Communication Mode and Satisfaction with Mentoring

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ABSTRACT

This paper presents the results of one of a series of experiments done on mentoring and communication mode. In this study, the focus was on protégé satisfaction with the developmental interaction, and four communication modes were investigated: face-to-face (FTF), video-teleconferencing (VTC), telephone, and electronic chat. Between-subjects ANOVA was used to test for differences among mean satisfaction scores among protégés in the four different conditions. No significant main effect was found for communication mode on satisfaction, F (3, 68) = .64, p = .59. Trainees in all communications conditions found the developmental interactions to be satisfying.

Keywords: Computer-mediated communications; Human-computer interaction, Mentoring

INTRODUCTION

The changing nature of the employment contract, rapid advances in technology, and increasingly diverse organizational membership has led to an increased emphasis on continuous learning in an organizational context (Carnerdale, 1995; Higgins & Kram, 2001). Mentoring may serve as one form of non-traditional training in such a continuous learning environment.

Mentoring is typically considered a face-to-face activity. For a number of reasons -- increased knowledge specialization, the globalization of the economy, and the increased use of teams -- the degree to which such interactions would necessarily occur without participants meeting face-to-face is likely to increase. From the extensive literature on non-face-to-face communication, it is reasonable to assume that such communication may impact these interactions; however, little empirical research has been conducted on non face-to-face mentoring.

This paper presents the results of one of a series of experiments done on mentoring and communication mode. In this study, the focus was on protégé satisfaction with the developmental interaction, and four communication modes were investigated: face-to-face (FTF), video-teleconferencing (VTC), telephone, and electronic chat.

In the following section, a brief review of the mentoring literature is presented. In subsequent sections, the methodology and findings are discussed. The paper concludes with some suggestions for future research.

Mentoring

Traditionally, mentoring has been viewed as a relationship "... in which a senior person working in the protégé's organization assists with the protégé's personal and professional development (p. 265, Higgins & Kram, 2001)." More recently, researchers have investigated alternative forms of mentoring such as formal/assigned mentors (Ragins & Cotton, 1999), and peer mentors (Salinitri, 2005; Smith-Jentsch, et al., 2000).

Given that considerable evidence exists regarding the usefulness of mentoring for both the organization and protégés, there is organizational interest in promoting and facilitating such mentoring relationships. The degree to which such interac-

tions would necessarily occur without participants meeting face-to-face is likely to increase as a result of telecommuting, virtual teams, and reduced manning. As Colky and Young (2006) pointed out, the benefits of virtual mentoring include lowered costs, increased access to mentors, and no limitations on space, time, and location. However, data is limited on the effectiveness of virtual mentoring. Thus, the focus of this study was on the effectiveness of mentoring in non-face-to-face settings.

METHODOLOGY

Participants

Protégés were freshman students recruited from Supplemental Instruction (SI) classes at a university in the Southeastern United States. SI classes are supplemental classes that the university instituted for courses that have historically high failure and dropout rates. There were 72 participants in the protégé sample. Of the 72 protégés, approximately 43% were male (n= 31) and 57% were female (n = 41). Their ages ranged from 18 to 20, with a mean of 18.32.

Mentors were juniors or seniors with at least a 3.0 cumulative grade point average. There were 18 participants in the mentor sample. Four of the mentors were juniors (22%) and 14 were seniors (78%). Of the 18 mentors, approximately 33% were male (n =6) and 67% were female (n = 12). Their ages ranged from 19 to 28, with a mean of 21.56.

Procedure

Protégés were randomly assigned to both mentors and communication condition. Each mentor had four protégés, one in each of the four communication conditions. Each dyad communicated for fifteen minutes, once a week for three weeks, using the same communication medium for all their sessions. The order in which mentors were exposed to the various conditions was counterbalanced to control for carry-over effects.

The laboratory set up allowed mentors and protégés to arrive for their sessions without meeting. In addition, mentors and protégés were asked not to contact each other outside out the laboratory, and to exchange first names only.

Measures

Because there was reason to believe that typing ability might restrict information exchange in the chat condition, and thus might be a covariate, all participants were given a typing test prior to starting the experiment; the *Keyboarding Skills Test*, a personal computer-based test purchased from RegSoft.

As with typing ability, it seemed likely that computer attitudes might have an effect on how favorably participants viewed the chat condition. Therefore, all participants were asked to answer a questionnaire regarding their computer experience prior to the start of the experiment (Levine & Donitsa-Schmidt, 1997). The reliability of the scale was α = .91 for trainees and α = .93 for coaches.

The final measure was a measure of satisfaction with the mentoring relationship, adapted from a 5-item scale developed by Finkelstein, Allen, and Rhoton (2003). The reliability for the five-item scale was .90.

RESULTS

There were no significant differences in computer attitudes or typing ability between the mentors and the protégés. For trainees, the mean net words-per-minute score was 33.5, with a standard deviation of 13.35. For coaches, the mean score was 34.17, with a standard deviation of 12.25. On the six-point computer attitudes scale, the mean score was 4.37 for trainees, with a standard deviation of .92. For coaches, the mean score was 4.56, with a standard deviation of .85. In addition, typing skill and computer attitudes did not significantly covary with satisfaction with the relationship.

Between-subjects ANOVA was used to test for differences among mean satisfaction scores among protégés in the four different conditions. No significant main effect was found for communication mode on satisfaction, F $(3,68) = .64$, $p =.59$. Trainees in all communications conditions found the developmental interactions to be satisfying.

Further analyses were performed to investigate if the lack of main effect was due to: 1) the sample's high levels of computer literacy, or 2) lack of power. The sample was split into two groups; those with mean scores equal to or less than three on the computer literacy test, and those with scores above three. Because the sample of those who scored less than three was very small, Levene's test for equality of variances was performed to check that the variances were not significantly different from each other. There were no significant differences between the two groups for satisfaction, suggesting that the lack of difference across conditions was not due to computer literacy.

The final possibility was that there was a lack of power. For satisfaction as the dependent variable, the amount of variability attributable to condition was .03 (partial eta-squared value), and the observed power, i.e. the power of the test when the alternative hypothesis is set to the observed value was .18 at $\alpha = .05$.

CONCLUSION

Although one can certainly conclude that this study did not have enough power to detect the effect of communication mode on the dependent variables, given that communications condition explains 1 to 3 percent of the variance in outcomes, is this, in practical terms, an effect? The power analysis suggest that it might be more useful, in terms of implementing non-face-to-face developmental programs, to focus on reducing the variability in the coaches' behaviors through training, than to focus on the effect of communication mode.

The two primary limitations of this study – the experimental design and the relatively novel topic – are, ironically enough, also two of its primary strengths. Because this study was experimental in design, there was control over the amount of interaction, the frequency of interaction, and prior acquaintanceship. However, in gaining this control, a certain amount of realism was lost; the interactions were very short, the sample was highly computer literate college students, and the participants appeared not to be driven by a specific knowledge needs, resulting in interactions that were primarily psychosocial rather than informational in nature.

The novelty of the topic area, although addressing both a void in the literature and a practical need, also resulted in a study that was different from much of the previous research. Although the research question "Can developmental interactions happen in a non-face-to-face setting?" required an unstructured task; this unstructured task makes it difficult to mesh the current research with the existing body of knowledge on communication mode effects. What the dyads in this study did *not* have to do was: solve a problem imposed by the researcher, reach consensus, or negotiate an outcome. Yet, these are precisely the types of tasks commonly found in research on the effects of communication mode (Graetz, Boyle, Kimble, Thompson, & Garloch, 1998; McLeod, 1992; O'Malley, Langton, Anderson, and Doherty-Sneddon, 1996).

For the dyads in the present study, there was no specific goal or objective other than to build a relationship that was satisfying and helpful; an objective that allowed the interactants a great deal of flexibility in terms of both evaluating the outcome and designing the process. Without the pressures imposed by a more structured task in the form of time limits, specific outcome requirements, or evaluative criteria, the limitation of the media may not have been as salient for these dyads.

A promising area for further research is suggested by this study. An interesting approach would be to replicate one of the earlier studies that used a structured task to determine if the passage of time, and the dramatic changes in communication technology, has changed the population's attitudes toward computer-mediated communications; and that the lack of an effect in this study might in fact be generalizable to a broader range of tasks.

REFERENCES

Carnerdale, A. P. (1995). Enhancing skills in the new economy. In A. Howard (Ed.), *The Changing Nature of Work* (pp. 238-251). San Francisco: Jossey-Bass.

Finkelstein, L., Allen, T., & Rhoton, L. (2003) An examination of the role of age in mentoring relationships. Group & Organization Management, *28*, 249-281

Graetz, K. A., Boyle, E. S., Kimble, C. E., Thompson, P., & Garloch, J. L. (1998). Information sharing in face-to-face, teleconferencing, and electronic chat groups. *Small Group Research, 29*, 714-743.

Higgins, M. C., & Kram, K. E. (2001). Reconceptualizing mentoring at work: A Developmental network perspective. *Academy of Management Review, 26*, 264-288.

Levine, T., & Donitsa-Schmidt, S. (1997). Commitment to learning: Effects of computer experience, confidence and attitudes. *Journal of Educational Computing Research, 16*(1), 83-105.

McLeod, P. L. (1992). An assessment of the experimental literature on electronic support of group work: Results of a meta-analysis. *Human-Computer Interaction, 7*, 257-280.

O'Malley, C., Langton, S., Anderson, A., & Doherty-Sneddon, G. (1996). Comparison of face-to-face and video-mediated interaction. *Interacting with Computers, 8*, 177-192.

Ragins, B. R., & Cotton, J. L. (1999). Mentor functions and outcomes: A comparison of men and women in formal and informal mentoring relationships. *Journal of Applied Psychology, 84*, 529-550.

Salinitri, G. (2005). The effects of formal mentoring on the retention rates for first-year, low achieving students. *Canadian Journal of Education*, 28(4), 853-873.

Smith-Jentsch, K. A., Milanovich, D. M., Reynolds, A. M., Merket, D. M., & Eddy, E. R. (2000). An investigation of the unique effects of peer and traditional mentoring. Symposium presented at the annual meeting of the Society of Industrial and Organizational Psychology, New Orleans.

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