

# Papers Sessions Abstracts

*NERA's 41st congress – Reykjavik March 2013*

Network 15: Literacy Research Network

Session 4 ( Saturday, 9 March 11:00 - 12:30 )

Room: HS-202

Chair: Eva Hultin

## 79 Heteroglossic properties in written tests of scientific literacy

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The worldwide growing practice of testing has implications as well on school culture as on current discourses about education; it provides a discursive resource on how to talk about citizens' knowledge. For instance, in Sweden, the young generation's knowledge in science is assumed to be decreasing, according to evidence from international comparisons on scientific knowledge, such as the PISA and TIMSS.

However, instruments for testing knowledge (such as scientific literacy in PISA) have limitations that are seldom addressed. Among these are the inherent psychometric assumptions that knowledge is individual, hierarchal and stable, and that it can be elicited by clear-cut test questions.

I will discuss these assumptions in relation to qualitative empirical findings from my dissertation project, in which I have attempted to explore students' meaning making of science test questions from PISA 2006. The aim has been to gain knowledge about how young test takers approach and interpret the questions that are used to assess their scientific knowledge. For that purpose I have taken a Bakhtinian sociocultural theoretical and methodological perspective. Students' meaning making was videotaped (16 hours) when 21 small heterogeneous groups of 15-year olds collaboratively worked with eleven selected problems during a science lesson.

The semantic analysis suggests that when the students are to interpret these contextual test questions they are confronted with all the heteroglossic properties of human discourse. According to data it seems possible for the students to approach the test-questions with different understandings. Test-language does not appear as univocal but rather as ambiguous, and it actualizes many possible contexts and meanings in the discussions of the students. As such, it becomes crucial to discern between different social languages (scientific, educational, mathematical, everyday life-related or others) and most important: to understand the test constructor's intentions. The findings raise questions about whether it really can be assumed that students who take tests answer the questions we think they do. The relevance is therefore a caution in not over-interpreting results from large scale assessments.

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