

Epistemological Beliefs of Pre-Service Science Teachers

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Summary

INTRODUCTION

Epistemological beliefs are defined as people's beliefs towards what knowledge is, how learning occurs. It can be said that beliefs affect that people make decisions and display behaviors all their lives. This strong effect on people's thought and behaviors draws educator attentions. Studies made by educators about epistemological beliefs concluded that epistemological beliefs affected a lot of cases such as learning styles, attitudes, academic achievement, self-efficacy, learning approaches etc. of students. Epistemological beliefs affect not only student's learning approaches but also teachers' learning-teaching approaches. Teachers are one of the main elements of learning. Therefore, it will be advantageous to determine the teachers' epistemological beliefs. At this point, to determine the epistemological beliefs of pre-service teachers, who will train the posterity, becomes important. The aim of this study was to examine the epistemological beliefs of pre-service science teachers in terms of class level, gender, graduated school, level of mother's and father's education. This study was guided by following research questions:

1. Are there any significantly differences between of pre-service science teachers' epistemological beliefs with respect to class level?
2. Are there any significantly differences between of pre-service science teachers' epistemological beliefs with respect to gender?
3. Are there any significantly differences between of pre-service science teachers' epistemological beliefs with respect to graduated school?
4. Are there any significantly differences between of pre-service science teachers' epistemological beliefs with respect to level of mother's education?
5. Are there any significantly differences between of pre-service science teachers' epistemological beliefs with respect to level of father's education?

METHOD

In this study, survey method was used. The study group was formed from 236 pre-service science teachers of the first, second, third and fourth class in Mehmet Akif Ersoy University Education Faculty. During the sampling procedure, pre-service science teachers were chosen by stratified-purposeful sampling method. "Scientific Epistemological Beliefs Survey" was used to collect data. It was developed by Pomeroy (1993) and adopted in Turkish by Deryakulu and Bimaz (2003). It includes 30 items of which 22 items are positive and 8 items are negative. The Cronboach Alpha internal consistency coefficient of this instrument was .91. To analysis data descriptive analysis, t-test, one-way analysis of variance (ANOVA) and Kruskal-Wallis were used in this study. The level of significance was taken as .05.

FINDINGS

Results showed that there were significant differences between epistemological beliefs of pre-service science teachers according to class level and there were not any significant differences between epistemological beliefs of pre-service science teachers according to gender, graduated school and level of mother's and father's education.

Accordingly, epistemological beliefs are affected by class level but not affected by gender, graduated school, level of mother's and father's education.

CONCLUSION AND SUGGESTIONS

This study was made to examine the epistemological beliefs of pre-service science teachers in terms of class level, gender, graduated school, level of mother's and father's education. According to this study's findings, gender differences, graduated school, mother and father's educational levels didn't effect the epistemological beliefs of pre-service science teachers and just class level affected epistemological beliefs of pre-service science teachers. In short the more academic level that pre-service science teachers gain, the more epistemological beliefs towards non-traditional scientific understanding. On the basis of this finding, to enhance the epistemological beliefs of pre-service science teachers towards non-traditional scientific understanding, learning environments in which pre-service teachers put the constructivist philosophy into practice may be provided in education faculties.