

Ilse Maessen (PhD project)

Project title:	Evaluation of Socio-Scientific Issues-based science lessons
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PhD Research	ESoE
Researcher	Ilse Maessen
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Promoters	Prof. dr. Jan van der Veen and prof. dr. Jan Vermunt
Co-promoters	Dr. Dury Bayram Jacobs and Dr. Marloes Hendrickx

Abstract:

In today's highly complex and rapidly changing world scientific literacy is recognized as a basic skill that all citizens should have. Science education aims not only to educate future scientists and technicians, but also to contribute to educating all students as scientifically literate and responsible citizens. Scientifically literate citizens can understand concepts, principles and scientific processes and can actively use this insight in daily life to deal with controversial problems. In order to educate all students as scientifically literate citizens, teachers are expected to help them developing skills such as argumentation, (moral) reasoning and assessing the reliability of information sources. These skills help us to deal with uncertain knowledge, controversial and complex issues, develop a nuanced understanding, evaluate proposed solutions therefore, in the end to be able to make informed decisions which are based on evidence. There is evidence that teaching Socio-scientific Issues (SSI) enhances students' learning of the above-mentioned skills.

Research into Pedagogical Content Knowledge (PCK) for teaching SSI shows that implementing SSI modules leads to strong PCK development in all components. Still, the aspect of evaluation lags far behind in this respect (Bayram et al., 2019). Apparently additional ways are needed to develop teacher knowledge and skills on evaluating SSI lessons.

The current research project applies lesson study as a way to further improve teachers' (collective) PCK on the assessment of SSI-based lessons. Lesson study is a means of collaborative teacher professional development that has received increasing attention in the Netherlands as in other countries worldwide in the past decades and has been found to be an effective means to add to teacher learning in other domains.

Given that teacher research on SSI is still an emerging area and evaluation of SSI-lessons are less advanced than implementation of them, the goal of the present study is to contribute to better understanding of effective evaluation of SSI-lessons and development of teacher knowledge through LS on the evaluation of SSI-lessons.