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Evolving Mentoring into E-mentoring for Future Applications and Improvement

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TAPPING INTO INTERNET RESOURCES: AN E-MENTORING OPTION

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CERTIFICATE OF APPROVAL

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CAPSTONE PROJECT

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Evolving Mentoring into E-mentoring for Future Applications and Improvement

This is to certify that the Capstone Project of

Andrew James Wood

Has been approved by the faculty advisor and the CE 695 – Capstone Project

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Approval Date: _____

Abstract

Since electronic communications do not necessarily have time or distance constraints, a mentoring program utilizing this communication style could reach a greater number and variety of mentors for students. Mentoring can have a large impact on students in a world where who you know is key to reaching educational and career goals. The benefits and barriers to such a program must first be assessed in order to ascertain the efficacy of e-mentoring. Upon review of relevant literature, these benefits and barriers were discussed and many suggestions for implementing e-mentoring programs were found.

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Bierema and Mrriam (2002), have defined e-mentoring as "A relationship that is established between a more senior individual (mentor) and a lesser skilled or experienced individual (protégé), primarily using electronic communications, and that is intended to develop and grow the skills, knowledge, confidence, and cultural understanding of the protégé to help him or her succeed, while also assisting in the development of the mentor" (p. 108).

E-mentoring has many names; computer-mediated interaction, virtual mentoring, e-mentoring, telementoring, online mentoring, and cybermentoring are examples of the various names used by the studies that will be reviewed later in this paper. The most important characteristic of E-mentoring, no matter which name you use, is that a greater variety of mentors are available to match to students' based on their needs. This availability of mentors is possible because email does not necessarily have time or distance constraints.

Interest in this topic for me stems from a past work experience in which I helped administer an e-mentoring program as part of an alternative learning classroom. While room for improvement was apparent in this program, I content that this topic may be useful to school counseling because it opens opportunities for today's youth to connect to more individuals in the community who can have a positive impact on their lives for academic, career and personal/social development. Simply, e-mentoring creates opportunities for youth that were not previously possible. With adjustments, publicity, and practice, this program could be used by school counselors across the nation to improve the lives of a vast amount of students and community members.

This article reviews literature measuring the advantages and barriers to e-mentoring and what e-mentoring literature advises readers to do when creating their own e-mentoring program for it

to be successful. In particular, occasional, face-to-face meeting time is discussed as one idea that

can develop the e-mentoring process and make it an effective program in schools. Shared

ethnicity and gender between mentors and protégés is another topic discussed in this article as a

beneficial modification to the e-mentoring program.

<u>Traditional Mentoring</u>

To understand e-mentoring some understanding of traditional mentoring must be met first.

Origins of mentoring could be seen going back to Homer's epic poem, the *Odyssey,* thousands of

years ago. In this story Homer tells the story of a wise old sea captain named Mentor (the

goddess Athena in disguise), who gives guidance to Odysseus's son, Telemachus, in the area of

coping with his father's long absence since the Trojan War (Yaw, 2007). Since Homor wrote

about Mentor, the concept of mentorship has not changed much. Simply, traditional mentoring

programs pair participants, as protégés, with volunteers, as mentors, who provide one-on-one

friendships, guidance, and support to those participants for a variety of reasons. Presently,

mentors are usually selected from university or school staff, faculty, corporate personnel,

professionals, older peers, or volunteers from the community (Yaw, 2007) to meet with

individuals who want to develop skills or learn new knowledge about a career field.

E-mentoring Literature Review

In this section the advantages and benefits of E-mentoring are discussed as well as some difficulties with it. E-mentoring is a relatively new modification to traditional mentoring; over the few years, it has been around, it has changed and grown in many ways. By looking at the advantages of e-mentoring, school counselors interested in it can determine if e-mentoring may be a viable option to replace traditional mentoring in schools. As with most programs that are new, it is still working through some unforeseen problems or barriers. These barriers, experienced and discussed in the literature, will also be examined below.

Advantages and Benefits of E-mentoring

In 2001, Toni Cascio and Janice Gasker wrote an academic article on their study of computer – mediated mentoring in social work education. They were looking to see if a computer-mediated interaction could replace professional mentoring in education, especially in regards to developing professional identity. Participants in their study included students in one section of a pre-professional baccalaureate level course who were randomly paired with a section of master's level students in a family therapy course. Of those in the baccalaureate level course, 12 undergraduate students volunteered to be protégés ranging in age from 20 to 25: one being African American, one Hispanic, and the remainder Caucasian. Out of the protégés, only one was male. Fourteen graduate level students volunteered to be mentors from the family therapy course, two being African American women, while the rest were Caucasian women. Ages for the mentors ranged from 22 to 41 and comparison groups were used in this study as well, consisting of 15 undergraduates and 17 graduate students. Comparison groups were created from second sections of the pre-professional baccalaureate level course and master's level family therapy course. Toni Cascio taught the two master's level classes while Janice Gasker taught the two

bachelor's level classes. Students in the experimental group were instructed to communicate weekly via email and for the first four weeks, topics were provided by the investigators (i.e., Cascio and Gasker). Open-ended questions were used the first four weeks to allow for spontaneity; yet they were structured enough to create weekly correspondence specifically related to professional development. Students were then left to generate their own topics for the last two weeks of the study. Even thought the study was voluntary extra credit was offered to students who chose to participate. To measure the acquisition of professional social work values a pretest and posttest survey were implemented with both experimental and comparison groups along with a qualitative analysis be conducted of the students' email correspondence. Grounded theory method of evaluation was used to analyze findings whereby themes were drawn from data and categorized according to relevant dimensions. Last of the measures was to have T-tests used for comparison of means in the survey results.

From Cascio and Gasker's study (2001), it was found that the mean score for the pretest on professional identity in bachelor level students in the experimental group showed a significant increase in professional identity over the time of the study. These quantitative findings from the study demonstrate that professional identity of bachelor level students can be positively influenced by their master level counterparts through e-mentoring. Later in this same study it was found that mentors in the study performed the duties of defining and explaining professional roles, explaining values in practice, and giving direct advice in a variety of areas. The categories of validation, emotional support, normalizing, and enthusiasm were found fulfilled by e-mentoring in this study and leading toward the belief that e-mentoring holds many benefits for its protégés.

In 2011, Wendy Murphy, at Babson College, wrote an extensive article on her own e-mentoring study. In this study she aimed to answer a multitude of questions focused on support received from mentors, interaction frequency, satisfaction, intention to continue the mentoring relationship, and level of developmental initiation. This study involved 206 students enrolled in management courses at a large Midwestern university as protégés. The mean age of a protégé participant was 22.3 years old with 72.8% of the population being male and 27.2% female. Ethnic distribution for this study included 72% Caucasian/while, 14.0% Hispanic/Latino, 8.8% Asian, 2.9% Black, and 0.7% Native American while 1.5% did not report identifying with an ethnicity. 206 alumni and friends of the university volunteered to participate as mentors in this study, a minimum of 10 years professional experience being required.

Through a new scale developed for Murphy's study (2011), it was demonstrated that e-mentoring experience may enhance the tendency for students to seek developmental relationships, which would be a great benefit for the protégés. One advantage to e-mentoring that was found when study results showed that a perceived similarity was a better predictor of support for both students and mentors than actual similarity; this lending itself to the idea that e-mentoring may remove cross-gender barriers to receiving mentor support and promote social equity (Murphy, 2011). Perceived similarity was also found to be directly related to mentorship quality from the perspective of the mentor furthering support of the removal of cross-gender barriers.

Benefits do not necessarily need to be for the protégé only, but rather for the mentor as well. From Murphy's study (2011), both vocational support and psychosocial support provided were significantly associated with mentors' intention to continue their relationships. Value in

building one-on-one relationships through the process of e-mentoring was found by mentors along with a feeling of connection to the university. For example, one mentor wrote:

> Great Program – keeps us out here grounded and I would like to see many more programs like this one. It is critical that academia and business world collaborate – bring values, positivity, and purpose together and raises career satisfaction, sustainable results. This communications approach also is where we are going – so a good idea to use in the curriculum. Perhaps requiring a conference call now and then would be good – since that's part of virtual careers too (Murphy, 2011, p.# 619).

This connection to the university can lead to many benefits on the behalf of the mentor as well as benefiting a future protégé in having an experienced mentor to connect with. This can also be seen as an advantage e-mentoring has over traditional mentoring due to the lessening of time and space constraints leading to a larger number of mentors being available.

Another research article evaluated the outcomes of an e-mentoring program to see how effective e-mentoring could be upon attitudes and potential behaviors of teacher candidates when considering work in an inner-city school district (Penny & Bolton, 2011). Participants of this study included approximately 75 students as potential e-mentors, selected from 3 different sections of an introductory educational technology class at Central University. One class served as a control group with no interaction with the e-mentoring project while the second class consisted of students who participated in e-mentoring, but did not visit a school for face-to-face mentoring, while the third class did visit a school in Philadelphia during the project while still participating in e-mentoring. Each mentor was assigned a student from a school in the Philadelphia School District, making 50 students from this school district protégés in this study.

At the beginning of the study both parties were asked to post general introductory information, then mentors were instructed to write observations and questions regarding subject matter in a science unit from their protégé's school. MentorPlace was chosen as the electronic interface to facilitate these posts and one exchange each week through this interface was required. In addition to mentoring protégés e-mentors were required to work on a webquest addressing a science topic. Finalized webquests were then sent to teachers in the Philadelphia Schools who chose one webquest to use in their science unit. To gather information on this study, mentors complete an online survey at the beginning and end of the semester with Likert scales focused on attitude statements in this survey.

From the survey mentioned in Penny and Bolton's study (2011), they found that a high percentage of mentors responded that the e-mentoring experience helped prepare them as candidates to be teachers, showing that mentors can benefit from e-mentoring as well as protégés. How technology can make an impact in the classroom was one such experience that mentors reported learning along with an awareness of what students in this study's demographic are like, including the diversity of students, their interests, behaviors, knowledge and abilities, how to interact and communicate with them, and what they are learning in the classroom. A significant number of mentors reported a new confidence in their abilities as a prospective teacher and that e-mentoring helped them feel good about their decision to pursue the teaching profession.

Another article that explores the benefits and advantages of e-mentoring (Edirisingha, 2009) explored how e-mentoring could help mature students' transition to higher education. To facilitate this study an "Access" was utilized; an Access refers to a separate entity that provided this study with learning modules and programs in nursing and social work, humanities, and

information technology from seven different education colleges in the United Kingdom where

this study was undertaken. In this study Edirisingha uses a program called Blackboard to deliver

selected core Access learning modules and to facilitate tutorial support of 320 protégés who were

selected from the Access programs. The results of this study explored how sixteen mature

undergraduates from Kingston University, selected as e-mentors for this study, felt overall about

the helpfulness of the program. Additional research evidence was collected via a background

questionnaires given to 277 protégés at the start of this study, personal interviews with 14

mentors, group interviews with 35 protégés who progressed to higher education, personal

interviews with ten tutors on participating Access courses, and an evaluation questionnaire

completed by 86 protégés at the end of their Access courses.

Erisingha (2009) found that a significant number of students reported using Blackboard

for learning about the Kingston University. Out of the 47 students who responded to that

questionnaire, 35 indicated that the e-mentoring system was helpful in finding out about

university life and 21 of the 47 students indicated that their e-mentors had provided useful

guidance on practical aspects of the university. Students in the study indicated that online

interactions with their mentors had given them an extra dimension of support, and technological

skills including using email, sharing information and resources with peers, and checking

assignment deadlines were also skills learned. From this study, e-mentoring protégés found many

benefits in their higher education pursuit. This goes to show that e-mentoring can be used to

achieve specific goals for protégés as well as general technological skills that can be used in

everyday 21st century life. Interviews further revealed that e-mentors of this study tried to instill

in their protégés a sense of belonging to their future profession and an evaluation questionnaire

collaborated these findings. Looking at perspectives from the protégés, answers to a final

questionnaire showed that protégés' valued e-mentors' advice when it came to applying to universities and replies from mentors helped protégés to stay calm and follow up on their application progress. Out of the 47 students who responded to this questionnaire, 25 stated that getting information on the application process from their mentors had been useful and a similar amount answered that getting information on preparing for interviews had been helpful as well. 28 of 47 students confirmed that the e-mentoring process had been helpful in developing confidence and 25 of the 47 students stated that e-mentors had provided them with tips and advice on how to study more effectively. Interviews confirmed 3 beneficial ways in which e-mentoring helped raise protégés' awareness of higher education; they learned about life and studies at the university, it helped protégés' in the application process and it proved that protégés' had become more effective and confident learners throughout this whole process.

Costs and benefits of being a mentor were researched in a study done by Ragins and Scandura in 1999. This study asked the questions; how is a mentoring experience associated with expected benefits and costs of being a mentor, how those benefits and costs relate to a mentor's willingness to participate in mentoring again, and what is the effect of prior mentoring experience on the willingness of a mentor to join the e-mentoring process again. Surveys were sent to high-ranking managers and executives; 176 women and 99 men returned the surveys creating a participant pool of 275 useable surveys. 96.7% of the respondents identifying with being Caucasian, while 76.7% identifying with being married, 96.4% employed full-time, and 62.5% holding bachelor degrees. The researchers in this study developed two 7-point Likert-type instruments to measure costs and benefits of mentoring relationships in this study, one instrument for costs and one for benefits. The cost instrument consisted of 17 items with a coefficient alpha of 0.83 while its counterpart, the benefit instrument, had 24 items with an alpha

of 0.89. Used in the final survey for the two instruments was a separate principal components

factor analyses with varimax rotation.

Ragin's and Scandura's research study (1999), found that individuals with experience in

mentoring reported a gain in a sense of satisfaction and fulfillment from mentoring relationships

while participants who had no experience in mentoring reported that mentoring relationships are

not worth the time they take up. This view is important because potential mentors may have

preconceived notions of the value of mentoring relationships which may impact their decision on

whether to be a mentor. The study then suggested that protégés are more likely to enter

mentoring again later as a mentor and once they've experienced the role of mentoring they are

even more likely to continue to enter more mentoring relationships as mentors. These results

hold implications for e-mentoring because as e-mentoring counters the main cost argued by

participants, the cost of time, it creates opportunities for more people to participate in mentoring

leading the faster creation of individuals who are looking to continue participating in the

mentoring process.

E-mentoring simplified is a modern day form of networking, Hwang and Francesco's

study (2004) tackled the questions of how culture predicts learning-oriented networking

behaviors along with how these behaviors impact performance. The sample used in this study

consisted of undergraduate business students, ranging in age from 18 to 44, from the countries of

the United States with 253 participants, Hong Kong with 266 participants, and Singapore with

131 participants. Gender of participants was 63% female. Scales from Wagner's (1995) five

factors were used to measure individualism-collectivism in regards to culture. An additional

measure, used to find grade performance, was to have students in this study list their classes and

grades prior to the semester.

Results from Hwang and Francesco's study (2004), show that self-reliant individuals are more likely to take advantage of networking, seeking out others for information while networking with fellow students and professors was found to be beneficial to positively predicting grade performance. It was found that networking can help to achieve learning performance across different cultural environments and suggested that academic institutions should facilitate learning-oriented networking based on the low frequency of networking behavior observed in this study and the significant positive relationships found between networking and performance. This study examined in-person networking and proposed electronic networking as a solution to the challenge of high time demands for face-to-face encounters. The study gave the examples of how electronic mail, blackboards, and virtual discussion rooms should be used to encourage professors to become more accessible. E-mentoring fulfills the specifications for networking which was shown to be beneficial to students' performance by this study.

The studies above demonstrate many benefits for those involved, both the mentors and the protégés. The mentors perform the duties of defining and explaining professional roles, explaining values in practice, and giving direct advice in a variety of areas which help to fulfill the categories of validation, emotional support, normalizing, and enthusiasm. Additionally it was found that E-mentoring may remove cross-gender barriers to receiving mentor support and promote social equity. Also by lessening the time and space constraints a larger pool of mentors are made available which helps protégés match up with the right mentor. Students have indicated that online interactions with their mentors has given them an extra dimension of support, and technological skills including how to use email, share information and resources with peers, and check assignment deadlines. Another benefit was that e-mentoring instills in protégés a sense of

belonging to their future profession and they value their mentors' advice when it came to applying to universities and following up on their application progress.

Barriers to E-mentoring

E-mentoring has many barriers to consider in addition to the many the benefits and advantages. Some of the barriers that will be mentioned below are protégés not responding to a post made by a mentor, protégés having other support networks which could possibly make the e-mentoring process redundant, and differing opinions on what appropriate participation looks like from the mentor and protégé. The e-mentoring process can come to an abrupt halt if one of the participants fails to initiate or respond to communication. Conflict and frustration may arise if one individual in an e-mentoring pair feels that their partner's participation level is extremely low while viewing their own participation level as high. A mismatch between requirements of the mentor and protégé in terms of communicating within the time and space limitations could also cause the relationship to fail. While these barriers may seem daunting, potential solutions were sometimes discovered during the course of the studies below.

In Cascio and Gasker's study (2001) on computer-mediated mentoring in social work education, a couple e-mentoring pairs experienced some of these barriers. In at least 7 e-mentoring pairs from this study, researchers observed at some point a protégé not responding to a posting by a mentor. In four of these cases the mentor would take responsibility to email the protégé again asking why there was no response. A gentle question was usually asked such as "… haven't heard from you in a while, figured you might have been on spring break" or "I hadn't heard from you in a while so I thought I would send a quick note to see how things are going (Cascio & Gasker, 2001)." In each of these cases the protégé would respond and the exchange of emails continued; however, in 3 partnerships responses ended abruptly because

these mentors did not take the initiative to send another email. The loss or neglect to send an

email is a barrier in e-mentoring that in some cases can cause an abrupt stop to the e-mentoring

process.

In 2010Thompson, Jeffries and Topping wrote a journal article about a study they did on

E-mentoring for an e-learning development program. They set out to identify consulting and

counseling behaviors, socio-emotional support behaviors, goal-setting and problem-solving

behaviors in e-mentoring. The study operated in two year-long phases, involving 8 protégés in

the first phase and 16 protégés in the second phase. The first phase included 5 mentors while the

second phase included 7 mentors, two of which had been protégés in phase one. In each phase

mentors advised their protégés' in adapting an existing traditional learning module for online

delivery or to create a completely new online module. During the mentoring period, two face-to-

face training days were used for mentors along with three face-to-face groups plus pair-wise

training/meeting days for mentors and mentees which were linked using a web-based chat room

facility. Email, telephone and some face-to-face mentoring contact between pairs were also used

for mentoring during this study. As an incentive mentors were paid eight hours per year for each

protégé. Phase one was different from phase two because it used specific details and tools,

including a project plan while phase two included 9 program leaders. Evaluating this study

involved gathering feedback from researchers in the study using a questionnaire delivered and

returned by email along with using face-to-face semi-structured interviews with mentors. All

mentors returned their questionnaires and were interviewed, but only 14 of the 16 protégés

returned their questionnaires with two dropping out of the study. Random selection was then

used to pick five mentees to be interviewed face-to-face. All mentor/protégé measures,

interviews, and data analysis were devised and performed by external consultants. The last

method to gather results included project staff interviewing 7 of phase two's 9 program leaders.

Thompson, Jeffries and Topping (2010), stated in their article that many mentors felt

protégés should be committed to responding to communications. For example, mentors

commented: "'I don't know whether to keep bombarding them with email'" or "I felt I was

badgering" (p.3)'. To add to the complications of this barrier, which was also observed in Cascio

and Gasker's study, Thompson et al., identified that when protégés had other support networks

mentors were needed less and the mentoring system risked being seen as redundant. A lack of

response in this case could mean that the protégé is doing extremely well and doesn't need their

help, but it would difficult for a mentor to know whether this is the case or not.

Loureiro-Koechlin and Allan (2010) created a study on an e-learning in which they

searched for what the effects of implementing an e-learning and e-mentoring process would have

on encouraging graduate women to progress into employment and management positions of the

logistics and supply chain industries. Participants in this study included: 60 students acting as

protégés, 34 mentors and a project team of 5 members along with 3 tutors. Once these

participants were recruited, all of whom were women, they took part in a taught module

delivered partly online and on a part-time flexible basis. The researchers of this study believed in

an ethnography approach which made the researchers both participants and observers. The data

collected in this study included project documentation, online discussion group messages, and

online module and mentoring evaluation questionnaires. Additionally in-depth interviews were

held with 12 people associated closely with the study. The study took a data analysis approach to

analyze content using a coding scheme. A two-stage analysis was used with the first stage

identifying the activities carried out and issues raised during the taught module and mentoring

process. In the second stage, structuration theory was used to make sense of individual experiences within the project and interpreting findings.

Loureiro-Koechlin and Allen's study (2010), looked at the context of e-learning and e-mentoring, in which individuals could be perceived as both 'alone' in front of their computer screen, part of an online community, and/or in one-to-one relationships with their mentor or tutor depending upon the e-mentoring process and participation level. This participation level may depend on the individuals' perceptions of being absent or present themselves and how they felt the other community members were participating. This could lead to a potential barrier in which one individual in an e-mentoring pair feels their participation can be extremely low even though the other individual's participation level may be high. Some mentoring pairs in Loureiro-Koechlin and Allen's study reported that they were not satisfied with the mentoring process, possibly due to the lack of participation of either the mentee or mentor. An example of this can be seen in the following case, found in Loureiro-Koechlin and Allen's study:

> A protégé requested an online meeting with her mentor who responded by providing four alternative dates or times which were within the next 10 days, but in this case the protégé did not respond to this message for 10 days by which time the proposed meeting times were unusable. Next the mentor responded by offering some additional times for an online meeting plus possible times for a face-to-face meeting, but the mentee's reply came after 12 days and a meeting never took place.
>
> (Loureiro-Koechlin & Allan, 2010, p. # 733)

The example depicts a time frame difference which leads to an inability to create a working routine. When this is put together with a mismatch between requirements of the mentor and protégé in terms of meeting time/space, the relationship could not work out. This described a

barrier to e-mentoring which is caused by the flexible time/space constraints which are usually an advantage of e-mentoring.

Finale Suggested Modifications to E-mentoring

No mentoring program is perfect as was seen in the many barriers mentioned above, but with time, e-mentoring may adjust to overcome some of those barriers. The studies reviewed in this paper have many helpful suggestions on how to create success in e-mentoring programs. One such suggestion might be to include some face-to-face traditional mentoring with e-mentoring to create a blended mentoring experience to get the best of both mentoring strategies. Some suggestions included matching protégés with mentors who have the same race or gender as them. Even so, the articles had mixed reviews on whether these modifications are positive additions or not.

The need for face-to-face mentoring

In Murphy's 2011 study on increasing support from e-mentors and protégés, a significant association was found between talking on the phone and meeting face-to-face, with vocational support being provided by mentors. Talking on the phone or meeting face to face, was associated with vocational support for mentors and meeting face to face was directly related to a protégé's career planning. Career planning and protégé satisfaction with their mentor was then significantly associated with developmental initiation (Murphy). The results from this study strongly suggest that including face-to-face interactions with e-mentoring could make some improvements to the outcomes of e-mentoring.

Results from Thompson, Jeffries and Topping's study (2010) on e-mentoring and e-learning development found many mentors had the opinion that more frequent contact would have been helpful as well as an early face to face meeting. In addition, offering an online tutorial

and manual early in course development improved satisfaction with e-mentoring. The study

supported this opinion and found that purely electronic contact appeared ineffective and early

face-to-face meetings between mentors and mentees were widely seen as essential. It was then

suggested that effective e-mentoring for purposes similar to this study should involve blended

forms of communication including face-to-face options.

     At the start of the online activities in Loureiro-Koechlin and Allen's study (2010), it was

found that students drew on their knowledge of face-to-face interaction and tried to mimic them

through the electronic mediation source used for e-mentoring. Over time students separated face-

to-face interaction with online interactions; this included developing their own online routine in

combination with new online conventions of communication. According to the data collected,

the use of face-to-face induction sessions to practice introducing protégés to e-mentoring may

have given students the wrong impression, making them think that face-to-face meeting was a

similar process to online interactions. Data from the study suggests that mentoring exchanges

worked better when both mentor and mentee were enthusiastic and keen to learn together how to

carry out mentoring. It was assumed that this could not happen if the face-to-face meeting at the

induction session was included in the e-mentoring program. Without this face-to-face meeting

pairs could achieve a common set of beliefs in establishing an e-mentoring routine where

communication occurred on a regular basis and mentors were able to answer protégés' inquires,

leaving both to feel satisfied with their exchanges. This leads to the idea that face-to-face should

not be included in the e-mentoring process.

     With regard to the perceived benefits in the Penny and Bolton study (2011) where e-

mentoring was used in relation to teaching candidates, there were differences found between

those who visited the school and those who did not. Those who visited appeared to feel as if they

better understood the challenges of urban education and the special needs of students in an urban setting. These candidates were also found to have a greater sense of what it is like to be a teacher and the visit helped them to improve their teaching skills. It appears that the school visitation helped mentors understand their protégés' situations, and it gave them a sense of what teaching would involve. An apparent significant difference was found in mentors who visited (Penny and Bolton); they had a greater positive shift in their attitude toward teaching in an urban setting than those who did not visit. In this case the mentors were found to benefit from face-to-face interaction with the protégés. Overall, in reviewing various studies in this literature review, it appears that whether face-to-face interaction would improve e-mentoring depends upon the specific application of the e-mentoring program.

In a 2008 article by Smith-Jentsch, et al., many questions were asked about the effects of gender and face-to-face meeting on e-mentoring. Specifically the researchers in this article asked; would there be more or less psychosocial support in e-mentoring than traditional mentoring, would gender moderate the effect or impact of communication mode, would there be a difference in the amount of interactive dialogue between face-to-face mentoring and e-mentoring, would self-efficacy levels be effected by psychosocial and career support, and would there be a correlation between dialogue interactivity and self-efficacy. Recruiting from an undergraduate biology class this study found 106 undergraduate freshmen to participate in their study as protégés. The mentor participants in this study were found from an upper-level biology class, 24 males and 31 females with at least a 3.0 GPA. Protégé participants were randomly assigned to either a face-to-face mentoring group or a solely electronic chat communication group. Mentor participants were assigned one face-to-face protégé and one strictly electronic communication protégé. This study included a fiscal incentive of $10 an hour for mentors and $8

an hour for protégés on the completion of measures. To measure results, 15 items from the

college self-efficacy inventory, a mentor/protégé report on how much psychosocial support and

career support they felt, and transcriptions of audio recordings of face-to-face sessions were

used. 6-point Likert scales were used to assess the self-efficacy inventory and participant reports.

2 raters and coders were used to assess data from the transcripts.

From the Smith-Jentsch et al. (2008) study, it was found that protégés who were

mentored through electronic chat received fewer statements supporting career and psychosocial

goals than those mentored through a face-to-face. While this may be a negative to e-mentoring, a

positive to e-mentoring was also found in that the dialogue between mentors and protégés was

significantly more interactive in an electronic format than in a face-to-face condition. To

continue support of electronic mentoring research from this article showed that post-mentoring

self-efficacy could be predicted by dialogue interactivity, but only for participants in the e-

mentoring condition not in the face-to-face condition.

Gender and Race Suggestions for E-mentoring

Gender differences in e-mentoring were studied by Savicki, Kelley, and Oesterreich

(1999). In this study, the researchers sought to find out whether males or females had a superior

group development communication style, whether females could accurately determine the gender

of an author based off electronic communications only, would male participants be more likely

to determine their judgments of an author's gender as correct regardless of actual accuracy, will

more online communication help a participant determine an author's gender, and whether there

are accurate factors which can be used to judge an author's gender. 39 college undergraduates

participated in this study, of which 10 were men and 29 were women. Participant age ranged

from 18 to 52 with an average of being age 20.8. 20 messages, taken from a previous study's

dataset, were rated by participants in judgment of gender; the participants also rated the level of

certainty they felt in the accuracy of their judgment. Messages in a higher group development

communication style were categorized by having self-disclosure, opinion statements, and an

absence of argumentativeness or course language while messages in a lower group development

communication style were categorized based off not having self-disclosure or opinion

statements, yet having some argumentativeness or course language. Participants were also asked

to rank the 10 possible factors that they may have used in determining an author's gender.

Savicki, Kelley, and Oesterreich (1999) found that subjects have a hard time judging

whether or not an e-mail message was sent by a woman or a man. They go on to discuss that

even though past research found that men and women in same sex groups generally use different

patterns of language the text-based medium and language usage in computer-mediated

communications can be misleading. This supports the idea that a protégé or mentor would most

likely not be able to tell the gender of their e-mentoring partner and if that cannot be determined

it may be reasonable to think that ethnicity would not be discernible via e-mentoring either.

A study done by Blake-Beard, et al. (2011), searched for the answers to what individuals

from different genders and ethnicities want in terms of race or gender of their mentors, whether

or not individuals of different ethnicities and genders are equally likely to have a mentor of their

own race or gender, whether the mentoring experience of a protégé is affected by matching

gender or race, and if academic outcomes are affected by matching a protégé with their race or

gender in mentoring. 7,361 potential participants were chosen for this study from a pool of

undergraduate, graduate students, and postdoctoral scholars actively participating in MentorNet's

online community at the time of data collection (February 2007). These potential participants

were then asked to participate in the study as well as fill out a survey, which only 2,441

participants completed. These participants were then narrowed down to just individuals who

reported being U.S. citizens and reported having had at least one mentor of any kind. The

resulting participant pool consisted of 866 women; 614 identifying as being white, 136

identifying as Asian or Asian-American, 44 identifying as black, 2 identifying as being Native

American, 27 identifying as being Hispanic, 2 identifying as Hawaiian or Pacific Islander, and

41 as bi- or multiracial. Of the 141 men in this pool, 83 identified as white, 26 identified as Asian

or Asian-American, 11 identified as Black, 12 identified as Hispanic, 1 identified as Hawaiian or

Pacific Islander, and 8 identified as bi- or multiracial. Also identified were 3 individuals who did

not specify their gender or ethnicity. The questionnaire that was returned by these participants

consisted of 38 questions on demographic information, mentoring support, desired mentoring

experiences, actual mentoring experiences, and academic outcomes.

Blake-Beard, et al. (2011), found that most participants in their study, especially females,

felt having a mentor of their own race and gender was somewhat important to success. Reports

from this study found that matching protégés with a mentor of their own race or gender meant

receiving more help though there were no differences in terms of academic outcomes. The

authors of this study suggest that these results may indicate that though race and gender may be a

sign of a shared background, it should not be assumed that mentors will be more empathetic.

Since there was no difference found in academic outcomes it was suggested that mentoring

support can come from a variety of sources, across lines of race and gender.

Suggestions for Success in E-mentoring

Qualitative findings in Cascio and Gasker's study (2001), on e-mentoring in social work

education demonstrates how professional identity is facilitated through e-mentoring where

mentors were employing their social work skills successfully and mentors were enthusiastic. The

study also mentions that the elements of a successful e-mentoring program include: motivation

of the students, the appropriateness of the mentoring responses, and the responsibility embraced

by some of the mentors to take charge of the mentoring process. It is then recommended that

mentors and mentees be motivated by course credit or some other tangible reward to insure

success in future projects. Also mentors should be educated regarding the responsibilities they

bear as mentors.

Earlier, Murphy (2011) argued, in which university students were paired with alumni in

e-mentoring, that perceived rather than actual similarity is clearly important for both e-mentoring

parties. This leads to the suggestion that if the instructor or program administrator has some

knowledge of the protégés' and mentors' values and attitudes, than they may be able to facilitate

the matching process to create more effective mentor-protégé pairs. Later in the same study, it

was found that similarity was significantly associated with vocational support and psychosocial

support provided by mentors. It was also found that psychosocial support was significantly

associated with protégés' satisfaction with mentors and intention to continue the relationship.

Higher levels of career and psychosocial support were associated with greater intention to

continue the relationship for mentors and protégés, with continuation being a key indication of a

successful social exchange relationship between students and professionals. Overall a connection

was made in Murphy's study between perceived similarity and an indication of a successful

social exchange relationship. This can be facilitated with some knowledge of the protégés' and

mentors' values and attitudes.

Discussion

The literature in this field discussed here creates a strong sense of strengths versus weaknesses in the e-mentoring model. Reasons to use e-mentoring because of the benefits it could have on a variety of students, along with some community members in the positions of both protégé and mentor, are clear. Weaknesses of the e-mentoring model were assessed in terms of barriers that could be overcome with thoughtful planning. Future research is still needed to determine variables that lead to best practice in e-mentoring programs. In the articles described here, there are a multitude of suggestions for successfully creating an e-mentoring model, especially as to whether or not to include face-to-face mentoring and matching protégés with their mentors based on ethnicity or gender.

The discussion outlined here demonstrates the variety of ways e-mentoring can be potentially used to positively impact students and others. The protégés and mentors were rarely similar in any of these articles and the setting of e-mentoring could be viewed as very flexible in it's' implementation. Each article seemed to test multiple questions about e-mentoring leading to a wealth of information emerging from each article.

Weaknesses of literature for e-mentoring could be found in the reliability of the results in many of these studies. The methods used to obtain results were usually left to interviews and questionnaires, some of which could be seen as being susceptible to bias. In one study, Loureiro-Koechlin and Allan, (2010), an ethnography approach was used where researchers participated in the study possibly leading to experimenter bias. Dropout rates in several of the studies were also noticeable. The largest weakness in the research set around e-mentoring would be in the overall lack of research on the subject which many of the reviewed articles have mentioned.

The next steps in research for this field might include ways to increase mentor – protégé email response consistency. This might account for dropout rates in most studies. A closer look at when and how face-to-face mentoring should be included in e-mentoring would also be a great advance in research on this topic. The last improvement suggested to develop the research depth of e-mentoring would be a longitudinal study in which the lasting effects of e-mentoring could be observed, as none of the studies included had examined long-term outcomes. In sum, while this review of current research is promising, much more needs to be completed to develop sound, effective methods for e-mentoring programs.

Author's Note

I feel it is important to note that working through the Winona Workforce Center I participated in an e-mentoring program located at the Winona Area Learning Center during 2012-2013 school year. There I helped set up the E-Mentoring Program by contacting mentors, setting up group meetings, and monitoring e-mails between mentors and protégés. In the program I worked closely with Scott Lowery, and Winona Area Learning Center teacher, and we were able to get 16 students and 11 mentors to participate in the 2011-2012 school year. This program originated from the University of Minnesota's Institute on Community Integration and was adapted to the Winona Area Learning Center with help from Winona Workforce Center staff. The program is still used at the University of Minnesota to help developmentally disabled students connect to the work world. Additional e-mentoring programs that I've encountered are the Air Force's mentoring program and the Minnesota Virtual Academy.

Through the e-mentoring program at the Winona Area Learning Center, I have experienced firsthand some of the benefits and barriers to e-mentoring. The main benefit was the removal of the time constraints of traditional face-to-face mentoring. When I was getting the e-mentoring set up for the school year, I noticed that all the mentors had very busy schedules. Even trying to meet with them directly to discuss the program was a complex scheduling process. These high-quality mentors would never have been able to participate without the flexibility of e-mentoring.

The primary barrier which occurred during my time with the Winona Area Learning Center was the delay between response times. There were many instances where the protégé would fail to respond to a mentor's communication and the mentoring process would halt. A lot of times we would try to intervene either by asking the mentor to send a follow-up email or by

contacting the protégé directly. These strategies did not always work and mentoring relationship failed to resume.

Overall, my direct experience with e-mentoring has showed that the lessening of the time constraints allows for a larger pool of high quality mentors to match with protégés' diverse interests. Ultimately, the protégés' effort level determines the success of the e-mentoring process. If they were dedicated to the relationship, they were able to reap more benefits due to their continued communication.

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