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# Mentors on the Net: Extending Learning Through Telementoring

"At its core, a mentorship reflects the way in which humans have always passed on their legacy, their artistry." (Tomlinson, 2001, p. 5)

Parents, classroom teachers, and teachers of the gifted cannot be all things to the young people in their charge. The nature and diversity of gifted students' interests demand resources beyond the confines of the school and sometimes beyond the confines of the community. These demands demonstrate the need for mentors and other resource people.

The mentoring process has extended through the centuries. The term *mentor* had its origin in Homer's *Odyssey* when Odysseus entrusted the education of his son Telemachus to a wise and learned man named Mentor (Heller & Sindelar, 1991). Mentors provide content sophistication that normally would not be accessible from traditional resources (Siegle, 2001). Not all mentoring occurs in person, though; mentoring can also occur through the Internet. One of the fastest growing areas of mentoring is telementoring, also known as virtual mentoring, e-mentoring (Nash, 2001), or iMentoring (Buery, n.d.). "Telementoring is a nascent revolution poised for take-off into cyberspace. The technology, interest, and need are driving the alignment of businesses, schools, and technology developers" (Robb, 1997, p. 1). The general goal of most telementoring programs is to provide individualized academic, motivational, and emotional support by using technology to bring adults into children's school experiences.

## Mentoring and Gifted Education

Mentoring has been incorporated into gifted education since the beginning of the gifted education movement (Milan & Schwartz, 1992). What distinguishes mentoring from other programs for the gifted is that it is essential when students have skills and interests that are "so advanced or divergent from the typical school resources that they need to be placed in situations where those resources are available" (Colemen & Cross, 2001, p. 325). Gifted students require mentors when they have interests that their peers are not yet ready to explore. They require this special contact with others who are interested in their ideas (Roberts & Inman, 2001). Gifted students also benefit from mentorships when they master content and skills sooner than their peers. Through mentorships, young people can learn more deeply and at an accelerated pace with meaningful and personal feedback (Purcell, Renzulli, McCoach, & Spottiswoode, 2001). In effect, mentoring provides the benefits of both enrichment (Nash, 2001) and acceleration (Nash; Rogers & Kimpston, 1992).

Torrance (1984) documented that mentors make a difference in the creative achievement and educational attainment of mentees. Individuals with mentors complete more education than those without them, and having a mentor is significantly related to adult achievement. Study and program evaluation

reports have consistently shown positive results for mentorships (Beck, 1989; Ellingson, Haeger, & Feldhusen, 1986; Hamilton & Hamilton, 1992; Prillaman & Richardson, 1989; Swassing & Fichter, 1991; Wright & Borland, 1992).

## Telementoring

The ubiquitous nature of the Internet makes telementoring a popular option for gifted students. Telementoring becomes even more important for students with esoteric interests from rural and low-income communities because educators and parents in these areas may find it difficult to locate a nearby mentor. Telementoring can also increase technological literacy for students in low-income communities where exposure to technology may be limited.

The size and complexity of the Internet can make it difficult to bring inquisitive students and learned adults together. Fortunately, a number of organizations provide such services. The National Mentoring Partnership (http://www.mentoring.org) features an extensive Web site on all aspects of organizing and running mentorship programs. In addition to the program information, the site also includes information about telementoring and links to telementoring organizations such as the International Telementor Program (ITP; http://www.telementor.org).

Telementoring ranges from a single e-mail reply for a question, to collaborative projects among teachers, students, and mentors. Telementoring helps bridge the digital divide separating those who regularly use new information technologies from those who don't. It also enables mentor volunteers to use their limited time effectively and efficiently. Telementoring is usually divided into three types of programs:

- mentor experts who agree to respond to questions;
- mentors who are paired with a single learner; and
- mentors who work in partnerships (Riel, n.d.).

### *Mentor Experts*

Mentor experts usually have short interactions with students. This often involves topical focus Web sites that are sponsored by corporations or organizations. Students e-mail their questions to the organization and an expert on the topic e-mails a reply. The interaction is usually limited to the exchange of an e-mail with a possible follow-up e-mail. Many of these sites keep archives of the questions and answers, which often provide interesting reading for students.

How many people know that the oldest living tree is almost 5,000 years old? One of the scientists at the MadSci Network (http://www.madsci.org), a popular mentor expert site, did when he responded to a question from a middle school student from Massachusetts. MadSci Network features hundreds of scientists who field questions about the world and also an extensive archive of previously answered questions that can be searched by topic, keywords, or grade level.

A variety of "ask an expert" indexes abound on the Internet. These sites feature links that usually provide an index of expert sites in a variety of subject areas. Some of the more comprehensive sites are Pitsco's Ask an Expert site (http://www.askanexpert.com), refdesk.com (http://www.refdesk.com/expert.html), Ask an Expert Sources (http://www.cln.org/int_expert.html), Scientific American (http://www.sciam.com/askexpert_directory.cfm), Yahooligans! (http://www.yahooligans.com/school_bell/Ask_an_Expert), and CIESE's Educational Links (http://k12science.ati.stevens-tech.edu/askanexpert.html).

### *Mentor Pairs and Partnerships*

Many businesses provide telementoring as a service option. As early as 1995, Hewlett Packard provided support for its employees to participate in an e-mail mentoring program. The H-P program is now part of the larger International Telementor Program, which provides academic mentoring support for fourth-grade through college students from professionals of sponsoring companies. All student/mentor communication is project-focused and facilitated by a teacher or parent (*International Telementor Program*, n.d.).

A survey of teachers with students involved in ITP between May 2000 and March 2002 found that 81% of the teachers reported their students took more responsibility for their learning as a result of being involved in a telementoring project (Lewis, 2002). "The vast majority of teachers witnessed significant improvement in writing skills, self-directed learning, teamwork, critical thinking skills, career and workplace knowledge, desire to go to college, subject grades, and science comprehension" (p. 2).

The most successful telementoring programs are usually partnerships that include a three-component design that involves students, their teachers, and mentors. Students in these programs may not participate unless a teacher sponsors them, and some programs allow parents to sponsor their children. The teacher works with the student to design a mentoring proposal. Together they submit the student's proposal to an online mentoring organization that posts it for consideration by potential mentors (Dahle, 1998).

Once a mentor match is made, the teacher usually monitors the student's participation. E-mail is the most common communication format, although many larger telementoring organizations offer secure online discussion forums for men-

tors and mentees to use (*International Telementor Program*, n.d.). Organizations with these systems often limit all communication between the mentor and mentee to their secure system, which maintains the privacy of all parties and also allows the telementoring organization to monitor the mentor and mentee interactions. The monitoring is necessary to safeguard the mentee and limit the liability of the telementoring organization.

One reason why programs such as H-P's telementoring program, after which ITP is fashioned, have been so effective is that they require specific commitments from everyone involved. Students must be sponsored by a teacher, who, in turn, must agree to certain ground rules. Teachers must devise lesson plans for mentoring projects, coordinate those projects with traditional classwork, and guarantee that the students will have e-mail access. For their part, mentors agree to own the relationship. Mentors respond to every e-mail and stay with their mentees even when mentees may waiver. This type of mentorship isn't a substantial sacrifice for mentors. Most telementors send and receive from one to three e-mails per week in such programs (Dahle, 1998).

Telementoring has some unique advantages over traditional mentoring. It

- provides a means of connecting thousands of professionals with students on a scale that is impractical with traditional face-to-face mentoring;
- matches students with appropriate mentors without geographic limitation;
- allows convenient, consistent, weekly communication between students, and mentors and creates an archive of all communication;
- eliminates scheduling problems between mentors and students because an e-mail communication can be sent any time; and
- provides the opportunity for students to work on long-term projects with their mentors and allows mentors to see the impact they are having on students (*International Telementor Program*, n.d.).

Telementoring provides four major benefits for teachers:

- With telementoring projects, students become fully engaged in projects, which makes teachers' jobs much easier. Teachers can then facilitate learning, rather than trying to convince students that they need to learn.
- Students are responsible for developing their own special projects based on their interests. When students are encouraged to explore their own curiosities, they are much more likely to engage in effective, multidimensional learning. Students focus on their particular interests and learn to incorporate a variety of skills into a project. For example, these may include research, writing, math, and

## Table 1
## Web Sites Related to Mentoring

**Ask an Expert** (http://www.askanexpert.com) is a student-friendly site that features hundreds of experts who field students' questions.

**International Telementor Program** (http://www.telementor.org) is a leader in telementoring. Students and potential mentors can register at this site, which also includes valuable information on the telementor process.

**Letting Education Achieve Dreams** (http://www.uhv.edu/lead/mentoring.htm) is an initiative of the University of Houston–Victoria. The Web site contains background information on mentoring, information about mentor ethics, and a list of frequently asked questions.

**MadSci Network** (http://www.madsci.org) is an interactive site where students can post questions related to science that are answered by a pool of scientists.

**National Mentoring Partnership** (http://www.mentoring.org) is probably the most extensive mentorship related site on the Internet. The site contains step-by-step instructions for developing and running a mentoring program. The site also provides links to established mentoring programs.

**Nebraska State Department of Education's Work Based Project** (http://www.nde.state.ne.us/TECHPREP/WBL/PDF%20files/WBL%20MANUAL/PT'VIII.E%20110-123.pdf) displays pages of useful forms for beginning mentoring programs.

**Northwest Regional Lab's National Mentoring Center** (http://www.nwrel.org/mentoring) features publications and Web resources on mentoring.

**The Mentoring Center** (http://www.mentor.org) is a 501(c)(3) tax-exempt, private, nonprofit organization in the San Francisco Bay area. This site contains information on mentoring and links to mentoring programs.

experimentation.

- Telementoring utilizes the skills and knowledge of adult professionals. By tapping into these specialists, teachers are provided a vast new resource of expertise that brings the world into the classroom. Likewise, students receive instruction from field professionals and gain access to significant new role models.
- The value of students interacting with people outside the classroom is beyond measure. They learn about different careers, lifestyles, and cultures. And, by working with a mentor to whom they are accountable, students develop a new understanding of the importance of being responsible (*International Telementor Program*, n.d.).

Telementoring need not be limited to large-scale national programs. Classroom teachers or gifted and talented coordinators can match their students with adults through e-mail pen pals. While initially it is more convenient to locate community people who are willing to serve as electronic resources, the participant pool can expand to include contacts around the country or even the world. Most successful small programs prefer to begin by involving a group of people at a single business, rather that a group of mentors who are spread out. As one organizer noted, "I didn't want to get a geographic spread of people. I wanted them to all be in one location because I felt, as important as it was to have mentors, it was just as important to train the mentors" (Robb, 1997, p. 11). The interactions can range from assistance with long-term projects, to simple tasks such as providing students with feedback on their schoolwork. If the mentor pool is in the area, a kickoff event such as a pizza party for the participating students and mentors can help acquaint the pairs. Some programs elect to schedule a face-to-face celebration meeting at the conclusion of the mentoring program. Information about benefits, risks, and strategies for organizing a mentoring program can be found on the National Mentoring Partnership Web site (http://www.mentoring.org).

### *Characteristics of Students Who Benefit From Mentoring*

Highly motivated students with focused interests are the best candidates for telementoring. These students usually have independent work habits, a strong grasp of subject matter, and a desire to be mentored (Roberts & Inman, 2001). They are goal-driven and can articulate a clear purpose for their mentorship.

Students who are disenfranchised with their educational program sometimes indicate that they wish to work on their own with a mentor. The fact that students indicate they want to work on their own doesn't necessarily mean a mentorship is the best arrangement. Reilly (1992) noted that "on my own" can depict a desire to study a topic of interest not covered in the curriculum, to move more or less rapidly through the curriculum, to work individually instead of in a group, to produce a different product than was assigned, or to see connections between the content and the "real world." She cautioned that, because schools have the primary responsibility to educate children, they should investigate a variety of available resources within the school before asking others for a mentoring commitment.

When students have a clear goal, mentoring works. It works at all age levels. It works under a variety of conditions. It works because mentors recognize young people's talents and interests and provide them with opportunities to explore and develop them. Each year, hundreds of thousands of young people benefit from the wisdom and dedication of adult mentors. Mentorships make differences in lives. In their simplest form, mentoring programs can begin with one child working with one adult. From that simple beginning, the possibilities are limitless. Telementoring through the Internet is one option for turning possibilities into realities. GCT

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*continued on page 63*

## Creative Problem Solving Conference

*continued from page 19*

mation that had been learned and analyzed over a 2-day period. The products represented our group solution that was interdisciplinary and required multiple media. Awards were given to those groups who created the best banner, pamphlet, skit, or PowerPoint presentation, which were evaluated using the rubrics in Figure 2.

While the focus of the conference was to create solutions to the problem of Internet piracy, it is interesting that many students seemed to feel that the most important things they learned contributed to their affective development. In response to the student evaluation question "What was the most important thing you learned?," the most frequent response was the value of teamwork or working as part of a group. If the success of the conference can be measured in terms of student participation and satisfaction, this conference was a success. Approximately half of the more than 100 attendees had participated before, an indication that they were happy with past experiences. In addition, with regard to evaluation requests for improvement suggestions, the most frequent response was that the conference should remain the same.

In conclusion, for the teacher of gifted children, whether in a traditional classroom setting or pull-out program, the conference offers actual training and practice in implementing an interdisciplinary curriculum using the creative problem solving process. Other obvious benefits include a weekend of interaction with other teachers of the gifted and gifted students from across the state. For the gifted student, the conference provides an excellent opportunity for social interaction, as well as academic challenges. GCT

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## Mentors on the Net

*continued from page 54*


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