Telementoring: A Teacher's Perspective of the Effectiveness of the International Telementor Program

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ABSTRACT

The purpose of this study is to inform the reader how K-12 teachers perceive the idea of using telementoring in their classrooms. Teachers in this study evaluated the effectiveness of the International Telementor Program (ITP), which is one of the world's largest formal telementoring programs. The International Telementor Program creates matches between industry professionals from ITP sponsor companies and students (4th grade through college) targeting specific communities around the world. The ITP program creates project-based online mentoring support for students and teachers in classrooms and home environments with a focus on serving a diverse student population. Since 1995 over 11,000 students have been served throughout nine countries. Teachers provided their insights of the benefits and challenges of working in the International Telementor Program in the K-12 setting. Teachers gave responses using both quantitative and qualitative formats.

With the recent use of electronic mail as a communication tool "telementoring" programs (formal and informal) have begun to flourish within the K-12 educational setting. The purpose of many telementoring programs has been to match K-12 students with experienced professionals to provide "real world" insights into the K-12 curriculum (Bare & Meek, 1998). As a result of these technological advances, many teachers are now exploring the effectiveness of online telementoring programs with students in their classes. With the widespread use of computers, modems, Internet connections, and e-mail software, students and their mentors can break down the barriers of time and distance using the Internet (Bennett, 1997).

The Internet has quickly found its way into many businesses, homes and K-12 classrooms growing at a rate of 100% per year or one new host every 30 minutes (Calcari, 1994). University researchers, teachers, and students have used the Internet since the early 1980s (Kantor & Neubarth, 1994). In 1997, 78% of a nationally representative sample of American K-12 educators reported having access to telecomputing facilities in their school buildings, with 27% of that sample having connections in their own classrooms (Bare & Meek, 1998). The Internet is by and large an international, virtual meeting place for increasing numbers of teachers, students, and subject matter experts.

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(4th grade through college) targeting specific communities around the world. The ITP program creates project-based online mentoring support for students and teachers in classrooms and home school environments with a focus on serving a diverse student population. Since 1995 over 11,000 students have been served throughout nine countries (International Telementor Program, 2002). Teachers provided their insights of the benefits and challenges of working in the International Telementor Program in the K-12 setting. Teachers gave responses using both quantitative and qualitative formats.

What is Telementoring?

As old as the ancient Greeks, the practice of mentoring creates a sustained relationship between a trusted teacher and a student. Today, in the classroom, on the athletic field, or in internship and shadowing programs, mentoring or coaching is a common instructional tool. The growth of technology brings new opportunities for mentoring; the Internet can offer online tutoring, ask-an-expert coaching, and e-mail linking of students with successful professionals in careers of mutual interest (Duff, 2000).

Basically, "telementoring is a naturally occurring relationship or a paired relationship between a more senior individual (mentor) and a lesser skilled or experienced individual (protégé), primarily using electronic communications, and is intended to develop and grow the skills, knowledge, confidence, and cultural understandings of the lesser skilled individual to help him or her succeed" (Single & Muller, 1999).

The American School Health Association (2001) defines telementoring as an "electronic version of mentoring, in which an older, more experienced person shares his or her experience and expertise with a younger protégé in a way that helps the protégé to achieve a goal or gain entry into a mentor's world" (p. 122). The American School Health Association went on to say that there are three broad categories of telementoring activities. These three categories are:

- Ask an Expert. Ask an expert formats are generally a single exchange where a student poses a question and the answer is provided by an expert in the field. In some formats, these questions and answers are posted on Web sites for other students to see and for future reference.
- Pair Mentoring. Pair mentoring involves a long-term relationship between a student and a volunteer that combines educational and social development goals. The mentor serves as an adult role model while providing learning opportunities and enhanced understanding into a specific topic area through the use of e-mail, text, audio, and video.
- Group Mentoring. In group mentoring an expert or group of experts are matched with a group of learners through a technology medium. Group mentoring may be either a single exchange or conducted over an extended period of time (p. 122-123).

Advantages of Telementoring for Teachers

According to the International Telementoring Program (2002), telementoring has four major benefits for teachers. These benefits are as follows:

- With telementoring projects, students become fully engaged in projects, and that makes teachers' jobs much easier. Teachers can then act to facilitate learning, rather than trying to convince students what 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, multi-dimensional learning. Students focus on their particular interests, and learn to incorporate a variety of skills into a project – research, writing, math, experimentation, etc.
- Telementoring utilizes the skills and knowledge of adult professionals. By tapping into these specialists, teachers are provided with 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 of 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.

Along with the aforementioned benefits to teachers, the U.S. Office of Educational Research (2001) noted that "telementoring supports collaborative learning which has been documented to improve academic achievement, improve behavior and attendance, increase self-confidence and motivation, and increase liking of school and classmates" (p. 123). Various research reports (Harris, 1999; Rao, 1999; Brotherton, 2001; Single & Muller, 1999) have documented that telementoring has been shown to increase academic test scores, raise self-esteem, decrease negative stereotypes of other races or ethnic groups and enhance comprehension of content and skills.

Finally, with the benefits to teachers and students, it is clearly evident that telementoring opens up a new world of opportunities for teachers and students to increase student achievement. Teachers can become facilitators of learning for their students by interacting with students and mentors on project-based activities and students can have a career professional (i.e., software engineer) that can provide valuable advice on how to complete different projects using real-world solutions.

Methodology

An online survey created by the research team of the International Telementor Program (ITP) was used to measure teacher perceptions of the effectiveness of this program. A total of 20 questions were used that consisted of quantitative questions (i.e., Likert-type questions, yes/no responses, etc.) and qualitative questions (i.e., open-ended questions). All teachers submitted their responses to this survey via the ITP Web site during the time period of May 2000 to March 2002.

Population

A total of 256 teachers completed the (ITP) online survey. These teachers were active participants in the International Telementor Program. These teachers were spread

across eight countries throughout the world. In order for teachers to be participants in this study, they had to be chosen by the International Telementoring Program as a teacher that could be successful by using telementoring in their classrooms. According to the International Telementor Program (2002), teachers chosen to participate had to meet the following guidelines:

- Students are required to use the secure ITP message system.
- Develop, submit, monitor, and evaluate telementor project plans.
- Contact mentors every week to discuss progress, and to request bi-weekly checkpoint forms.
- Limit student participation to 10-15 students
- Make sure students communicate at least twice each week with mentors, and remind them to submit the bi-weekly checkpoint forms
- Check e-mail daily, respond to checkpoints within 48 hours, keep logs of all e-mail messages
- Notify ITP staff concerning issues that could prevent the students and mentors from completing the project (International Telementor Program, 2002)

Data Analysis

Data analysis for this research study used a combination of quantitative and qualitative analyses. For quantitative responses, SPSS software was used to compute standard deviations, means, and other descriptive statistics. For qualitative responses, HYPEResearch software was used to code open-ended responses in three phases—open coding, refinement of coding, and axial coding (Glaser, 1992). In the final phase, key coding themes were identified and reported in the results section (Miles & Huberman, 1994).

Results

The International Telementoring Project (ITP) Teacher Evaluation was based on 256 online teacher surveys collected via the (ITP) Web site between the dates of May 2000 through March 2002. This data set measured teacher perceptions of the benefits and challenges of working in the International Telementoring Program. Data analyses and results were centered on the following themes: impact areas, student supervision, technology assistance, and meeting national and state standards.

Impact Areas

In Table 1 below, teachers provided data that demonstrated the greatest impact areas gained by their students as a result of being involved in the ITP program.

Table 1

Impact Area	Yes	No	Ratio	Rank
Communication skills (written or oral)	242	14	17.29	1
Increase in self-directed learning	225	31	7.26	2

Increased desire to become a proactive learner	208	48	4.33	3
Increase integration of knowledge across subject areas and interest	194	62	3.13	4
Improved teamwork	193	63	3.06	5

According to Table 1, teachers believe the top 5 major impact areas for students that participated in this study were writing skills, self-directed learning, desire to be a proactive learner, increase in integration of knowledge across subject areas, and improved teamwork. Teachers also had the following additional comments to support the telementoring impact areas:

- *"I feel the overall self esteem of my students has increased by being apart of this program. They were recognized by our board of ed with an award that really made them feel part of something."*
- *"Students were motivated to conduct online research and to contact various professional organizations related to the topic researched. Technology, communication skills, collaborative skills, and improved organization were enhanced through this project. Students critically examined the topic in more depth."*
- *"Increased knowledge about careers. Increased skills in technology and its applications."*
- *"Increased desire to want to get a job ... during summers or after graduation. Full and part-time."* (Lewis, 2002, pp. 3-4)

Student Supervision

During this study, teachers were asked to identify the "ideal" number of students they wanted to supervise in the ITP program. This data was especially important to obtain since teachers had to meet daily school requirements plus requirements of the ITP program. Teacher responses are below in Figure 1:

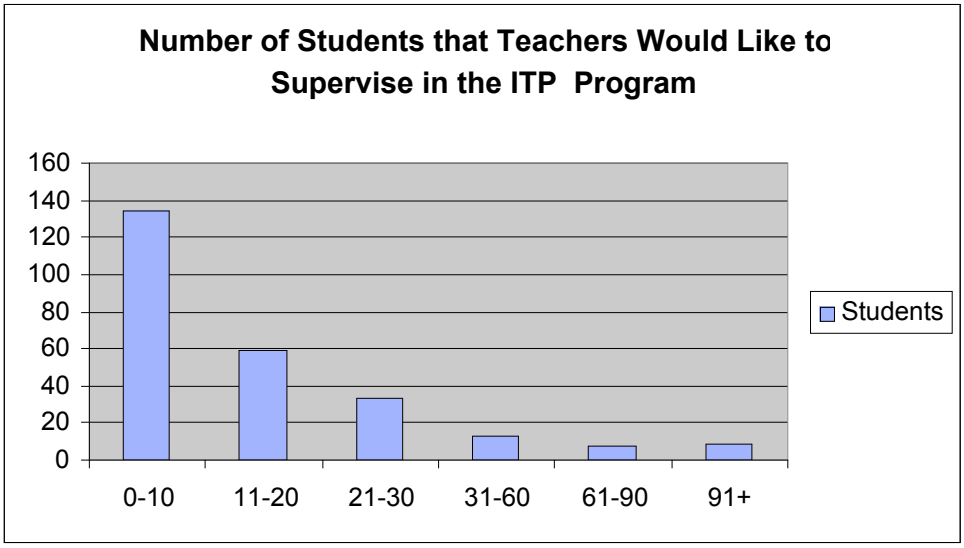

Figure 1

Teachers have clearly shown in Figure 1 that they would "ideally" like to supervise 10 students or less in this program. Responses from teachers decreased when they were asked if they wanted to supervise more than 10 students at one given time during the their tenure in the ITP program.

Assistance with Technology

Since the ITP program is entirely Web-based, teachers were asked in online surveys how the ITP program has helped in developing their personal technology skills. A summary of teacher responses are found below:

- *"It enables me to spread myself over the group better since mentors are discussing and 'teaching' with me using email."*
- *"I am able to learn good presentation skills from my students who have learned it from their mentors. The students became my mentors!!!"*
- *"It has done a great deal for me personally, although I still have much to learn! I feel more confident using technology (specifically computers) as a teaching tool than I ever did before."* (Lewis, 2002, p. 9)

Helping Students Meet National and State Standards

With the focus of K-12 education being "standards-driven," teachers were asked to describe in their own words the impact of the ITP program in helping to meet national and state standards. A summary of teacher thoughts are found below:

- *"Since at the national level we are moving towards project-based and self-directed learning by our students this program has provided that in good time."*
- *"Reading/writing are crucial areas in our local/state improvement plans and both are key in any telementor project!"*
- *"There are 4 main goals in the Missouri Standards. We have covered quite a few subgoals under two of these four main goals. Research, critical thinking, visual*

and oral presentations, and problem solving are a few of the areas where my students have demonstrated proficiency during this project."

- *"The writing skills have improved in a dramatic manner. Our test results have not returned, but is obvious in the improvement I have seen and the mentors have mentioned"* (Lewis, 2002, p. 10).

Discussion

As indicated in the review of literature, telementoring will continue to be implemented on a large-scale basis into the K-12 setting. The responses of teachers in this study directly parallel the advantages of telementoring found in the review of literature. As a result, teachers in this study are continuing to experiment with the idea of using telementoring to help students to become more "proactive" in their learning. With the increasing use of the Internet, school/corporate world partnerships can be a valuable tool for helping K-12 students progress towards greater academic "success." Mentors in the corporate world are an "untapped" resource in the educational process. By the implementation of telementoring programs, students can now have easy access to real-world professionals that can help students to learn how to be successful.

Overall, teachers that participated in this study are very excited about the many possibilities of the International Telementor Program and telementoring in general. Also, they feel this program is very beneficial in helping students master the various state and national standards. With these comments, it seems that telementoring in the K-12 setting will continue to gain more publicity as many teachers see the benefits of thinking "outside of the box" when it comes to student learning.

Conclusion

In conclusion, teachers that participated in this study clearly believe that the International Telementor Program (ITP) is valuable for their students. Teachers reported that students that participated in this program have made great strides in becoming proactive learners. Also, teachers reported that they have gained greater knowledge in the area of "technology usage" by being a part of this program.

Despite the many positive aspects of the program, some teachers did not have a positive experience. These teachers reported problems with poor technology within schools that prohibited students from contacting their mentors. Also, the difficulty of scheduling "equal" computer time for students within the school was reported. Finally, many teachers reported that the overall lack of support from the school and/or school district was problematic in implementing this program.

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