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## **PRESERVICE SCIENCE TEACHERS' UNDERSTANDING OF GREENHOUSE EFFECT**

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Greenhouse effect is a serious environmental problem and for that reason it has been investigated extensively in current literature. These studies show that preservice science teachers held misconceptions about greenhouse effect, global warming and ozone layer depletion. In the light of the related literature, this study aims to identify preservice science teachers' understandings of greenhouse effect using in-depth interviews. Ten senior preservice science teachers participated in this study. Semi-structured interview protocol was used to collect the data. The interview protocol contained three main parts. In the first part, the participants' background characteristics were asked. In the second part, their ideas about greenhouse effect were requested. In the last part, their understanding of ozone layer depletion was inquired. The results revealed that participants had deficiencies in understanding of greenhouse effect, global warming and ozone layer depletion. Some of them confused greenhouse gases with the gases that cause ozone layer depletion. Additionally, they established relationships among global warming, greenhouse effect and ozone layer depletion inaccurately. The participants stated media and courses taken at university as the sources of their environmental knowledge. The possible implications for science teacher education programs are discussed by taking into account the findings.

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## **INITIAL IDEAS OF JUNIOR TEACHERS ABOUT UNCERTAINTY IN EXPERIMENTAL MEASUREMENTS**

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Experimental measurements in science inevitably involve error. Scientists face discrepancies in their measurements, and they need to manage this uncertainty to form warranted and valid conclusions. Research has not yet fully investigated how students deal with uncertainty in laboratory measurements and has not looked into teachers ideas on this topic. Our paper attempts to study initial ideas of 19 junior teachers on discrepant measurements in replications of an experimental procedure on the time it takes to melt varying numbers of ice cubes. Initial results of teachers' written responses to open-ended questions showed that some but not all junior teachers can draw valid inferences about relationships among variables based on results from replications of a simple experiment. Substantial, but also slight differences in measurements seemed to hinder their tendency to infer general laws with confidence. They were successful in identifying at least one source of error in experimental measurements, and in providing explanations for uncertainty in scientific results.