

Science Education Ideas, Practices and Needs of Pre-Primary School Teachers in Greece

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ABSTRACT The present article presents the results obtained from a research on Science Education ideas, practices, and needs of pre-primary teachers in Greece. A questionnaire was administrated to a sample of 130 pre-primary school teachers, and the data was analyzed through Multiple Correspondence Analysis. The results show that there are separate groups of teachers, whose ideas and science teaching activities are related to their age, previous teaching experience, and studies.

KEY WORDS: Pre-primary teachers, science education

Introduction

In recent years, only few studies relating to learning and teaching science in pre-primary education appeared in the international literature (Ravanis, Koliopoulos & Hadzigeorgiou, 2004; Robbins, 2005; Valanides, Gritsi, Kampeza, & Ravanis, 2000; Zogza & Papamichael, 2000). In these studies, teachers delve into their own reality, note down their problems and difficulties, consider and judge their practices, and, on the basis of their findings, plan the improvement of their teaching. Researchers could only play the role of facilitators or critical friends supporting teachers' initiatives to deal with their problems (Bagakis, 1994). Researchers also tend to use research techniques, such as the interview and questionnaires, to figure out the elements of teachers' problems, while teachers become themselves the subjects of research (Tsitouridou, 1999).

These activities provide information and useful insights related to pre-primary school teachers and their difficulties in teaching science. Some findings relate to pre-primary school teachers' attitudes, ideas, knowledge, practices, and their pre- and in-service education. Evidence indicates that pre-primary school teachers believe that these attempts do not provide adequate information and sufficient knowledge for designing effective science activities (Harty, Andersen, & Enochs 1984; Newton & Newton, 2001; Raper & Stringer 1987). Research results suggest however that knowledge transformation in the science teaching "appears as a necessary precondition for the possibility of intervention and support of the curriculum through processes extending the abilities of the children and the critical view of scientific knowledge" (Tsitouridou, 1999, p. 92).

Pre-primary school teachers sometimes express a sense of insecurity and doubt, as to whether they are able to effectively support such activities (Appleton, 1995;

