

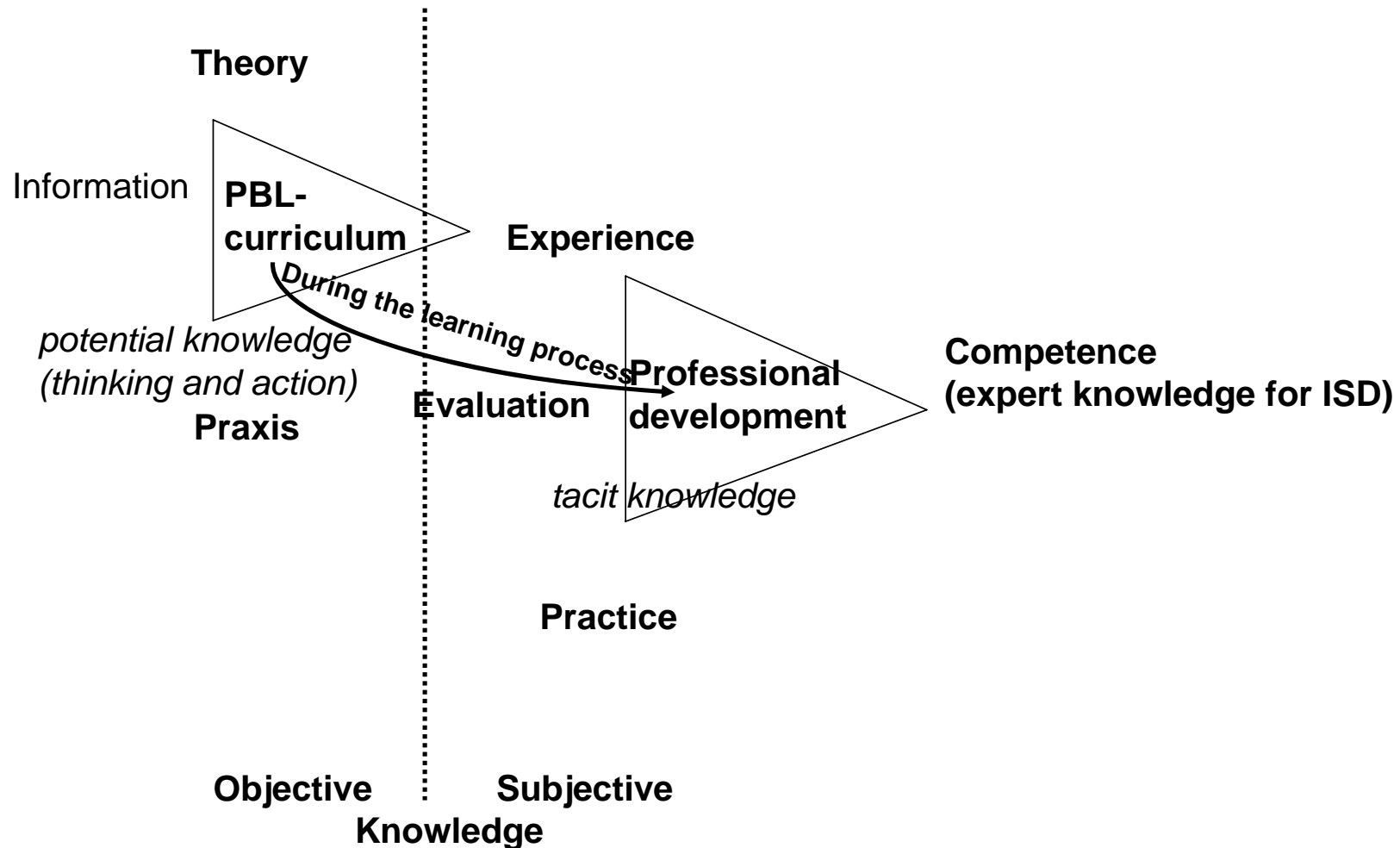
Does a three part assessment framework foster students' competences in information system creation?

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Aim

- This study analyzes the usefulness of an evaluation method and Problem Based Learning in developing software project competences in higher education.
- How can different evaluation methods support students' knowledge development in a project of creating information systems?
- In the assessment process students' own assessment as well as formative and summative assessment were emphasized

Framework of Problem Based Learning



(Poikela E and S, 2006)

The aim of the evaluation

1. The evaluation process consisted of assessment and feedback
2. The assessment was part of the learning processes and it had to offer possibilities to learning
3. The aim of the assessment was to evaluate the process in real-life context
4. The assessment was based on collaboration and everyone had an opportunity to assess.
5. The partners of the assessment process were aware of the criteria of evaluation
6. The evaluation process was intended to support and foster students' ability to self assessment

Implementation of the project

- Case study of 9 real-life projects, 41 students, 4-5 students per group, 5 months period and the working resource in a project was 200h/each student

- The evaluation process consists of two topics.
 1. *The base of assessment is transformed from teacher centered assessment to student centered.*
 2. *The assessment process aims to improve a method for the students to observe their own learning processes as individuals and as members of the group.*

Assessment methods

- 1. **Students' own assessment**
 - **Diagnostic assessment** (technical skills, self assessment)
 - Groups were homogeneous due to technical skills
 - **Self and peer to peer assessment** (competence and learning, individual and group level)

- 2. **Formative assessment**
 - **Seminar presentation** (tutor and customer assessment, 2 oral presentations)
 - **Customer assessment** (final application assessment)
 - **Students' final report** (portfolio, group, self and competence assessment)

- 3. **Summative assessment**
 - **The process assessment** (tutor and group assessment of the process)

The summative assessment grading criteria for the process

- Preliminary study (5%)
- Requirement specification (15%)
- Design (10%)
- Implementation (40%)
- Testing (5%)
- Project work (meetings, workshops)(15%)
- Schedule and documentation (10%)
- Subjective assessment (supervisors, 1-1,2)
- Every student had an opportunity to defend their solutions orally in the final meeting

Results

1. The empirical results indicate that group-based assessment results in better learning
2. Groups which got higher final grades could formulate the common language for the project work and these groups could use members' competences efficiently to improve the ISD process.
3. When assessing the group work, students regarded as best parts the competence of the group, motivation and collaboration skills.
4. In groups which got lower final grades, typical for the process was lack of sharing information between group members, no time for collective work and lack of commitment in the project.
5. In all groups peer to peer assessment did not support enough the learning process of the students, because the students were not familiar with assessing other students.
6. There was also a lack of knowledge sharing between groups. For example programming skills were not transformed enough between groups.

Conclusion

- Skill development requires repeated assessment of the skill, practicing and feedback. This means that formative and summative assessment is essential for the development of skills, because with these assessment methods we can improve and support students' self-directed and shared learning.
- The frequency of feedback is important, because the assessment has to be used timely correctly.
- In information systems creation processes we need to evaluate after each project phase, so that students' self assessment will be fostered and students' learning will be supported during the whole process.

Thank you !
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