

Factors that Affect Information Technology Adoption by Teachers

by

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FACTORS THAT AFFECT INFORMATION TECHNOLOGY

ADOPTION BY TEACHERS

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This study examined factors that influence teachers' adoption and use of information technology in the classroom. This study developed and tested models of relationships among a variety of variables and a teacher's use of information technology. An extended version of the technology acceptance model was employed to determine factors such as perceived usefulness, perceived ease of use, subjective norm, computer self-efficacy, professional development, teacher beliefs, and facilitating conditions that influence a teacher's decision to use information technology. Online and mail surveys were administered

to teachers to determine what factors contributed to the adoption of information technology in the classroom. The study tested factors/variables that may provide critical insights into successful technology use by educators.

The primary research question addressed in this study was “What are the factors that contribute to differences in information technology adoption in education?” Based on the primary question, two central research questions were addressed.

1. What are the major variables that influence teachers’ intention to use information technology/technology in education?
2. What are the relationships among these factors/variables that influence teachers’ intention to adopt information technology/technology?

According to theories and a review of the literature, there were mixed results with indirect significant effects or direct significant effects of each variable such as perceived ease of use on the intention to use or subjective norm on the intention to use (Davis, 1986; Davis, 1989; Mathieson, 1991; Taylor & Todd, 1995; Venkatesh & Davis, 2000).

The current study proposed 10 hypotheses using three models (Model I and II in Study A, Model III in Study B). In the current study (A and B), information technology was defined as computer based multimedia. To analyze the data, structural equation modeling (SEM) was conducted to test three proposed models. SEM is a comprehensive statistical approach that can test 10 hypotheses about relationships among variables.

As a result, two models (model II in Study A and model III in Study B) were identified as more appropriate models to explain teachers’ intention to use information technology.

In model I, teachers’ intention to use information technology was affected by perceived usefulness and subjective norm directly. The perceived ease of use did not have a significant effect on teachers’

intention to use information technology. However, in Model II, perceived ease of use had a significant effect on perceived usefulness and it also had a significant effect on teachers' intention to use information technology as mediated by perceived usefulness. Thus, model II was a more suitable model to measure teachers' intention to use information technology.

In Model III, professional development mediated the relationship between teacher beliefs and the intention to use information technology. Teacher beliefs had a significant indirect effect on the intention to use information technology. Computer self-efficacy, facilitating conditions, and professional development also had a significant direct effect on the intention to use information technology. This study can contribute to a better understanding of determining constructs of teachers' information technology adoption. From an educational standpoint, the presentation of the study can help schools, colleges, and departments of education (SCDEs) by providing information as regards how teachers adopt information technology in their work. This study can provide practical benefits to information technology practitioners and SCDEs as regards issues in the successful design and implementation of information technology in education.