Indian Streams Research Journal
ISSN 2230-7850
Volume-3, Issue-6, July-2013

Meta-Analysis of Studies on the Significance of Educational Technology Experts/Technologists in the Use of Educational Technology

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Abstract: Through meta-analysis, this study was to analyze the relationship between the lack of Educational Technology Experts /Technologists at schools or universities and the use of Educational Technology in teaching-learning process by Teachers and University Professors in Iran. This paper would contribute to the body of knowledge regarding to the studies on "Obstacles in Using Educational Technology in the process of teaching and learning in the Educational System of Iran". After an extensive search for relevant published and unpublished studies, from 1993 to 2009, 51 studies were found and out of them 3 research studies with inferential statistics were chosen. The results indicated that the lack of Educational Technology Experts /Technologists at schools and universities had enough influence on not using Educational Technology by Teachers and Professors and it was an obstacle for using Educational Technology in the process of teaching-learning.

Keyword: Meta-analysis, Educational Technology, Teaching-Learning Process, Experts /Technologists, Barrier/Obstacle

INTRODUCTION

Educational Technology is defined as an array of tools that might prove helpful in advancing student learning. Technology can refer to material objects of use to humanity, such as machines or hardware, and also encompass broader themes - systems, methods of organization, and techniques. It includes some modern tools like overhead projectors, laptop computers, and calculators. Technology can change or alter how people access, gather, analyze, present, transmit, and simulate information (See, 1994). As Volman and Van Eck (2001) indicated that the use of Information and Communication Technology (ICT) creates a powerful learning environment and it transforms the learning - teaching process in which students deal with knowledge in an active, self directed and constructive way, with increased self-initiation, self-motivation and self-reliance among students who are even prepared for self-assessment. There is a shift from 'content learning' to 'learning how to learn'. Educational Technology improves education in different ways such as easy-to-access course materials, student motivation, wide participation , improved student writing, subjects made easier to learn, efficiently and effectively access digital information to assist with investigating issues, solving problems and decision making, produce creative solutions to support learning and develop new understandings , communicate, share and work collaboratively in local and global environments, understand the legal, ethical , health and safety implications of using ICT and their responsibilities as users and developers , develop new thinking and learning skills to support learning.

For progressing Educational Technology at schools and universities, one of the most important parameters is using special personnel called School Media and Educational Technology Specialists (SMETS) to know and use standards and Educational Technology tools. In this line, two sets of standards are written under the National Council for the Accreditation of Teacher Education (NCATE):
1) Standards for the Accreditation of Initial Programs that prepare School Media Specialists and Educational Technology Specialists, and
2) Standards for the Accreditation of Advanced Programs that prepare School Media Specialists and Educational Technology Specialists.

Curricula and candidate performances for the initial preparation of personnel in the fields of School Media and Educational Technology should be grounded in the knowledge base of the field. The domains of the field include design, development, utilization, management, and evaluation. Programs will vary in their concentration on each of the domains. Here there are some definitions for each domain.

Design: Seels and Richey (1994) believe "Design is the process of specifying conditions for learning" (p.30). Candidates demonstrate the knowledge, skills, and dispositions to design conditions for learning by applying principles of instructional systems design, message design, instructional strategies, and learner characteristics (Persichitte, 2005. p.14).

Development: "Development is the process of translating the design specifications into physical form" (Seels & Richey, 1994, p. 35). Candidates demonstrate the knowledge, skills, and dispositions to develop instructional materials and experiences using print, audiovisual, computer based, and integrated technologies (Persichitte, 2005, p.18).

Utilization: Seels and Richey (1994) define "Utilization is the act of using processes and resources for learning" (p. 46). Candidates demonstrate the knowledge, skills, and dispositions to use processes and resources for learning by applying principles and theories of media utilization, diffusion, implementation, and policymaking