

Designing and Validating Technological Competencies Scale for Primary Teachers

Zahra Tahmasebizadeh*
Gholamhosein Rahimidoost**
Ghodratallah Khalifeh***

Introduction

Despite research on teachers' technological skills and competencies, it is unclear what technological skills and competences teachers need to be effective for teaching-learning processes. Therefore, it is necessary to conduct a research in this field rather than through the results teachers the power of maneuvering to enhance the level of education and initiative in teaching. Therefore, this study attempts to identify and classify the technological competencies of elementary school teachers and to test and validate their related competencies.

Method

Purpose of the present study was to explore the technological competencies of elementary school teachers; therefore, research was a descriptive research. The statistical population of this study consisted of all elementary school teachers in Ahvaz in the academic year of 1397-98 with more than 5000 teachers in the year. In this study 6 to 7 samples were considered for each item, ie, according to 69 items in the researcher-made questionnaire, the minimum desirable sample size was 414 people. The sampling method was multistage cluster sampling. The face and content validity of the instrument was calculated in several steps and confirmed by experts. Reliability of the test was calculated based on Cronbach's alpha coefficient (0.98).

* M.A. Student in Educational Researchs, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

** Assistant Professor, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

Corresponding Author: rahimidoost@gmail.com

*** Instructor, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

Results

In order to develop teachers' technological competencies scale a Factor analysis was performed. The test revealed teachers' technological competencies, comprising 3 factors and 47 items, which accounted for approximately 60% of the variance of the construct. The test consisted of 20 items on the first factor (competences of technology integration in education), 17 items on the second factor (identification, selection, and application of technological tools) and 10 items on the third factor (tendency to use technology). The overall results showed that most of the questions in the test measure teachers' technological competencies and have good validity and reliability. The factors derived from factor analysis can adequately measure teachers' technological competencies.

Discussion

Considering the increasing importance of the role and application of various technologies in education and consequently teachers' competencies and competencies, the present study aimed to construct and validate the technological competencies of primary school teachers. Based on the results of factor analysis, three components were identified and named by the technology integration competencies in education; the competencies of identifying, selecting and applying technological tools, and the tendency to use technology. Exploratory factor analysis and confirmatory factor analysis were used to identify the path coefficients and confirm the extracted model. The obtained data through the comparative fitness, goodness of fitness and root mean variance estimation supported the three-component structure of the questionnaire. Finally, the overall results of this study showed that the validity and reliability indices of psychometric evaluation are appropriate and this test can be used for technological competencies of elementary school teachers.

Keywords: Teacher Competence, Technological Competence, Elementary Teachers, Information and Communications Technology (ICT)

Author Contributions: Author 1 prepared scale questions, conducted questionnaire, collected the data and wrote the manuscript. Author 2 (corresponding author) designed the project, suggested scale questions, analyzed the empirical results and drafted the article, and provided final approval of the version to publish.; Author 3 prepared some useful literature, and revised drafted article and improve it.

Acknowledgments: The authors thank the teachers who participated in the study.

Conflict of Interest: The authors declared no potential conflicts of interest with respect to the research, authorship and publication of this article.

Funding: The authors received no financial support for the research.
