

Active learning about research methodology and theory of science in engineering education

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ABSTRACT

Keywords – active learning, research methodology, theory of science

INTRODUCTION

Rationale

Research methodology and theory of science have become important teaching subjects in engineering education as well as in higher education in general (Silver, 2013). This is rooted in the transition to a knowledge society. Today, it is argued by many that we are well on the way to an era beyond modernity and the sort of industrial economy that came with it. Whatever else the new era brings – the globalization of risks, environmental problems, new technologies, etc. – knowledge and the ability to seek, produce, apply and transform knowledge is of huge importance (Hargreaves, 2003).

However, research methodology and theory of science is often not favored subjects by engineering students, who tend to find the subjects abstract. Thus, the students are often very engaged in the subjects, nor are textbooks or teaching very engaging.

This poster asks how we can promote active learning in research methodology and theory of science?

Based on a pragmatic reading of Bateson's logical categories of learning, the poster suggests a conceptual framework for competence development in research methodology and theory of science, which identifies different sets of competencies (instrumental, practical, analytical and critical) as well as learning activities to promote them.

Expected outcome

I will suggest a conceptual framework for competence development in research methodology and theory of science, which identifies different sets of competencies (instrumental, practical, analytical and critical) as well as learning activities to promote them.

Session type: Poster

REFERENCES

Bateson, G. 2000. Steps to an ecology of Mind. Chicago: University of Chicago Press

Hargreaves, A. 2013. Teaching in the Knowledge Society. Education in the Age of Insecurity. New York: Columbia University

Silver, N. 2013. Reflective pedagogics and the metacognitive turn. In Kaplan et al. (eds). 2013. Using reflection and metacognition to improve student learning. Across the disciplines, across the academy. Sterling: Stylus Publ.