

MEASURING ATTITUDES OF BIOLOGY TEACHERS TOWARDS INTERNET

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Abstract

The main aim of the research was to identify the attitude of pre-service and in-service Biology teachers towards the use of the Internet. In this research, the Internet Attitude Scale has been applied, a validated and standardized instrument. The scale was applied to 210 Biology teachers, of whom 155 are pre-service teachers and 55 are in-service teachers in secondary and high schools from Romanian education. The research results indicated the existence of positive attitudes of pre-service and in-service Biology teachers to the educational use of the Internet.

Keywords: *biology teachers, internet attitude scale, teacher education.*

Introduction

There are a number of specific studies based on the exploration of pre-service biology teachers' attitude towards information and communication technologies (ICT). A part of these studies mainly examine pre-service teachers' attitudes towards ICT. Efe (2011) investigated science student teachers' intentions to use educational technology in instruction. Yapici and Hevedanli (2012) determined the pre-service biology teachers' attitudes towards information and communication technologies using in biology teaching. The results highlighted that pre-service biology teachers have manifested positive attitudes toward information and communication technology using in biology teaching. Aslan and Zhu (2015) identified pre-service science teachers' perceptions of ICT integration in teacher education. Kapici et al. (2015) examined the impact of technology-based learning on the attitudes of science pre-service teachers. Koksall et al. (2016) analyzed Turkish pre-service science teachers' perceptions on technology in terms of learning style, computer competency level, possession of a computer, and gender.

Unlike studies conducted on biology pre-service teachers, those aimed at exploring in-service teacher attitudes are more common. Dreyfus et al. (1998) identified the perceptions of actively engaged teachers regarding the advantages and problematics of using the electronic spreadsheet in biology teaching. Cavas et. al. (2010) explored Turkish primary science teachers' attitudes towards information and communication technologies in education and the relationship between teachers' attitudes and the factors related to teachers' personal characteristics (gender, age, computer ownership at home, and computer experience). Mansour (2010) investigated Egyptian science teachers' beliefs about teaching and learning science through Science Technology and Society education. Bettencourt et al. (2011) conducted semi-structured interviews with secondary

biology teachers to identify their perceptions about Science-Technology-Society education. Muşlu Kaygisiz et al. (2011) measured the attitudes of biology teachers toward Computer Supported Teaching and the correlation between teachers' level of computer use and their attitudes. Gundy and Berger (2013) explored with the help of a qualitative methodology research the teachers' perceptions of integrating laptops into their biology courses in high school. Bitok (2014) identified Biology teachers' perception on the use of Information Communication Technology in teaching and learning activities from secondary schools. Fakomogbon et al. (2014) examined secondary school science teachers' perception of Information and Communication Technology for instruction based on their area of specialization. Osman (2014) evaluated the teachers' perceptions towards WebQuest, with reference to the technical, content and teaching and learning structure. Savaşçı Açıklan (2014) analyzed teachers' perspectives regarding the use of instructional technologies in science classrooms. The results of study showed that none of the participants used internet, interactive smart boards, spreadsheets, computer simulations, and educational software in their lesson plans. Županec et al. (2014) investigated primary school teachers' attitudes toward Computer Assisted Learning in biology teaching.

The main aim of the research was to identify the attitude of pre-service and in-service Biology teachers towards the use of the Internet. The questions underlying this research were the following: a) What is the attitude of Biology teachers towards the Internet? and b) Are there significant differences between the attitude of the pre-service biology teachers towards the Internet and that of in-service teachers?

Research Methodology

General Background

There was designed a quantitative study to measure pre-service and in-service teachers' attitudes towards the Internet. The quantitative approach is appropriate for the objective study of human phenomena (Parahoo, 2014). The instrument of data collection was the questionnaire, which allows obtaining quantitative data and their analysis using statistical information programs.

Sample

The research group consisted of 210 Biology teachers, of which 155 are pre-service teachers and 55 are in-service teachers who teach in secondary and high school education in Romania. Pre-service teachers follow the training courses for the teaching staff at the psycho-pedagogical module within "Vasile Alecsandri" University of Bacău from Romania.

Data Analysis

Descriptive statistics have been conducted to analyze teachers' attitudes towards Internet. The distribution was not normal, as a result of applying the One-Sample Kolmogorov-Smirnov Test, which indicated that Asymp. Sig. (2-tailed) <.05. Therefore,

Mann-Whitney U nonparametric test was used for measuring the difference between attitudes of pre-service and in-service teachers towards Internet. The SPSS version 21.0 for Windows (IBM SPSS Statistics) was used to perform all statistical analyzes.

Research Results

The results of the study were analyzed at a general level to highlight the attitude of Biology teachers towards Internet use and at a specific level to compare the attitudes of pre-service Biology teachers with those of in-service teachers. Analysis of overall results indicated a positive attitude of Biology teachers without using the Internet. Regarding the comparative analysis of the attitudes of pre-service biology teachers and in-service teachers to the Internet, there are no statistically significant differences.

Conclusions and Implications

Investigating the attitudes of pre-service and in-service biology teachers towards the Internet offers more opportunities for researchers and educators. First of all, measuring attitudes towards the internet indicates teachers' acceptance of technology as well as the extent to which they are willing to use them in biology teaching. Therefore, these studies contribute to knowing the possibility to exploit the new technologies by biology teachers in the teaching-learning activity. Secondly, the studies in the field of Internet attitudes are useful for improving pre-service teachers training programs from the perspective of preparing them for the use of technology in biology lessons.

The analysis of studies in this field has shown that research on in-service biology teachers is predominant in exploring their attitudes towards Information and Communication Technology. There are very few studies centred on determining the attitudes of biology teachers towards the Internet. It has also been found that there are few comparative studies of pre-service and in-service teacher attitudes towards new technologies.

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