

Attitudes towards E - Learning in Tamil among First year Biomedical Engineering Students in Chennai

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Abstract:

Student attitudes and beliefs towards e-learning, as well as their satisfaction with technology and past e-learning experiences in Tamil are regarded as success determinants of future e-learning initiatives in Tamil. While e-learning and its potential benefits for developing areas have been discussed in the literature, research on user perspectives of e-learning in Tamil in those areas is limited. This article presents findings on the experiences and perceptions of technology-supported learning gathered from Biomedical engineering students in Chennai. An analysis of relationships between student attitudes towards e-learning and their demographic characteristics, access to technology, use of technology for learning, skill in technology, and satisfaction with technology is also included. The reported findings might be of interest to academics, administrators, and decision-makers involved in planning, developing and implementation of future e-learning strategies in Tamil in Chennai.

Keywords: Developing areas, e-learning, Biomedical Engineering students, Information and Communication Technology (ICT), Technology-supported learning, Tamil, Chennai

Introduction:

Many scholars agree that ICTs play an increasingly important role in facilitating the educational processes and systems of today. E-learning has started to emerge in Chennai where it has the potential to help meet an increasing demand for education and address the growing decline of trained teachers. The application of e-learning in Chennai has gradually advanced in recent years with an improved availability of Internet connections, local area networks, and IT support. However, other challenges still prevail. In these areas, the active, participative student who is required for interactive learning is rare, and the traditional methods are widely used in teaching and learning. In addition, these areas often lack the ability to implement advanced educational practices on their own. Student characteristics are regarded as a critical success factor in e-learning in these areas. These characteristics include computer self-efficacy, Internet self-efficacy, computer experience, Internet experience, computer anxiety, and attitudes toward e-learning. Student attitudes are influenced by the quality and perceived ease of use of e-learning courses, functionality of e-learning platforms, and the level of student computer skills. Their computer experience, including perceived self-efficacy, enjoyment, and usefulness of using e-learning also plays a role. In turn, positive student attitudes and behaviours towards e-learning are critical to their e-learning readiness and acceptance. To inform the prospects of future e-learning initiatives in Chennai in Biomedical Engineering in Tamil, a study involving Chennai under-graduate Biomedical engineering students was conducted in July 2014; the study examined the students' experiences and perceptions of e-learning to gauge their acceptance of, and preparedness for, e-learning. Statistical analysis was conducted to assess student attitudes towards e-learning, and to reveal the relationships between their attitudes and their demographic characteristics, access to technology, use of technology for learning, skill in technology, and satisfaction with

technology. This paper presents an overview of Biomedical Engineering student attitudes towards ICT and e-learning in Tamil, it outlines the factors influencing those attitudes, and it discusses the findings of the study.

Materials and Methods:

Study Questions

The study reported in this article investigated e-learning experiences and perceptions of engineering students in Chennai. The results described here focus on the relationships between student attitudes towards e-learning and their demographic characteristics and experiences with ICTs. The following research questions guided the research presented in this article:

1. What are the overall attitudes of Biomedical Engineering student in Chennai toward technology?
2. Are there significant differences in attitudes towards technology between female and male Biomedical Engineering student in Chennai?
3. Are there significant differences in attitudes towards technology between Biomedical Engineering students studying in Chennai from urban and regional backgrounds?
4. What are the relationships between Biomedical Engineering student in Chennai attitudes toward technology and their access to, the use of, skill in, and satisfaction with technology?

Study Design

Data for the study was collected through a carefully designed survey instrument and analyzed. Descriptive statistics were used to summarize and describe the data collected from the respondents in the four participating groups. In addition, correlations were used to examine the relationships between the variables that were measured on the interval scale. Subsequently, statistical models were developed to relate the dependent variable to a number of student demographics and factors that may influence student attitudes towards ICT and e-learning. The additional variables, such as age and year of study were included in the model to control for possible confounding influence of these variables.

Survey Methodology

Closed, quantitative questions (statements) were developed based on a number of studies conducted to measure student attitudes towards technology. Participants were asked to rate statements using a Likert rating scale from “1” ‘strongly disagree’ to “5” ‘strongly agree’ to indicate their attitude towards technology in learning. The survey consisted of items (technologies) where students were asked to indicate their level of access outside the university. Students were also asked to indicate how they used various technologies and their levels of skill with these technologies. They were also asked to apply a rating scale (from “1” ‘not skilled at all’; to “5” ‘very skilled’) to indicate their levels of skill in using these technologies. Students were asked to indicate their level of satisfaction with the statements provided. They were asked to apply a rating scale (from “1” ‘very poor’ to “5” ‘very good’) to indicate the level to which they rated their satisfaction with technology.

Discussion and Conclusions:

This article presented findings from a larger study examining Chennai Biomedical engineering students' experiences and perceptions of technology-supported learning. A comparative analysis indicated that the participating students in the urban and regional areas were positively disposed towards e-learning and believed in its benefits. The positive attitudes and the willingness of students to engage in e-learning courses suggest that future e-learning initiatives have great potential in Chennai. Regarding the gender impact, this study found that both female and male students held relatively similar positive attitudes towards ICT and e-learning. Moreover, the effects of other demographic characteristics such as student location (urban/rural), age, and year of study were not statistically significant in terms of their attitudes towards e-learning.

The study demonstrated that there was a statistically significant correlation between student attitudes toward technology and their levels of access to various technologies; unsurprisingly, students who had better access to technology and the Internet generated stronger positive attitudes. This study showed that a student skill in technologies is a significant predictor of attitudes toward ICT and e-learning. The positive attitudes and the willingness of students to engage in e-learning courses suggest that there is a great potential for e-learning initiatives in Chennai. The findings of this study could serve as a predictor of the attitudes of future students towards e-learning. They can be considered as a source of information for academics, administrators, researchers and decision-makers involved in planning, design, implementation and promotion of e-learning in Chennai. However, for e-learning to be widely accepted in higher education institutions in Chennai, there is a need for the provision of appropriate training at different levels, the development of expertise in e-learning use, and research to gather data and inform future developments.

The potential limitation comes from the use of a paper-based survey questionnaire. As reported in the literature, such questionnaires may suffer from low response rates and misinterpretation issues. It is significant to note that while the findings presented in this article provide beneficial insights which extend the limited body of work related to e-learning in Chennai, they are based on a study of a limited number of participants. In addition, engineering students may be more technically-minded and accepting of e-learning than students of other disciplines; this might also limit the generalization of the study findings. It would be useful to see if the findings presented in this article could be expanded to participants from other disciplines and other universities in Chennai covering various streams of education to arrive at a more comprehensive outlook.

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