



ProWo – Promoting Working Life Competencies in University Education

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Introduction

- Academically educated people often work in conditions where problem-solving skills, competences for collaborative innovation and the ability to use digital technology as a tool for new ways of working are needed.
- Students' social and academic integration into university learning and teaching are essential to the development of their academic expertise.
- Active student participation, concentrating on knowledge practices and collaborative working around shared problems and questions are essential in university teaching.
- The exploitation of close working life connections as a part of university teaching and learning is important
 - 21st century skills, versatile working life competences (e.g., The European Union, 2010; NSSE, 2009; Ala-Mutka et al., 2008; Benjamin et al., 2009; Klein et al., 2008; Shavelson, 2011; ATC21S; OECD/AHELO, 2010; Muukkonen & Lakkala, 2009)
- University students will be employed easier, if their expertise and know-how are relevant in relation with working life and surrounding society.



The importance of knowledge creation practices in university education

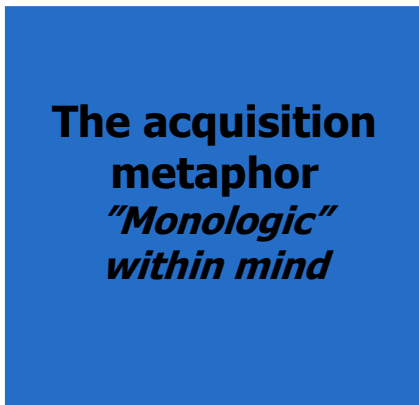
- Academic expertise is nowadays understood as the ability of communities, networks and organizations to solve problems and create innovations (cf. Sawyer, 2007; Scardamalia, 2002).
- University studies should make learning of collaborative epistemic agency possible (Scardamalia & Bereiter, 1991).
- The challenge is to develop the practices of university teaching towards collective and object-bound knowledge creation (Paavola & Hakkarainen, 2005).
- Specifically developed digital technology (virtual working environments and tools) can offer possibilities for this kind of teaching and learning (Lakkala et al., 2009).
- New and innovative pedagogical practices and technological solutions are needed.



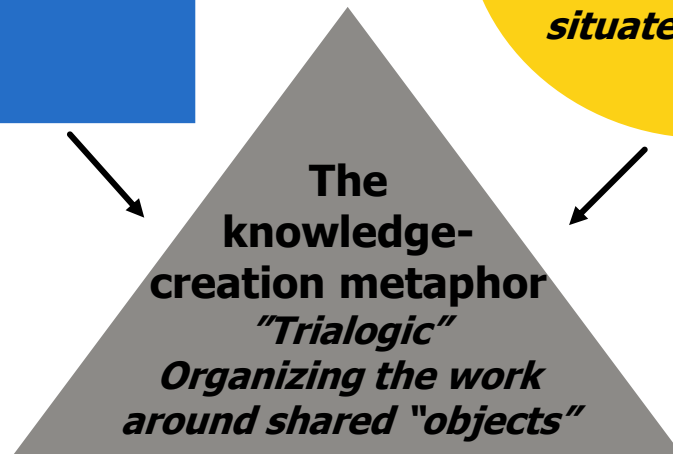
Three metaphors of learning and expertise

(Paavola et al. 2004; Hakkarainen et al. 2004; cf. Sfard 1998)

Emphasis on individuals and conceptual knowledge



Emphasis on social interaction, meaning making, and situated cognition



Emphasis on practices and artefacts developed collaboratively

E.g. *Bereiter's Knowledge Building, Engeström's expansive learning, Nonaka & Takeuchi's knowledge creation, Progressive Inquiry Model*



Design principles for triological knowledge practices

1. *Organizing activities around shared “objects”* (e.g., wiki pages, documents and models)
2. *Supporting integration of personal and collective agency and work through developing shared objects* (e.g., combining participants' own interests and shared assignments).
3. *Emphasizing development and creativity in working on shared objects through transformations and reflection* (e.g., examine knowledge in various forms, apply declarative and conceptual knowledge in practical problems, and explicate tacit knowledge).
4. *Fostering long-term processes of knowledge advancement with shared objects* (e.g., building on previous achievements, or making several iterative revisions).
5. *Promoting cross-fertilization of knowledge practices and artefacts across communities and institutions* (e.g., students' real collaboration with professionals in the field)
6. *Providing flexible tools for developing artefacts and practices* (e.g., tools that support integrated organization and co-construction of shared artefacts and practices).



Aims of the research project

- To promote and investigate pedagogical and knowledge practices both from the viewpoint of students, teachers, and working life representatives.
- Our interest focuses on the core elements of effective practices, pedagogies and technologies for promoting collaborative knowledge creation in higher education.
- Research questions
 1. How do university students act and learn during trialogical courses with new technologies?
 2. How do university teachers conduct teaching and improve their pedagogical practices through an organised development program and networking?



Participants and contexts

- Selected members of teaching staff and pedagogical university lecturers at University of Helsinki
 - Faculty of Behavioural Sciences, Law, Pharmacy, Social Sciences, Theology, Language Centre, and Open University
- The educational units to be researched have connections to the working life in various forms of the subject area in question.
- Various digital and web-based tools are used in the study processes for supporting collaborative knowledge creation.



Research procedures and methods

- A state-of-art review of advanced pedagogical practices in universities concerning working life contacts, collaborative knowledge creation and usage of technology;
- A series of workshops for university teachers to develop their pedagogical units;
- 4-6 courses (and their iterations), representing varying types of pedagogical practices for detailed investigation (teacher interviews and stimulated recall, observation of lessons, database content);
- Selected parts of OPPI-questionnaire to measure the development of students' approaches to learning during the various course settings. The questionnaire will be complemented by new questions measuring the learning of working-life skills and the learning of knowledge work competences.



Main research activities, data collection and timetable

	2012	2013	2014
University teachers	<i>State-of-art review;</i> <i>Workshops for teachers;</i> <i>Support meetings for teachers;</i> <i>Selection of first set of courses (4-6);</i> <i>Data collection: videos, teacher interviews, produced artefacts;</i> <i>Preliminary data analysis</i>	<i>Workshops for teachers;</i> <i>Support meetings for teachers;</i> <i>Selection of second set of courses (4-6);</i> <i>Data collection: videos, teacher interviews, produced artefacts;</i> <i>Data analysis</i>	<i>Workshops for teachers;</i> <i>Support meetings for teachers;</i> <i>Data collection: videos, teacher interviews, produced artefacts;</i> <i>Data analysis</i>
University students	<i>Data collection: videos, produced artefacts, OPPI-questionnaire, student interviews;</i> <i>Preliminary data analysis</i>	<i>Data collection: videos, produced artefacts, OPPI-questionnaire, student interviews;</i> <i>Data analysis</i>	<i>Data collection: videos, produced artefacts, OPPI-questionnaire, student interviews;</i> <i>Data analysis</i>



Expected scientific outcomes

- Research results related to the dialogically organised university courses from the viewpoint of teachers' pedagogical practices and students' working-life competences;
- Research-based knowledge for developing university teaching;
- Conceptual models and design principles for promoting collaborative knowledge creation practices and working life connections in university teaching;
- Presentations in national and international conferences and peer-reviewed journal articles.



Expected practical outcomes

- Pedagogical training for teachers, university administrators, pedagogical university lecturers and outside experts participating in the organised development workshops;
- Pedagogical models and best practices to educate university teachers in the dialogical approach and to apply it in practice;
- Models for advancing university teachers' networking and pedagogical competence;
- Models and examples for functional collaboration practices between educational institutions and professional organizations;
- Functioning and continuous collaboration practices between the university departments and faculties and working life partners, e.g. companies, municipal partners, etc.



Partners and collaborators

At the University of Helsinki

- Network of Senior Lecturers in University Pedagogy
- Educational Centre for ICT
- Career Services

Others

- Metropolia University of Applied Sciences
- International research colleagues investigating similar educational practices