E-Mentoring in Virtual Education

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This paper reviews recent e-mentoring literature to provide human resource development (HRD)
professionals and practitioners with insights into emerging trends of e-mentoring in virtual education.
A brief overview of e-mentoring, benefits, barriers, and successes are presented. Evaluation strategies
for an e-mentoring environment are also provided.

Keywords: e-mentoring, virtual education, mentoring

Many U.S. and international educational institutions are beginning to embrace the idea of e-mentoring for virtual (on-line) students. These organizations are recognizing the immense benefits of e-mentoring. Bierema and Merriam (2002) noted that the Internet is being used as a mentoring venue where virtual mentoring has become increasingly useful as a knowledge age alternative to traditional mentoring. E-mentoring may also be used as a human resource development (HRD) intervention in this increasingly technology-based, knowledge society (Bierema & Hill, 2005). This paper is to explore e-mentoring and discuss the implications for education and human resource development.

Mentoring is not a new idea. It goes back thousands of years to Homer's epic poem, the *Odyssey*. Homer tells of a wise old sea captain named Mentor (the goddess Athena in disguise), who gives Odysseus's son, Telemachus, guidance in coping with his father's long absence since the Trojan War. O'Neill, Wagner, and Gomez (1996) noted that in modern times the word mentor has been used to refer to almost any kind of relationship in which a knowledgeable person aids a less knowledgeable person. Protégé refers to the person who is the focus of the mentor's efforts (Burgstahler & Cronheim, 2001).

Knouse (2001) cited that similar to other Web ventures, e-mentoring is very new. As a discipline or body of knowledge, it has not yet evolved to the point where it is possible to critically evaluate its effectiveness. Knouse (2001) further noted that researchers should begin to examine basic questions regarding how well e-mentoring works, especially in relation to one-on-one mentoring. With e-mentoring, there is opportunity to loosen the time and space constraints that hamper formal mentoring programs by drawing upon mentors living in places that may be remote from the protégés (Hamilton & Scandura, 2003).

The Internet makes possible more connections between schools and adult work environments in which learning has high priority. In recent years, e-mentoring program directors have achieved considerable success in their efforts to engage students and knowledgeable adult volunteers worldwide in long-term curriculum-based relationships (O'Neill & Harris, 2004). E-mentoring may be a practical way to give students and faculty expanded opportunities to engage as participants in communities of practice beyond the confines of the school. Researchers are now focusing more on understanding what will be necessary to bring e-mentoring programs to scale (Cravens, 2003). Future efforts may be limited in important ways by our understanding of the expectations that participants (including students, mentors, and teachers) bring to their work online. How these expectations lead participants to interpret and respond to the experiences they have together can and should shape the design of e-mentoring programs in the future (Fulop, 2002).

Electronic mentoring, e-mentoring, is the merging of traditional one-on-one mentoring with the digital age and is rapidly becoming a mentoring method of choice, especially in virtual education. With time becoming a scarce commodity, e-mentoring through e-mail, Internet chat rooms, electronic bulletin boards, or instant messaging systems provide opportunities for virtual meetings when face-to-face sessions may not be possible (Rothwell, Jackson, Knight, & Lindholm, 2005). E-mentoring may provide the protégé with several mentors from whom they may choose.

The mentoring process involves a mentor, a more experienced person in the field, and a protégé, student or beginning professional. Brown and Lent (2005) noted that formal mentoring programs pair participants with volunteers who provide one-on-one friendship, guidance, and support to students. Usually mentors will be university or school staff, faculty, corporate personnel, professionals, older peers, or volunteers from the community. The expected outcomes of the mentoring relationship are that the students' academic performance will

improve indirectly by improving their attitudes about school, thus raising their personal goals and motivation.

Problem Statement

Educational institutions and organizations have reaped the rewards of traditional mentoring for some time. However, in the 21st century education and training in organizations are being delivered through the Internet where traditional mentoring is not a viable avenue. Human resource development professionals and educational institutions need to be aware of e-mentoring as an alternative to traditional mentoring to better meet the needs of the people they serve.

Theoretical Framework

Theoretical frameworks were examined from relevant e-mentoring and mentoring articles in journals, books, and HRD literature. However, as noted by Biereman and Hall (2005), the literature on electronic mentoring reflects only exploratory undertakings and continued research is needed to fully understand the potential benefits of e-mentoring. America Online (AOL) and Netscape's role in expanding the use of email and the Internet influenced the widespread use of e-mentoring. Informal e-mentoring probably occurred as soon as email began. Single and Single (2005) noted that it took the democratization of the Internet through AOL and Netscape for organizations to see the development of large-scale e-mentoring programs. Bierema & Merriam (2002) suggested that like mentoring programs, e-mentoring programs could 'level the playing field' by providing mentoring opportunities for those who otherwise would be left out of important informal networks. The earliest e-mentoring programs focused on creating educational and professional opportunities for underprivileged or underrepresented populations, such as women in engineering or underprivileged students, or focused on areas of national need. E-mentoring practitioners and researchers have not suggested that e-mentoring replace face-to-face mentoring, but have viewed it as a way to provide mentoring opportunities that otherwise would not exist (Single & Single, 2005).

Mentoring is a developmental relationship with the mentor providing career-related and psychosocial support to help the protégé grow and develop in their career path (Brown & Lent, 2005). Barton (2001) noted that mentoring can be formal or informal with formal mentoring typically being part of a program in which a mentor and protégé are paired. Formal mentoring programs will provide some type of structure and could include training for mentors and protégés, mentor/ protégé agreements, goals, development plans, set time frames, and evaluation processes. Rothwell, Jackson, Knight, & Lindholm (2005) noted that formal mentoring is used to develop specific skills and competencies; the organization will provide a standardized, but flexible, support structure to ensure that both mentor and protégé have a clear purpose and support to achieve the goals of their relationship. Assisted formal mentoring takes full advantage of the benefits of formal mentoring, while maintaining the flexibility of tailoring mentoring objectives to meet the specific needs and goals of the protégé.

Informal mentoring is more casual and unstructured with the mentor and protégé coming together of their own accord (Barton, 2001). They may meet at work, school, through a professional organization, or by some other means. In the informal mentoring process, the mentor and protégé will decide how often to meet and the type of communication they will use such as phone, e-mail, or face-to-face. The mentor and protégé will set the goals and objectives of the relationship.

Mentors, either in a formal mentoring program or informal relationship, focus on the person, their career, and support for individual growth and maturity. Hunt and Cook (2002) noted that behavioral changes occur faster when a protégé is modeling behavior after that of a qualified and experienced mentor.
Mentors are facilitators and teachers allowing the mentor and protégé to discover their own direction. Starcevich (2004) noted that mentoring is a power-free, two-way mutually beneficial learning situation in which the mentor provides advice, shares knowledge and experiences, and teaches using a low-pressure, self-discovery approach. The mentor teaches using an adult learning model and is willing to not only question for self-discovery, but also to freely share their own experiences and skills with the protégé. The mentor is both a source of information and knowledge and a Socratic questioner. Starcevich (2004) further noted that 'mentor' is a reputation that has to be personally earned; you are not a mentor until the protégé says you are.

Roles and Responsibilities of the Mentor

Tutorials for training individuals to become mentors over the Internet are available (Single & Muller, 2001). Rothwell, Jackson, Knight, & Lindholm (2005) cited the following list of the roles a mentor must perform in an effective mentor/ protégé relationship:

- A mentor is a role model who helps facilitate and foster the development of a protégé through teaching, counseling, and championing.
- A mentor teaches technical skills, culture, and politics of the organization.
- A mentor coaches via comments, support, encouragement, and even criticism about the skills, talents, behavior, and career of the protégé.
- A mentor counsels with advice on how to confront difficult situations at work, ways to advance, and approaches to improving professional skills.
- A mentor champions the protégé by showcasing the protégé's talents through introductions to professionals, and offering opportunities to carry out new assignments.

Roles and Responsibilities of the Protégé

Barton (2005) noted that the protégé should set specific goals for what they want to accomplish with the mentor's help. These goals will help bring a focus to the relationship and should also be linked to a timetable.   A protégé must be committed to learning, take responsibility for their career development, and agree to work with a mentor. Rothwell, Jackson, Knight, & Lindhom (2005) cited responsibilities of the protégé as:
- Initiate by being proactive and actively seek out a mentor.
- Participate by being eager to learn and interacting with the mentor to achieve desired goals.
- Listen actively and be open to constructive criticism and positive feedback.
- Be responsible and always be considerate and respectful of the mentor's time; express appreciation for assistance; and make only positive comments about the mentor to others.

 Research Questions

In an attempt to put into perspective what the researcher had learned from the mentoring/e-mentoring literature, the researcher purposed the following research questions.
  1. Are mentoring and e-mentoring relationships the same?
  2. Are their benefits to mentoring/e-mentoring?
  3. What are the barriers to e-mentoring?
  4. Have there been any e-mentoring successes reported?

Methodology

The research project involved reviewing the available literature, posing research questions, and drawing conclusions from the literature for future implications of e-mentoring to the field of education and human resource development. The researcher examined literature and research previously conducted on the subject of mentoring/e-mentoring, focusing on : a) are mentoring and e-mentoring the same, b) are there benefits to e-mentoring, c)roles and responsibilities of mentors and protégés, d) barriers to e-mentoring, e) mentoring successes, and f) evaluation of e-mentoring.

Results

The findings of this research are clustered on the basis of responding to each of the four research questions.
Research Question 1
     In response to Research Question 1, *Are mentoring and e-mentoring relationships the same?,* the researcher found that O'Neill and Harris (2004) noted that although e-mentoring relationships draw inspiration from traditional mentoring relationships and can attempt to emulate them in many ways, they develop differently and serve different needs. There are several reasons for this, some of which have to do with the nature of the media used, and others that have to do with the organizational and developmental distances that e-mentoring relationships span. Most e-mentoring occurs using e-mail, an asynchronous and primarily text-based medium. Because e-mail lacks the full spectrum of visual and auditory cues that people depend upon in face-to-face conversation, e-mentoring requires different interaction strategies than face-to-face mentoring to create maximal educational benefit (Sproul & Kiesler, 1991). More frequent and more explicit purpose-setting, progress-reporting, and problem-solving communications may be necessary in e-mentoring than in face-to-face (Kimball & Eunice, 1999). Building and maintaining e-mentoring relationships can be a new and challenging task for students and adult volunteers, even if they have

experience with face-to-face mentoring and telecommunications. Protégés and mentors must build understanding of their new roles in e-mentoring.

Mentoring programs are widely used in organizations as a key developmental tool for future organizational leaders. Such efforts have a long history of providing essential development, access to networks, and other growth opportunities. Mentoring is a critical developmental marker differentiating those who advance into the top levels and those who do not.

Knouse (2001) cited that an alternative to personal mentoring is to use the resources and accessibility of the Internet as a means of mentoring, variously termed virtual mentoring, e-mentoring, or telementoring. Protégés can access Web pages containing information about mentoring and links that direct them to lists of potential mentors, chat rooms, and e-mail resources. Use of search engines can provide targeted access to individual types of mentors and specific career information.

Headlam-Wells (2004) noted that e-mentoring refers to mentoring that is mediated through electronic technology and that while there is a developing literature base on e-learning in the U.K., e-mentoring is an under-researched area. Hawkridge (2003) cited that most of the literature on e-mentoring is coming from North America. Hawkridge further noted that in a recent special issue of the journal *Mentoring and Tutoring* (2003, Vol. 11, No. 1), devoted to the topic of 'Mentoring and technology: exploring the nexus', eight of the ten articles were from the United States, one was from Australia, and one was from the British Open University. Research on developing communities of practice is relevant to the design of an e-mentoring system (Wenger, McDermott & Snyder, 2002).

The protégé should be creative and resourceful to identify a list of possible mentors (Taguchi, 2006). This list would include experts who are renowned and respected in the field. E-mentoring can provide the protégé with many good mentors to choose from (Rothwell, Jackson, Knight, & Lindholm, 2005). The rewards can be numerous when a protégé has a good mentor.

Research Question 2

In response to Research Question 2, *Are there benefits to mentoring/e-mentoring?*, the researcher found that Rothwell, Jackson, Knight, & Lindholm (2005) noted that research results show that people who have been mentored report greater satisfaction and career success than non-mentored individuals. Two thirds of top corporate officers interviewed for one study reported having had at least one mentor who significantly helped them in their careers. Of 25 successful women executives interviewed in a different study, all were found to have had at least one mentor.

Barton (2001) cited that the benefits of mentoring are to help the protégé gain knowledge and skills; be more effective in their job; understand organizational culture and politics; gain new opportunities and contacts; and achieve greater career or business success. Taguchi (2006) noted the following benefits of mentoring:

- The protégé will gain first-hand experience and knowledge about what it takes to succeed in their destination career.
- The mentor could create an actual job for the protégé.
- The mentor could give the protégé access or referrals to a circle of friends and business contacts, opening the door wide for the protégé.
- The mentor could serve as a valuable reference and vouch for the protégé's potential.
- The time with your mentor is an important credible work experience to others in the field for when the protégé starts to interview for jobs.

Knouse (2001) suggested that the Internet provides several unique advantages over traditional one-on-one mentoring with immediate access to tremendous amounts of information. Individuals can access Web pages on mentoring or send e-mail at any time of the day or night, seven days a week (Wah, 2000). Protégés can have varied feedback on their questions, while chat rooms or different Web pages that focus on mentoring provide different perspectives and directions from online mentors with varying backgrounds. From the perspective of the organization, e-mentoring is cost effective with software for e-mailing and access to chat rooms already in place (Muller, 2000). Single and Single (2005) noted that research supports that e-mentoring provided many of the benefits associated with face-to-face mentoring, informational, psychosocial, and instrumental benefits. Single and Single further cited that informational benefits referred to the transfer of information and subject-matter that benefits a newcomer; psychosocial benefits referred to self-esteem enhancement, confidence building, and support for risk-taking that protégés gained from successful mentoring relationships; and when mentors provided opportunities for protégés and championed them with colleagues, then the protégés were the beneficiaries of instrumental benefits.

E-mentoring for virtual education can help students to overcome feelings of isolation through personal contact and access to a wide variety of mentors and resources on the Web, and networking on a much wider scale. Headlam-Wells (2004) noted that e-mentoring provides flexibility and easy access that is highly beneficial to those who would normally face barriers to being mentored because of their gender, ethnicity, disability or geographical

location. A further benefit of e-mentoring is that the protégés are able to take responsibility for initiating contact and to play an active role in online discussion. Mentors also received benefits such as the opportunity for personal growth through mentoring, helping others in the profession, and offering support and advice.

Owens (2006) noted that Carol B. Muller was the founder and CEO of MentorNet in San Jose, CA; it is a non-profit e-mentoring network that addresses the retention and success of women and minorities in engineering, science, mathematics, and technology. The network works in partnership with colleges and universities, corporations, government laboratories and agencies, and professional organizations. Online mentoring has been proven effective in enabling businesspeople to share their knowledge and life experience with those who have not yet entered the workforce. Protégés benefit from mentors who can provide useful real-world applications for what they are studying. Since 1998, more than 15,000 mentoring relationships have taken place through MentorNet. Today MentorNet has a worldwide community of students and professionals.

Research Question 3

In response to Research Question 3, *What are the barriers to e-mentoring?,* the researcher identified that Brotherton (2001) noted that one of the barriers to e-mentoring could be having the technology to support e-mentoring, especially if the student is working from their home computer. While e-mentoring can make it more convenient for mentors and protégés, monitoring, evaluation, and keeping the program going takes time.

Single and Single (2005) noted that as e-mentoring expands, practitioners and researchers are encouraged to be cognizant of narrowing the digital divide. The digital divide is defined as 'a home computing gap between White and affluent Americans and those who are ethnic minorities or poor' (National Science Foundation Division of Science Resources Statistics, 2000, p. 2). While many middle and upper-class students have access to computers in their homes, this does not hold true for students in Black, Hispanic, and low-income households (U.S. Department of Commerce, 2000). Therefore, such populations would neither have ready access to, nor experience using, technology. When providing e-mentoring opportunities to populations without ready access to technology, the programs will need to invest more resources in hardware and training.

Research Question 4

In response to Research Question 4, *Have there been any e-mentoring successes reported?,* the researcher found that Owens (2006) noted that Intel has been a pioneer in online mentoring initiatives with its automated mentoring web site initially launched for its HR team in 2001, then adopted for all of Intel's 100,000 employees in 2003. Surveys conducted by HR demonstrated that online mentoring was favored over in-person pairings due to its ease and immediacy. KPMG, LLP, a New York-based tax and audit firm with about 18,200 employees nationwide, has also found success using an online mentoring database with about 6,000 mentoring relationships formed.

Burke and Cooper (2005) cited a pilot study by the Bank of Montreal where mentors and protégés were carefully matched. Surveys sent to protégés, their managers, and mentors revealed that all reported significant benefits. Protégés had more extensive networks and a better understanding of bank operations. Mentors reported a greater sense of teamwork and collegiality. Managers reported that protégés better understood what was required to succeed. The Bank of Montreal viewed the pilot as successful and implemented it bank-wide.

Barton (2001) noted that organizations such as Hewlett-Packard, Kimberly-Clark, Lucent Technologies, and Pricewaterhouse Coopers have successful formal mentoring programs in place.   Since the mid-1990s, non profit organizations such as iMentor, NetMentors.org, and the international Telementor Program have sprung up to connect via the Internet, students with working adults (Brotherton, 2001). Following the pattern of those successful e-mentoring programs, traditional mentoring organizations including Big Brothers/Big Sisters and the National Mentoring Partnership have added online components to their mentoring programs.

Mahayosnand (2000) cited an example of success with MentorNet, an electronic industrial e-mentoring program for female undergraduate and graduate students in engineering and related sciences established in 1996. Mahayosnand further noted that Women in Engineering Programs and Advocates Network, the nonprofit organization that administers and governs MentorNet, found four primary advantages of a national e-mentoring program over locally based programs:

- The larger the pool of participants, the more diversity and suitable matches;
- Students are not limited to organizations located in their school's geographical area;
- Economies of scale offer schools relief from the costs of administering their own programs; and
- A national program can be evaluated for the development of best practices.

Evaluation of E-mentoring

Hunt and Cook (2002) suggested that if a mentoring program is to have a sustained positive impact on an organization, it must be constantly evaluated, adjusted, and administered for the long term. Evaluation should be

tied to the goals that are set by the mentor and protégé. These evaluations of the e-mentoring project should occur midway through the project and at the endpoint through questionnaires of both the mentor and the protégé (Headlam-Wells, 2004). Owens (2006) noted that the Intel e-mentoring program regularly administers surveys that measure satisfaction rates and progress. As with any student centered program, evaluation needs to occur in a timely manner to ascertain the benefits of the program and the parts that need to be revised.

Conclusion and Contributions to HRD

Traditional mentoring programs still reign, but online mentoring (e-mentoring or virtual mentoring) is a growing trend. E-mentoring has demonstrated to be a two-way mutually beneficial learning situation where the mentor provides advice, shares knowledge and experiences, and teaches using a self-discovery approach. Mentoring over the Internet, e-mentoring or virtual mentoring, is becoming increasingly more important with many organizations experimenting with mentoring through their Web pages. Bierema and Hill (2005) noted that they have practiced and found considerable value in e-mentoring and many benefits that were enabled by the process. Research that was identified has shown that e-mentoring can be as effective as traditional mentoring when the project is carefully planned, however, more research is needed. The prospects for virtual mentoring have a great future in education and human resource development, according to Bierema and Hill (2005). In the next decade, we will see a more coordinated effort in e-mentoring as technologies evolve in the areas of higher education, professional organizations, work teams, and virtual education.

References

Barton, K. (2001). *Connecting with success: How to build a mentoring network to fast-forward your career.* Palo Alto, CA: Davies-Black.

Bierema, L. L. & Hill, J. R. (2005). Virtual mentoring and HRD. *Advances in developing human resources, 7 (4), 556-568*.

Bierema, L. L. & Merriam, S. B. (2002). E-mentoring: using computer mediated communication to enhance the mentoring process. *Innovative Higher Education,* 26, 211-227.

Brotherton, P. (2001). Students connect with mentors through email. *Techniques,* 76 (8), 38-40.

Brown, S. D. & Lent, R. W. (2005). *Career development and counseling: Putting theory and research to work.* Hoboken, NJ: Wiley.

Burgstahler, S. & Cronheim, D. (2004). Supporting peer-peer and mentor- protégé relationships on the Internet. *Journal of Research on Technology in Education*, 34 (1), 59-74.

Burke, R. J. & Cooper, C. L. (2005). *Reinventing human resource management: Challenges and new directions.* New York: Routledge, Taylor & Francis Group.

Cravens, L. (2003). Online mentoring: Programs and suggested practices as of February, 2001. *Journal of Technology in Human Services,* 21 (1/2), 85-109.

Fulop, M. (2002). *Assessing the potential of e-mentoring: A survey of current issues.* Portland, OR: National Mentoring Center, Northwest Regional Educational Laboratory.

Hamilton, B. A. & Scandura, T. A. (2003). E-mentoring: Implications for organizational learning and development in a wired world. *Organizational Dynamics,* 31 (4), 388-402.

Hawkridge, D. (2003). The human in the machine: reflections on mentoring at the British Open University. *Mentoring and Tutoring,* 11 (1), 15-24.

Headlam-Wells, J. (2004). E-mentoring for aspiring women managers. *Women in Management Review,* 19 (4). 212-218.

Hunt, A. & Cook, E. (2002). Managing growth: Preparing protégés for succession. *Businessleader. Com.* No. 12, Raleigh, NC. Retrieved September 1, 2006, from http://www.businessleader.com/bl/jun02/proteges.html.

Kimball, I. & Eunice, A. (1999, November). *Zen and the art of facilitating virtual learning communities.*   Los Angeles, CA: Paper presented at the Thinkquest Teachers Summit.

Knouse, S. B. (2001). Virtual mentors: Mentoring on the Internet. *Journal of Employment Counseling,* 38 (4), 162-169.

Mahayonsnand, P. P. (2000). Public health e-mentoring: An investment for the next millennium. *American Journal of Public Health,* 90 (8), 1317-1318.

Muller, C. B. (2000). Mentornet. *AWIS Magazine* 24 (1), 19-23.

National Science Foundation Division of Science Resources Statistics (2000). *Complex picture of Computer use in the home emerges, NSF 00-314,* Issue brief prepared by Maria C. Papadakis, Eileen L. Collings, Project

Director, National Science Foundation, Arlington, VA.   Retrieved September 3, 2006 from: http://www.nst.gov/sbe/srs/issuebrf/sib00314.htm.

O'Neill, D. K. & Harris, J. B. (2004). Bridging the perspectives and developmental needs of all Participants in curriculum. *Journal of Research on Technology in Education,* 37 (2), 111-128.

O'Neill, D. K., Wagner, R, & Gomez, L. (1996). Online mentors: Experimenting in Science Class. *Educational Leadership,* 54 (3), 39-42.

Owens, D. M. (2006). Virtual mentoring: Online mentoring offers employees potentially better matches from a wider pool of candidates. *HR Magazine,* 51 (3), 105-107.

Rothwell, W. J., Jackson, R. D., Knight, S. C. & Lindholm, J. E. (2005). *Career planning and succession management: Developing your organization's talent – for today and tomorrow.* Westport, CT: Prager.

Single, P. B. & Muller, C. B. (2001). When e-mail and mentoring unite: The implementation of a nationwide electronic mentoring program. In L. Stromei (Ed.), *Implementing successful Mentoring and coaching (*pp. 107-122). Cambridge, MA: American Society for Training and Development.

Single, P. B. & Single, R. M. (2005). E-mentoring for social equity: Review of research to inform program development. *Mentoring and Tutoring,* 13 (2), 301-320.

Sproul, L. & Kiesler, S. (1991). *Connection: New ways of working in the networked organization.* Cambridge, MA: MIT Press.

Starcevich, M. M. (2004). *Coach, mentor: Is there a difference?* Retrieved September 2, 2006, from http://www.coachingandmentoring.com/Articles/mentoring.html.

Taguchi, S. G. (2006). *The career troubleshooter: Tips and tools for overcoming the 21 most common challenges to success.* New York: Amacom.

U.S. Department of Commerce (2000). *Falling through the net: Toward digital inclusion. Executive Summary. R*etrieved September 3, 2006, from
 http://osecnt10.osec.doc.gov/public.nsf/docs3E1A7297DC433BC9852569770076E173

Wah, L. (2000). Workplace of the future. *Management Review* 89 (1), 1-2.

Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice.* Boston, MA: Harvard Business School Press.