sarcastic to technophobic students, a computer-use policy that is deliberately discriminatory to those who do not have computers at home, a remedial program that demeans students for not being technologically “with it,” or an administrator sending a deliberately aggressive comment or “flame” in response to an e-mail message from a parent or student.

An illustration of intentionally disinviting functioning can be seen in the case where a student is making the same mistake over and over on a computer, and the instructor takes over the keyboard, hits a few keystrokes to solve the problem, then announces to the whole class, “If you can’t do something this simple, you should be in a beginner class.” Such an intentionally disinviting stance can be disastrous to technophobic students.
Unintentionally Disinviting

The great majority of disinviting forces that exist in and around online education settings are not intended. For the most part, there is no grand conspiracy to take the heart out of online learning. However, because many individuals have never given much thought to a philosophy of intentionality, online policies are established, software programs designed, websites created, processes evolve, and people act in ways that are disinviting without a means of understanding or correcting the problems.

Unintentionally disinviting educators are unaware of how their actions or inactions are perceived by others. However, high dropout rates from online education programs, dissatisfied e-mail or comments from students and parents, discipline problems, silence in online discussions, and failure to engage in or complete online activities are some signs that uncaring or thoughtless behavior may be taking place.

Examples of unintentionally disinviting forces at work can be seen in many computer labs. The sign that reads, "You must have a valid user ID to use this lab," the practice of allowing only the gifted students to use advanced software, the tendency to answer technical questions with bewildering jargon, the teacher who takes over a student’s keyboard to quickly solve a problem and then moves on to help someone else, or teachers who continually tell all students that online education is easy are unaware of the disinviting messages they are transmitting about technology, learning, and people.
Unintentionally Inviting

Educators who usually function at the unintentionally inviting level have stumbled, unreflectively, onto ways of functioning that are often positive and effective. However, they encounter difficulty when asked to explain their success or repeat it in different settings.

Unintentionally inviting teachers may be successful because they exhibit many of the trusting, caring, respecting, and optimistic qualities associated with invitational education. However, because they lack intentionality, they lack consistency and dependability in the actions they exhibit, the policies and programs they establish, and the places and processes they create and maintain.

Unintentionally inviting teachers are somewhat akin to the early barnstorming pilots who “flew by the seat of their pants.” As long as they stayed close to the ground, followed discernible landmarks, and the weather was clear, they were able to function. But when the weather turned bad or night fell, they became disoriented. When situations change, unintentionally inviting teachers experience a disconnection between their old behaviors and current realities. Without a developed perspective to work from, they tend to regress to lower levels of functioning. As someone once said, “flying by the seat of your pants tends to wear thin.”

A teacher functioning at the unintentionally inviting level and new to online education may become disillusioned and cynical when old methods do not work. For example, if group work was successful in one class, the unintentionally inviting teacher will try to use it in a
virtual class setting, even if it clearly isn’t working. Unintentionally inviting educators do not know how to get the fire going once it has burned out. When suffering from charismatic depletion and unable to figure out why things are not working, some of these teachers may be imprudent by becoming too euphoric or too despondent about online possibilities.

**Intentionally Inviting**

Operating at the intentionally inviting level, educators work with a wholeness of purpose and a reflective experience base. Their programs and practices for working with technology exhibit educational integrity because these educators have given sustained thought to what they are doing and why they are doing it. Because they are intentional, they can think in terms of calling forth, sustaining, and extending imaginative acts of hope for others and themselves. Because they are informed, they can engage in self-correcting inquiry and make imaginative and needed modifications.

People who develop this level of functioning work together in a collegial spirit, learn from their experiences, and find new ways to extend their personal and social capabilities. Being intentionally inviting is not a one-shot deal, but a perspective developed over time. From this perspective, online education is seen as a way for all people to develop the full range of their intellectual, technical, expressive, and social potential. This intentionally inviting perspective can be informed by using an inviting and integrative heuristic or checklist, such as
the one in the next section, to stimulate discussion and imaginative re-creation of an existing school environment into an inviting environment for online education.
Being Integrated: A Checklist for Online Education

In invitational education, everybody and everything adds to, or subtracts from, connecting with students in meaningful ways. Ideally, the factors of people, places, policies, programs, and processes should be so intentionally inviting in online education as to create an environment where each individual is cordially summoned to develop the full range of his or her intellectual, technical, expressive, and social abilities.

Being prudent about technology requires that we begin the process of integrating people and technology by looking at the current realities within a school environment. The checklist below provides a means for assessing a school’s integration of technology in terms of the Five P’s of invitational education.

Using the Checklist

This checklist is part of a process that members of a school community, teachers, administrators, staff, students, and parents can use to intentionally integrate
Professional development in ICT.
Administrators encourage faculty and staff to participate in discussions on how information and communication technology (ICT) is used at this school.

People, teachers, administrators, parents, students,

1 2 3 4 5

Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree

Possibilities for integrating technology in school environments.

Please mark your response to each of the statements by circling the appropriate number, with 1 for strongly agree to 5 strongly disagree. Please keep in mind that these ratings are meant to be viewed as a starting point for discussion. Use this checklist to celebrate achievements and reflect on new possibilities for integrating technology in school environments.

Checklist for Invitational Online Education
Teachers support and encourage all students in using ICT.

Teachers provide all students with opportunities to work with ICT.

Parents feel their ICT opinions and concerns are considered and dealt with fairly by teachers and administrators.

**Places**

Technology adds to and fits in well with the clean, well-maintained, and attractive appearance of the school.

Networked computers are available in labs, the library, classrooms, and student work areas.

Virtual work and communication spaces on school-based conferencing systems or bulletin boards are kept updated and provide relevant information for teachers, students, and parents.

Work areas are well-lit, uncluttered, accessible to all, and conveniently located.

The school's web pages present ICT policies and information in clear, accurate, and jargon-free language.

**Policies**

Teachers, students, parents, and administrators are involved in the policy development process for ICT.
Acceptable use policies and general rules for ICT are clear, well-posted, and fairly administered.

It is a policy that teachers are updated, supported, and recognized for working with technology in their classes.

School policy encourages teachers and non-teaching staff to use technology for professional development and growth.

Policy links ICT with the attainment of specific and explicit academic goals.

**Programs**

Technology programs at this school involve out-of-school experiences that link to the community and the world.

Programs at this school encourage teachers and students to explore technology, its uses, and meaning for society.

Programs allow students a reasonable say in determining their technology activities.

Programs are planned with student interests, life and career goals, and technology skills in mind.

Programs are flexible and support student access to learning through a variety of ways, including, but not limited to, online education.

**Processes**

Parents receive a response to an e-mail or phone request within a reasonable length of time.
Administrators and teachers routinely use ICT to communicate with parents, students, and the community.

Teachers maintain clear and reasonable technology goals and assignments, keeping in mind student learning styles and interests.

Teachers are available for students online, but also in person before and after school.

All students have the right and feel welcome to use the labs and equipment when they need to.
Re-Imagining Two Schools

A prudent approach to education technology begins by being intentional and becoming informed. The checklist in the previous section provides a simple tool for looking at a school’s current technology environment and imagining what could be an inviting and integrative approach that promotes online success for all. Let us now revisit and re-imagine the two high-tech schools presented at the beginning of this fastback.

A High-Tech Elementary School Revisited

Administrators, teachers, and students are excited to be at this school, not because it is technologically advanced, but because everything at this school contributes to an environment that invites personal and professional growth. The electronic sign at the front gate still displays the school’s logo; but the corporate logos are gone, replaced with a motto that reads, “Ad Astra Per Ardua — To The Stars Through Hard Work.” The sign has been scaled back to fit in nicely with the shrubs and the student-designed rock garden that surrounds it. The community support that helped pay for the sign
is not forgotten, however. The scrolling sign now spotlights corporate and community supporters, local events, and a variety of school activities and achievements, including the arts, service to the community, academics, and sports. The school remains electronically monitored, but the new sign reads: "Welcome visitors. For our students’ safety, this school is video monitored. To better serve your needs, please follow the arrows to the main office. We look forward to meeting you."

The principal still is proud of the school’s student laptop program, wireless Internet connection, and classroom smart-display technologies, but she realizes that technology is only as good as the teachers and programs that support it. Therefore, she is a tireless advocate for her teachers and students. She promotes programs and policies that use the school’s technology to achieve educational goals in such targeted curriculum areas as reading and mathematics, where technology has been shown to make a measurable difference in students’ skills and academic success. At public speaking sessions, she encourages continuous community involvement in the school’s decision-making process for online education.

The information technology officer at the school now chairs a technology committee made up of parents, teachers, and students. The committee helps administer the school’s laptop program and keeps parents informed about what students are learning about technology and how parents can help at home. Some parents are involved in online student mentoring for homework and research projects. The IT officer’s primary job descrip-
tion is helping teachers and students work with technology in ways that have been demonstrated to improve student academic success. One of the information technology officer’s suggestions has been to introduce elements of the laptop program to younger students so the transition to the laptop classes in grade five is not a shock. He and a group of teachers are pilot testing a personal digital assistant (PDA) project, which uses a class set of hand-held computers to introduce basic computer use to children. Other teachers have started to use the hand-held devices with their classes and are engaging students in collaborative experiential learning activities beyond the classroom because of the PDA’s portability and data-sharing capabilities. All students at the school are able to work with computer technology if they need or want to do so.

The laptop classes are arranged in collaborative learning pods, where students can work together flexibly and where technology is just one alternative they can choose to complete their assignments. The school still cannot afford to provide students with e-mail accounts, but teachers and parents have researched and implemented a freeware electronic bulletin board system so that students in the laptop classes can use the virtual space for electronic communication and sharing information. All teachers at the school use the system to mentor students. Students can ask their mentors academic or personal questions that they might not be able to ask in class. A schoolwide committee of administrators, teachers, parents, and students planned, discussed, and developed the school’s policies for using the electronic
bulletin board for mentoring and within-school communication.

Teachers at this school also work together in online learning groups for professional development and writing curriculum using the network's shared virtual spaces. The computers also are used by teachers to distribute and share ideas and materials for their classes. Students still save their works in progress and their final reports onto computer disks or the school's shared drive, but they now hand in hard copies of their work for their teachers to evaluate. Students' concerns about "Big Brother" have been addressed by policy guidelines that establish students' personal online spaces as off limits to teachers, unless there is a compelling safety or legal reason to enter them.

Student assignments also have changed. A typical assignment might still be a "webquest," to search for and critique information on a specific theme or subject on the Internet. However, teachers recognize individual student differences and intentionally build more flexibility into online assignments to allow all students greater choices in completing their work. Comparisons of electronic and non-electronic sources for information are frequently part of in-class discussions and presentations. A resource that is used frequently at the school is the ERIC/IT site, hosted by the University of Syracuse, that provides an annotated list of the best education online sites for children in grades K-8 (http://www.ericit.org/weblinks/weblinks.shtml).

Technology is an integral part of the teaching and learning environment at this elementary school, but it is
just one part of the picture. This school has chosen people over technology as a guiding principle for integrating technology into education. The school is high-tech, but it also is high-touch because it integrates technology in an environment that fosters growth, creativity, and learning.

A High-Tech Secondary School Revisited

Now let us re-imagine a secondary school that has embraced information and communication technology. The display cases in the hallway host a variety of memorabilia from all of the school’s activities. Photos of graduates, students, and teachers involved in the arts, community service, the military, and a variety of occupations and professions line the walls. The television monitors that sat idle because there was no teacher to help run the media program now are showing school and community announcements created by students with the support and guidance of a group of teachers, parents, and professionals. Announcement suggestion boxes set up throughout the school enable anyone who wants to suggest a message or idea for the broadcasts to do so. Birthdays, music suggestions, and jokes that are placed in the suggestion boxes are interspersed throughout the broadcasts.

Another group of teachers and parent volunteers has worked to develop local co-op programs that focus on working with technology in real-world applications. Every student in the school has to complete a certain number of co-op placement hours before graduation.
Students in the information and communication technology program are placed as interns in local firms and are learning what web designers, programmers, journalists, researchers, and others who work with technology do.

The high school still has two computer labs. The small lab is now a special projects lab for everyone at the school. Copies of student and teacher computer-generated art adorn the walls, and the large work table has been removed and replaced by two smaller tables with chairs arranged for group work or discussion. A large bookcase designed and built by the senior construction class holds an assortment of how-to manuals and related books and magazines. The phone is gone, replaced with a flat-bed scanner, laser printer, and a plotter to suit the multi-media production nature of the lab. Everyone is entitled to use the printer, plotter, and scanner when working in the lab. The atmosphere is comfortable and relaxed, an inviting workspace for small groups of students and teachers to plan, experiment with, and evaluate the uses of multimedia and Internet technologies in the classroom and society.

The school’s large computer lab also has changed. The lab still is situated in the remains of the school’s machine shop, but students and teachers have taken time and effort to make the lab a more comfortable space. On one wall, students have painted a mural depicting the history of computers. Large rugs made by students in a weaving class hang on two other walls, softening the cavernous echo that had dominated the room. The 50 computer workstations have been rear-
ranged in circular pods throughout the large room. The "instructor’s workstation" no longer exists, so teachers are not forced to stay in any specific area of the lab.

The long tables have been rearranged as quiet work or discussion areas. In these areas, students are allowed to play music quietly in the background as they work or talk. The lab has become a common work area for many students, even if they do not need to use the computers.

The signs in the lab have changed as well. A large poster above the laser and dot-matrix printers reads, "Prepaid printing accounts available in various amounts at the Library or Student Council. Printer Account funds go directly to the upkeep of this lab as a student resource." The computer lab "rules" also have changed. They have been replaced with a statement of principle that introduces a set of guidelines for working in the lab. The new statement reads:

We believe that the technology in this lab is an educational tool for all of us to use. With that in mind, please observe the following guidelines:

This is our lab. Lets keep it clean and orderly for all of us to use.

Surf the web, but please be careful. It can be hazardous out there.

When a class is in progress, please use the auxiliary work areas quietly.

Liquids can damage these computers, so please keep drinks on the work tables.

Downloads use up space and time, so please use your disks and your time.

Quiet music should not disturb anyone working in the lab.
Please let the lab student supervisor know whenever problems begin to show.

The school’s technology officer is a teacher who knows a lot about technology. Her job is to help teachers learn to work with technology in their subjects. She knows that teaching about technology is not the same as teaching with technology, and she strives to help teachers by making suggestions and offering support. She is a technophile who believes that technology may improve education for some, but only if teachers have the time and support needed to develop pedagogically appropriate practices and curricula. She tries to lead by example, so she demonstrates lessons, program ideas, and research where technology has made a difference in student learning. She likes to work one-on-one with teachers to develop individual action research plans for using technology to help students achieve measurable and sustainable academic improvement and success. Knowing that the technology officer is available and having empirical data on the beneficial results of working with technology in specific subject areas has encouraged many teachers to become better informed about teaching with technology. Some have enrolled in courses at the local university, while others have become more involved in such school-based groups and activities as the media and communications club and the school’s website committee.

The school’s website no longer is solely the technology officer’s responsibility. A committee of parents, teachers, and students is involved in the design, main-
tenance, and management of the website. The site promotes parent and community involvement in the life of the school and enables many parents who could not otherwise be involved in school policy discussions to have a say about what is happening at the school. The site is highly popular with parents, teachers, and students. Like everything else at the school, involvement and communication by the entire school community has been the key to developing an inviting online education environment.
Conclusion

A comparison of these high-tech schools highlights some of the intended and unintended consequences of online education. Changing an unintentionally disinviting school environment for online education into an intentionally inviting environment is an imaginative act of hope. If we have been intentional, informed, inviting, integrative, and imaginative, then we can hope that online education will realize more of its educative potential.

Inviting online education depends on how much commitment and thought people place on the democratic possibilities that information and communication technology offer for teaching and learning. Technophobes and technophiles living in this well-wired world should carefully examine and consider the messages that are sent and received through our ever-expanding array of information and communication technologies. The inviting approach is intended to provide a prudent guide for moving from frenzy to educational fulfilment in our world.
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