

Reflective Practice-based Learning Across Technical Educational Disciplines

Lasse Christiansen, Marianne Georgsen, Tommy Edvardsen Hvidsten and
Esben skov Laursen
Professionshøjskolen UCN and Fagskolen Viken

Some of you might have heard about hard and soft skills

- However, this is relative to the task

Core skills are important (as ever)

- Programming
- Mechanics
- Chemistry
- Math
- Language

Contextual skills are increasing in relevance

- Communications
- Lifelong Learning
- Self direction
- Interdisciplinarity

Can reflection aid competence development in interdisciplinary groups?

Key principles for our case study

- 1. The students' own experiences are incorporated into teaching and learning activities
- 2. Teaching and learning activities designed to include appropriate disturbances
- 3. Teaching and learning activities are organised as an exploration
- 4. The content of teaching and learning activities is based on a good example
- 5. Teachers and students work together on learning processes
- 6. Teachers and students create room for dialogue

GÖTEBORGS UNIVERSITET
Pedagogiska institutionen



UNIVERSITY OF GÖTEBORG
Department of Education

VOCATIONAL EDUCATION: AN HISTORICAL ANALYSIS

The development of the vocational school system
and vocational education in Sweden from the ending
of the Guild system in 1846 to the 1980's and
some reflections on likely future trends.

S U M M A R Y

Lennart Nilsson
Ph.D.

1982-09-15

Postadress
Box 1010
S-431 26 Mölndal, Sweden

Besöksadress
Folkungsgatan 118

Tel. 031 - 17 10 00 14



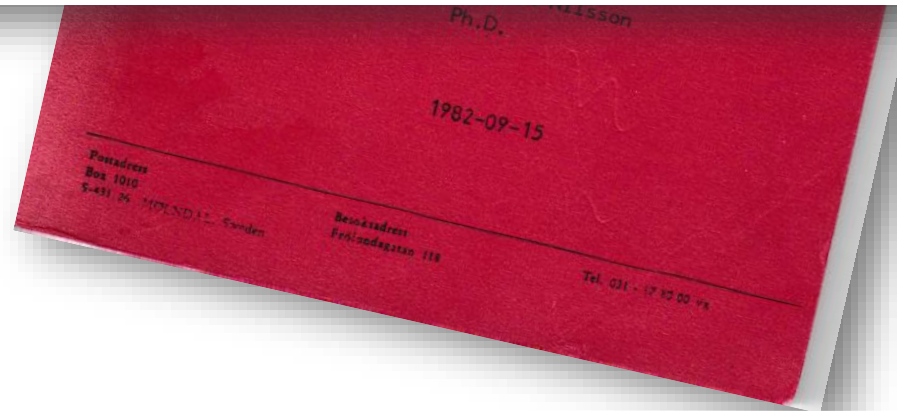
A Pebble-in-the-Pond Model For Instructional Design

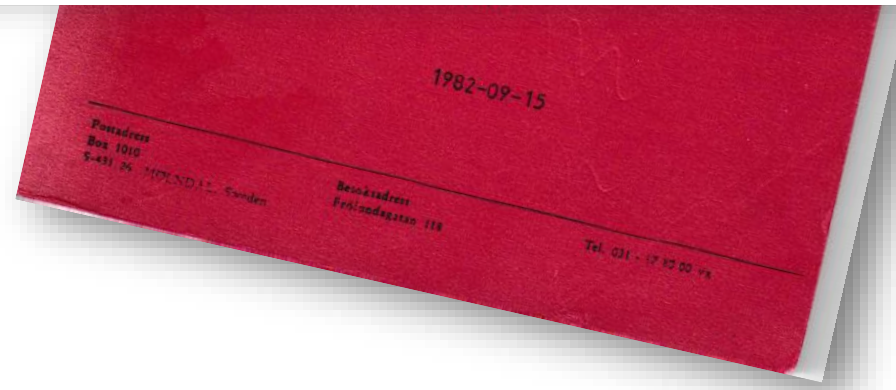
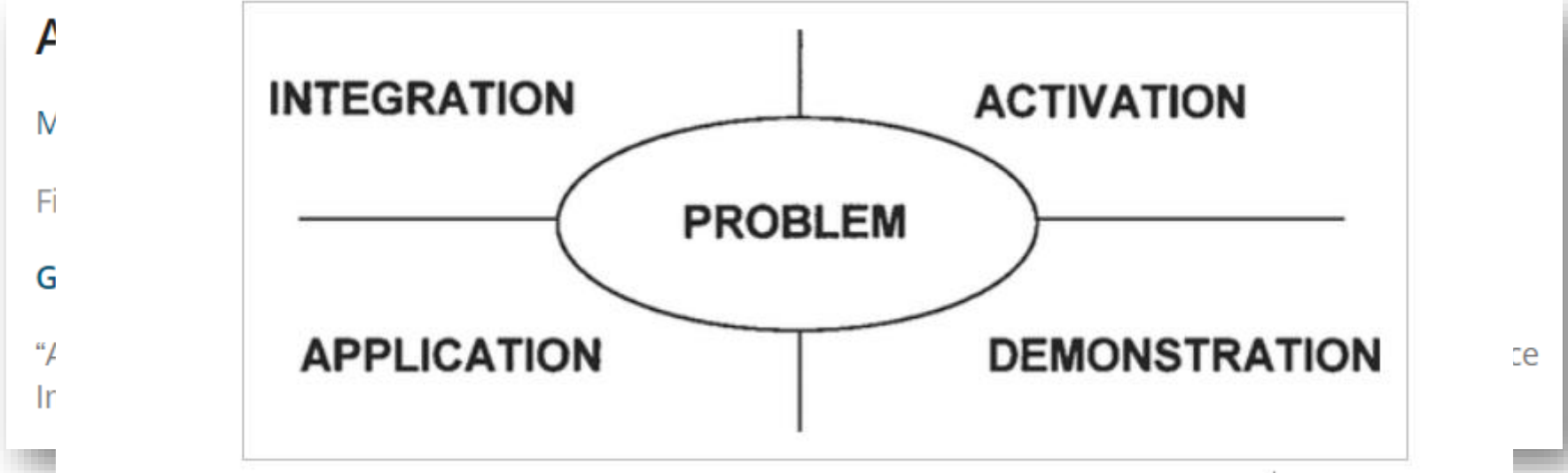
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First published: 22 January 2015 | <https://doi-org.zorac.aub.aau.dk/10.1002/pfi.21454> | Citations: 4

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“A Pebble-in-the-Pond Model for Instructional Design” by M. David Merrill is reprinted from Performance Improvement, 41(7), 2002, pp. 41–46. doi:10.1002/pfi.4140410709





A Pebble-in-the-

M. David Merrill

First published: 22 January 2002

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"A Pebble-in-the-Pond Model for Instructional Design Improvement, 41(7), 2002, pp. 702-714"

Journal of Computing in Higher Education
Fall 2004, Vol. 16(1), 3-29

Designing Authentic Activities in Web-Based Courses

Jan Herrington
School of Communications and Multimedia
Edith Cowan University, Australia

Thomas C. Reeves
College of Education
The University of Georgia

Ron Oliver
School of Communications and Multimedia
Edith Cowan University, Australia

Younghee Woo
College of Education
The University of Georgia

ABSTRACT

INFLUENCED by constructivist educational theory and advances in technology, there is increasing interest in authentic activities as a basis for learning in both face-to-face and Web-based courses. Whereas traditionally, real-world activities have primarily served as vehicles for practice of skills or processes that are taught using traditional instructional methods, a more radical approach is to build a whole course of study around authentic activities and tasks. The authors of this paper argue that the value of authentic activity is not constrained to learning in real-life locations and practice, but that there are critical characteristics of authentic activities that can be incorporated into the design of Web-based courses to enhance learning online. We include a description of the theory, research, and development initiatives that provide the foundations for this approach. Finally, we present guidelines and examples

Design

10.1080/105904602/pfi.21454 | Citations: 4

Printed from Performance

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Design

*"A good teacher will leave you relaxed, but a great teacher will leave you restless. We'll
Barbara Oakley is a great teacher. Not only does she have a mind for numbers, she has a
way with words, and she makes every one of them count."
—Mike Rowe, creator and host of Discovery Channel's Dirty Jobs and CEO of endemolWORK*

$a(\text{MIND}) =$
for
NUMBERS



A Companion to
COURSEKRA's
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BARBARA OAKLEY, Ph.D.

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dations for this approach.

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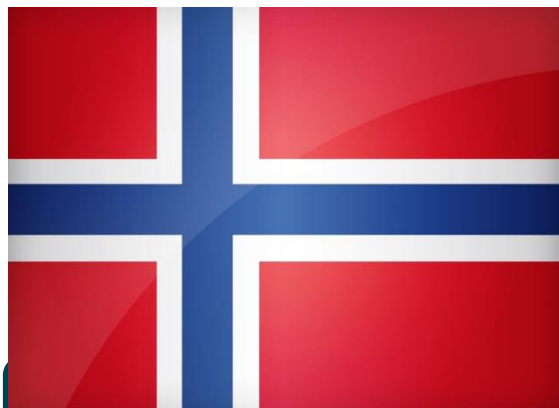
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We investigated this through a case study



Course 1

Interview 1



Course 2

Interview 2

Joint analysis

The students...

- ...got more insight by expressing, and hence reflecting on their own competencies
- ... reflected on how to express their knowledge to outsiders
- ... appreciated the groups reflection on their own discipline
- ... could foresee barriers and opportunities in their later career
- ... did not see any immediate gains in their in-depth technical skills
- ... acknowledge disciplinary differences to project work

In summery, interdisciplinarity groupwork caused

- Adding to existing knowledge
- Adjusting existing knowledge (through reflection)
- Connecting knowledge areas (through reflection)