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The Role of Mentoring in the Development of IS Professionals

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ABSTRACT

Information Systems professionals require varying degrees of technical and behavioral skills as they progress up their career paths. Research indicates that strong technical skills and nominal behavioral skills are expected in the early phases of the IS professional's career. In the later stages, the need for some aspects of technical knowledge is less, while the demand for behavioral skills increases. The need for technical skills in the early phases results in organizations recruiting technically oriented employees. While the weaknesses in such skills may be tolerable in the early phases of a career, they are less acceptable in the later phases. Behavioral skills are generally acquired through social processes, such as mentoring. Curiously, scant attention has been paid to mentoring in the IS literature. Our overall program of research is aimed at addressing this gap. As a first-step in this research-in-progress, we offer propositions related to mentoring of IS professionals.

Keywords

Mentoring, Social Learning, IS Professional Development, IS/IT Skill Set

INTRODUCTION

The effective development and utilization of IS personnel is an area of strong interest to IS researchers. Research on topics related to IS personnel has ranged from issues of recruitment and retention (Agarwal et al., 2001, Lee et al., 1995) to needed skills (Agarwal et al., 1996, Todd et al., 1995, Green, 1989, Cheney and Lyons, 1980) to education and training (Walz et al., 1993, Klein et al., 2002, Lee et al., 1995, Todd et al., 1995). Interestingly, there has been little to no discussion of social learning (with some exceptions, e.g., King and Sethi, 1998) or mentoring in the development of IS professionals. In contrast, management literature contains a significant body of research concerning mentoring of professionals, with evidence of many benefits to both employees and organizations (Shea, 1994, Parsloe and Wray, 2000, Kram and Isabella, 1985, Johnson, 1997). Our program of research is to examine the role of mentoring and its potential to affect the successful development of IS professionals.

Studies of skill requirements of IS professionals reflect a need for strong technical knowledge and skills in the early phases of the career, and strong behavioral knowledge and skills in later phases (Green, 1989, Lee et al., 1995, Todd et al., 1995). The cluster of behavioral knowledge and skills include interpersonal, communication and managerial skills, and business knowledge (Denning and Dunham, 2001, Green, 1989). Social learning theory suggests that interpersonal processes provide mechanisms for transferring social and behavioral skills between one or more individuals (Bandura, 1977). Some social learning mechanisms, such as coaching, counseling, and role modeling, fall under the umbrella of mentoring also (Whitely et al., 1992), leading to the argument that mentoring may have an important role to play in the development of IS professionals. IS literature lacks empirical evidence to support such arguments. In this article, we present propositions, which form the starting point for the research currently in progress to gather empirical evidence of the various influences of mentoring in the development of IS professionals.

CONCEPTUAL DEVELOPMENT

Skills and Knowledge Requirements for IS Professionals

The career progression of an information system professional generally goes from programmer to systems analyst to manager. Evidence for this is seen in several articles, which examine the skill requirements of IS professionals (Todd et al., 1995, Lee et al., 1995, Green, 1989, Cheney and Lyons, 1980, Vitalari, 1985, Benbasat et al., 1980). Skill requirements of IS professionals can be parsimoniously dichotomized into technical and behavioral skills. The technical skill set subsumes the skill clusters related to models, systems and computers in the ACM classification (Ashenhurst, 1972), and the behavioral skill set subsume the skill clusters related to people, organization, and society.

As IS professionals progress from programmer to systems analyst to managers, there is a distinctive trend in the skill requirements. Programmers are generally required to be technically proficient, i.e., have programming skills coupled with knowledge of hardware, software, and systems, along with some communication skills (Roark, 1976), and some business knowledge (Watson et al., 1990). System analysts are expected to possess greater interpersonal and communication skills, in addition to the technical skills. The relative ratio of technical versus behavioral skills expected of systems analysts has varied over the years, but what appears to be constant is that the behavioral skills required of systems analysts are generally greater than those required of programmers. With respect to IS managers, the skill set requirements appear to lean heavily towards the technical generalist with managerial skills. Expectations of managers have remained constant over the years.

In sum, as IS professionals progress from programmer to systems analyst to manager, there is a growing need for behavioral skills, i.e., skills related to interpersonal, communication, business skills and managerial skills. In contrast, there is no such corresponding increase in the technical area.

SOCIAL LEARNING THEORY

Social learning theory is based on the premise that people learn by observing others and imitating their behavior while immersed in the environment (Bandura, 1977). The observations enable individuals to form rules of behavior that are coded into verbal images or symbols that can be remembered and translated into guidelines for future behavior (Bandura, 1986). Such observational learning facilitates the acquisition of behavioral patterns and strengthening of expectations regarding the ability to perform tasks successfully (Noe, 1988). In sum, social learning theory argues that the observation and imitation of others is an effective means of developing behavioral skills.

The relationship of mentoring to social learning requires an understanding of mentoring. The frequently cited definition of mentoring is that it is a set of roles and role activities including coaching, support, and sponsorship (Kram and Isabella, 1985). "As coaches or teachers, mentors seek to develop many interpersonal and intellectual skills in their protégés. As counselors, mentors provide socio-emotional support and seek to bolster the self-confidence and self-esteem of protégés. Finally, as sponsors, mentors actively intervene, contriving to get their protégés exposure and visibility through assignments that involve working with other managers and endorsing their protégés for promotions and special projects" (Whitely et al., 1991). In effect, mentoring is a unique one-to-one relationship, in which a mentor plays a special role in the development and progress of a protégé (mentee) in an organization. The social learning associated with mentoring is a useful mechanism to transfer information about people, politics, organizational values and history.

The relationship between social learning and mentoring lies in the fact that the information transferred in social learning can also be transferred by mentoring (Whitely et al., 1991). There are several distinctions between the processes. In social learning, exclusive of mentoring, there may be no special relationship between the learner and the person observed. The learner is usually not observing a single individual. Passive observation is more the rule than active seeking or volunteering of information. There are few formal or semi-formal occasions when the learner meets with other individuals with the primary purpose of knowledge transfer. In contrast, in mentoring, there is a special relationship between the mentor and the protégé, with the protégé focusing on learning from the mentor rather than from a diffuse social group. The knowledge transfer may be initiated equally by the mentor or by the protégé. The knowledge transfer process is rooted more in active seeking or volunteering of information than passive observation. The primary difference between learning through mentoring and social learning, is the special interest that the mentor has in the success of the protégé (Whitely et al., 1992).

In contrast to the social learning of behavioral skills, formal classroom education is generally used, and is effective for the transfer of technical skills. Technical skills fall within relatively well-defined domains, and can therefore be structured appropriately for classroom dissemination. Dissemination in the classroom entails a one-to-many relationship as opposed to the close one-to-one relationship found in mentoring.

MENTORING AND THE IS PROFESSIONAL

Our immediate goal is to examine and model the role of mentoring as it exists in the IS world today, i.e., the goal in this project is more descriptive than prescriptive. Our propositions are based on the arguments that (a) social learning processes, such as mentoring, are effective for the acquisition of behavioral skills, and (b) that there is a greater need for behavioral skills as IS professionals progress up the career path. There are diverse paths of progression for IS professionals. For purposes of the current study, we will focus on the path of progression from programmer to systems analyst to manager. Propositions 2 through 4 are offered for this path of progression only.

First, based on the arguments that technical skills are more structured and amenable to training and instruction, and that behavioral and social skills are more amenable to learning through processes, such as mentoring,

Proposition 1: IS professionals are likely to acquire a larger portion of behavioral skills via mentoring than technical skills.

Based on the argument that behavioral skills become more important as IS professionals progress up the path, and that behavioral skills are effectively acquired in a mentoring relationship,

Proposition 2: For IS professionals with equivalent technical skill levels, career progression will be positively correlated to mentoring and social learning.

In organizations, behavioral skills are important for career progression of IS professionals and such skills are effectively acquired through mentoring, observational learning or other social learning methods,

Proposition 3: IS professionals who are mentored will achieve greater career progress than IS professionals who have not been mentored.

Proposition 4: In the absence of mentoring, IS professionals adept at observing and learning behavioral skills on their own will progress more than IS professionals who are not adept at learning behavioral skills on their own.

PROGRAM OF RESEARCH

The propositions in this research-in-progress article are the start of a project to “empirically substantiate” the importance of mentoring in the development of IS professionals. Learning in the context of mentoring is a subset of learning in the social learning context. Our propositions are based in social learning theory, which posits that observation and imitation of others are effective mechanisms for acquiring relevant behavioral skills. The empirical substantiation will be the first project in the larger program of research in mentoring. Once the current project successfully establishes that mentoring indeed correlates positively to the development of IS professionals, then we will move to the examination of effective intervention schemes for increasing the use of mentoring in organizations.

Currently, we are in the process of conducting structured interviews of IS professionals. We have completed 5 of the 30 planned interviews. Preliminary evidence is that the professionals have been mentored either formally or informally and believe mentoring to be useful. This quote from one interview exemplifies the role of mentoring:

“When you see what they do, you learn how they have done things and what they bring from industry. I think certainly they are quite capable people whom you want take certain characteristics from and improve your attributes. That makes sense.”

Following the interviews, we plan to conduct a large scale survey to confirm the qualitative results. The examination of effective intervention strategies to improve mentoring in organizations will be a separate and subsequent project. With this larger program of research, we hope to make a distinctive contribution to the existing body of knowledge on the processes important to the development of IS professionals.

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