The Effect of Attitudes, Goal Setting and Self-Efficacy on End User Performance

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The proliferation of end user computing (EUC) has been widely reported (e.g., Burrows, 1994). Computer literacy requirements have skyrocketed for clerical and support staff (Bowman, Grupe, and Simkin, 1995) and for many middle and senior management positions (Olsten, 1993). EUC has the potential to influence productivity, competitiveness and profits. In recognition of this potential, organizations are devoting a substantial portion of their information technology budget to EUC activities. Given that training can affect the success or failure of EUC within an organization (Bostrom, Olman, and Sein, 1990; Rivard and Huff, 1988), preparing the workforce to use information technology productively has become a high priority in many organizations and is reflected by increased training budgets (Aggarwal, 1998; Finley, 1996). Since the primary purpose of introducing new technology is to improve productivity, organizations expect their employees to learn and apply EUC technology to increase their job performance and contribute to organizational effectiveness.

The preponderance of research on end user performance has focused on attitudes toward computers and end user performance. The inconsistent results, at least in part, could be attributed to the lack of correspondence between the general nature of the attitude measure and the specific nature of the criterion, end user performance (Ahrens, 1990). Based on Ajzen and Fishbein’s (1980) behavioral intentions model, we argue that attitudes toward working with computers matches end user performance in terms of specificity and relevance, and therefore should be consistently related to end user performance. In this study, in addition to attitudes toward working with computers, the effects of goal setting and self-efficacy on end user performance were also tested. Results indicate that attitudes toward working with computers, goal setting and self-efficacy significantly influence end user performance. Strong support for attitudes, goal setting and self-efficacy indicate that end user performance can be substantially enhanced by shaping end users’ attitudes toward working with computers, teaching end users to set specific and challenging goals, and enhancing end users’ beliefs to effectively learn and use computing technology.

Research on the influence of attitudes toward computers and end user performance has reported inconsistent results. The inconsistent results, at least in part, could be attributed to the lack of correspondence between the general nature of the attitude measure and the specific nature of the criterion, end user performance (Ahrens, 1990). Based on Ajzen and Fishbein’s (1980) behavioral intentions model, we argue that attitudes toward working with computers matches end user performance in terms of specificity and relevance, and therefore should be consistently related to end user performance. In this study, in addition to attitudes toward working with computers, the effects of goal setting and self-efficacy on end user performance were also tested. Results indicate that attitudes toward working with computers, goal setting and self-efficacy significantly influence end user performance. Strong support for attitudes, goal setting and self-efficacy indicate that end user performance can be substantially enhanced by shaping end users’ attitudes toward working with computers, teaching end users to set specific and challenging goals, and enhancing end users’ beliefs to effectively learn and use computing technology.

The primary purpose of this study is to investigate the effects of attitudes, goals setting and self-efficacy on end user performance. The conceptual foundation of this study is based on the dispositional paradigm. The dispositional paradigm is founded on the premise that individual differences are relatively stable both across time and situations and can be used to explain and predict behaviors and outcomes (see Allport, 1961; Kane, Bernardin, Villanova, and Peyrefitte, 1995; Staw and Ross, 1985).

This paper is organized into four sections inclusive of this introductory section. In the second section, we will review the studies that examined the relationship between attitudes and end user performance and offer plausible explanations for the inconsistent findings. In the third section, we will develop hypotheses for the study. Finally, we will present results of this study, offer suggestions to enhance end user performance, and discuss avenues to extend research on end user performance.
ATTITUDES AND END USER PERFORMANCE

Prior research on the relationship between attitudes and end user performance has reported inconsistent results. About one half of the studies that examined the relationship between attitudes and end user performance have reported a relationship. While some of these studies reported a positive relationship, others have reported a negative relationship. Alternatively, roughly one half of the studies failed to find a relationship between attitudes and end user performance.

**Studies Reporting a Positive Relationship:** In one of the early studies on end user performance, Nickell and Pinto (1986) developed the Computer Attitude Scale (CAS) and investigated reliability and validity of the scale in five different samples. Nickell and Pinto found that scores on the CAS were positively correlated with final course grades of students enrolled in an introductory computer class. Scores on the CAS were also positively related to evaluations of job performance of computer operators provided by supervisors of those operators. In a study that involved training high school teachers to be computer science teachers, Roszkowski, Devlin, Snellbecker, Aiken, and Jacobsohn (1988) found that high school teachers' attitudes measured by the Computer Aptitude Literacy and Interest Profile (CALIP) and the Computer Attitude Scale (CAS) were positively related to performance. In another study involving a large sample of undergraduate business students enrolled in an introductory Management Information Systems course, Jawahar and Elango (1998) reported that computer-related attitudes were positively related to performance in the course.

**Studies Reporting a Negative Relationship:** Studies have also reported a negative relationship between computer attitudes and end user performance. Rosen, Sears, and Weil (1987) conducted a study with undergraduate students enrolled in computer-based courses and found that computer anxious students received lower course grades and were twice as likely as non-anxious students to drop out of the course. Hayek and Stephens (1989) found that pre-course and post-course computer anxiety scores were inversely related to performance in computer science courses. Studies by both Marcoulides (1988) and Mawhinney and Saraswat (1991) have also reported a negative relationship between attitudes, measured as anxiety, and performance, measured by course grade.

**Studies Reporting No Relationship:** Researchers have also reported differences in performance between those with favorable attitudes toward computers and those with unfavorable attitudes. Kennedy (1975) using a sample of inexperienced computer users and O’Quin, Kinsey, and Beery (1987) using a sample of college faculty and administrative personnel found that attitudes toward computers were not related to EUC performance. Kernan and Howard (1990) found that computer anxiety was not predictive of course grade. Szajna (1994) also reported similar results and noted that the effect of computer anxiety on performance was inconsistent. In another study involving undergraduate business students enrolled in a required computer skills course, Szajna and Mackay (1995) failed to find a relationship between computer anxiety and performance in the course.

In summary, while some studies have failed to find a relationship between attitudes and end user performance, others have reported the relationship to be positive or negative. These studies indicate that the relationship between computer attitudes and performance is not necessarily to be assumed.

At least three reasons could be offered for the inconsistent results reported by prior research. First, our review of prior research indicates that many previous studies have used the constructs of computer anxiety and negative attitudes toward computers interchangeably. These two constructs are distinct and consequently, are not interchangeable. Indeed, factor-analytic investigations indicate that computer anxiety and negative attitudes toward computers should be treated as separate constructs (Kernan and Howard, 1990). Second, items such as “Computers are a blessing to mankind,” “Computers make it possible to speed up scientific progress and achievements,” and “Computers are becoming necessary to the efficient operation of large businesses” reflect the spirit of the “attitudes toward computers” measure (Lee, 1970). Given the spirit of the items used to measure the construct, the rationale for expecting “attitudes toward computers” to be related to end user performance is not clear. Just because a person has favorable attitudes toward computers does not automatically mean that he or she would be willing to work with computers. Willingness to work with computers could result in a higher rate of system utilization leading to a higher level of end user performance. Willingness to work with computers is captured by Rafaeli’s (1986) Attitudes Toward Working with Computers Scale. We believe that attitudes toward working with computers will evidence a more consistent relationship with end user performance than attitudes toward computers. Finally, we believe that besides attitudes, a myriad of individual difference factors has the potential to influence end user performance. Given the initial stage of research on end user performance, focusing on specific and theoretically relevant individual difference factors with potential to influence end user performance as opposed to general dispositional factors (e.g., locus of control, self-esteem, conscientiousness, etc.) may be more fruitful and certainly parsimonious.

Evidence for our assertion that computer anxiety and negative attitudes toward computers are not synonymous has come in the form of factor-analytic investigations that have shown that the two constructs are distinct (Kernan and Howard, 1990). In this study, we will test our second and third assertions by examining the effects of attitudes toward working with computers and those of two well-established individual difference constructs, goal setting and self-efficacy on end user performance.
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