

The Divided Thinking: A developmental project of the education of teacher education

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Abstract

The Divided Thinking -model is a developmental project of the education of teacher education which started in the autumn 2004 at the University of Jyväskylä. The starting points for planning the model have been the experiences acquired from a science study project, which is a part of the class teacher studying. The realization of the study project is based on research data acquired from science instruction.

In the divided thinking -model the students' learning processes are long-term journeys to their habits of interpreting information and using it to solve arising problems; habits that guide their thinking. During the study, the students learn to consciously evaluate and develop the competency of their pedagogic content knowledge on the content themes that they study, by interacting with different quarters representing different areas of expertise. The sharing of expertise is done on several different levels. It is inner activity of student groups operating in flexible assemblages, or seeking help from a special expert whenever it is required for deepening the knowledge or checking the accuracy of information. The expert network available for the development project is comprised of experts representing different fields including teacher educators and of students at different stages of study.

The problem-based approach supports the fact that the acquired information is interpretative, as well as the fact that this information also needs to be tested for its validity in solving new problems. At the same time, it increases the students' trust in their possibilities to learn new things in a new way when their know-how needs reconstructing.

There are many ongoing study entities in the experiment of the divided thinking -model that integrate scientific expertise. As a result of the integration many study teams have been formed, such as co-operation groups of class teacher trainees and subject teacher trainees, co-operation groups of people taking part in the basic teacher training and in-service training, groups integrating native language education and science education, and co-operation groups of different teacher educators.

WHY RECONSTRUCTION MODEL?

Better awareness about one's own learning process and growing confidence in the own possibilities to become a skilled teacher and a researcher of one's own work.

Introduction

The responsibility of teacher training in the development of school culture

The social well-being that makes a physically and mentally sustainable development possible starts from how an individual experiences himself/herself as a part of social reality. People, who have learned to learn, feel themselves able to handle new challenges. They are ready to interact with their environment in order to become aware of the beliefs that guide their actions. They are also prepared to look for creative solutions to change their own operational culture. The school assessment studies show that the amount of pupils that fail or are displaced at school is increasing. This shows that the

modern school culture is no longer able to rise to the challenge of the society. Teacher training is the key in changing the situation. Education must influence so that the knowledge of teachers prepares the way for different learners and especially pupils of different cultural backgrounds to make progress according to their own potential.

Teachers who have learned to evaluate the proficiency of their expertise have the courage to critically evaluate their own way of thinking and acting, and they act to find new perspectives to view the school's reality comprehensively. If self-criticism makes the teachers feel unsure about their ability to respond to the need of change in their own teachership, then also the teachers are in danger of displacement. According to studies especially commencing teachers experience the comprehensiveness of teaching situations as chaotic – concentrating in the things they teach and keeping up with the syllabus diverts them from seeing how the pupils experience the lesson and the things they are taught. To develop and increase the use of the reconstruction model in teacher training is one way of making the students and teachers more aware of their learning process and of giving them more confidence in their possibilities to develop into skilled teachers.

The support the learning process provides led according to the reconstruction model in developing the teacher training as a part of the science community at the university

The reconstruction model promotes pedagogical development of the curriculum according to the goals of the Bologna process. Already during basic studies that are a part of the pedagogical studies the student is able to carry out a small study project that fulfils the criteria of scientific work and leads towards scientific writing. Students can make the method studies more influential and meaningful by integrating them with their own research theme and study process. The offerings of theoretical method studies and the actions aimed to understand teaching in practice become organized and the teachership of the student develops into practical wisdom. With practical wisdom is here meant the teacher's skill to apply the theoretical knowledge they have acquired to situation control which is needed in teaching in practice. Opintoprojektissa todentuu myös tarve eri tieteen alojen tekstien ja tiedon erilaisille vastaanottajille suunnattujen tekstien ymmärtävä lukutaito ja tiedosta kertominen. The study project also verifies the need for an understanding ability to read and tell about texts and information from different fields aimed for different recipients. The reconstruction model project along with the project aimed to develop the education in mother tongue and literature support and complete one another both in their aims and in their operational culture.

The reconstruction model enables the reduction of contact teaching in accordance with the recommendations of Bologna. Even though the realisation of the learning process is well organized, the model gives room for students' spontaneous acquisition of information, interpretation and reconstruction of their own understanding according to the socio-constructivist learning conception. The model also increases problem-based cooperative learning done in peer groups, where the new information produced in the problem discussion directs the reformulation of the problem. This activity does not support the naive constructivist interpretation of learning as inventing but instead guide to find and test information in a scientifically acceptable way.

The research approach to teaching is emphasized in the work of the teachers who use the model. Learning processes of the pupils bring problems that lead teachers to find answers to problems that are new to them.

The model can be a help in developing the research strategy of the department as a part of the tripartite cooperation of teacher training. The ever growing group of postgraduates is easier to manage when the guidance needed for theses and further studies on different levels is linked. Research teams that add and divide expertise and do basic and further studies are needed also because it is desirable that the reform of the teacher training curriculum is developed into a process that is more dynamic and more strongly based on scientific research.

In our development project the reconstruction model is the aim and the tool of learning. The model has been tried out in the department of teacher education at the University of Jyväskylä and the

format of the model has now formed as functional at the very least. Developing the model further and its extensive application to teacher training is an alternative to be reckoned with in finding the means to integrate the education of teacher training and produce information about the impressiveness of the education. To reach the goals also education of the people who are responsible for teacher training is also needed as teams that divide their expertise – acquiring the reconstruction model means a change in the paradigm of educational practices.

The aim written into the pedagogical idea

to develop the teachers' basic and in-service training so that it will increase the teachers' preparedness to modify theoretical mastery of subject knowledge and pedagogy into practical wisdom the teaching situation requires.

The possibility to apply clearly over the limits of subjects and training models

A Research

- The model is based on research and is controlled by the socio-constructivist frame of reference of learning and teaching.
- The model is fully formal so that it can be applied to different learning contents
- The model guides to understand the relationship between learning and teaching.
- The meaning of the model for the quality of learning and teaching that promotes learning has been researched and there is published international information available.

B Tripartite principle

- Using the model supports the tripartite cooperation that is required by the Ministry of Education between different faculties, departments of the faculty of education and Normaalikoulu.
- The model guides to profound learning by teaching to understand the interaction between theoretic knowledge and practice. Being more confident about their mastery on the subject and having research knowledge on learning difficulties that can be expected, students get better ability to concentrate on supporting the learning.

C Regional impressiveness

- The model is suited for teachers' spontaneous professional development and for sharing expertise in their work community guided by the socio-constructivist frame of reference – the same frame of reference that is the basis of the modern national curriculum. Implementing the goal requires in-service training. The model works as a tool and by using it the teachers can make their learning process visible and explicit so that people with different expertise can influence it directly or indirectly for example through research literature.
- A network of field schools will be established in the region of Jyväskylä network city. It will be an effective way to create a living connection between the discussion between the scientific development of the university and the experience of the field.
- In the project the teacher trainees produce educational entities that can be demonstrated on different theme days at the schools in the region

D The personnel strategy of the university

- The project provides a social and theoretical frame for the teachers in the teacher training unit to promote post-graduate studies and writing of scientific articles. The cross-scientific knowledge is united.
- The personnel of the department of teacher education and Normaalikoulu get current substance know-how from the best experts of subject departments. Respectively, the subject departments get support for pedagogically emphasized research and for instructing theses.

E Integrated basic education

- In the projects people who are training to be class teachers, subject teachers and/or special education teachers can function in an integrated group. This is a highly valuable experience for future teachers, since Finland has an integrated basic education. Working together promotes the development of extensive knowledge and good co-operation starting as early as in basic education.

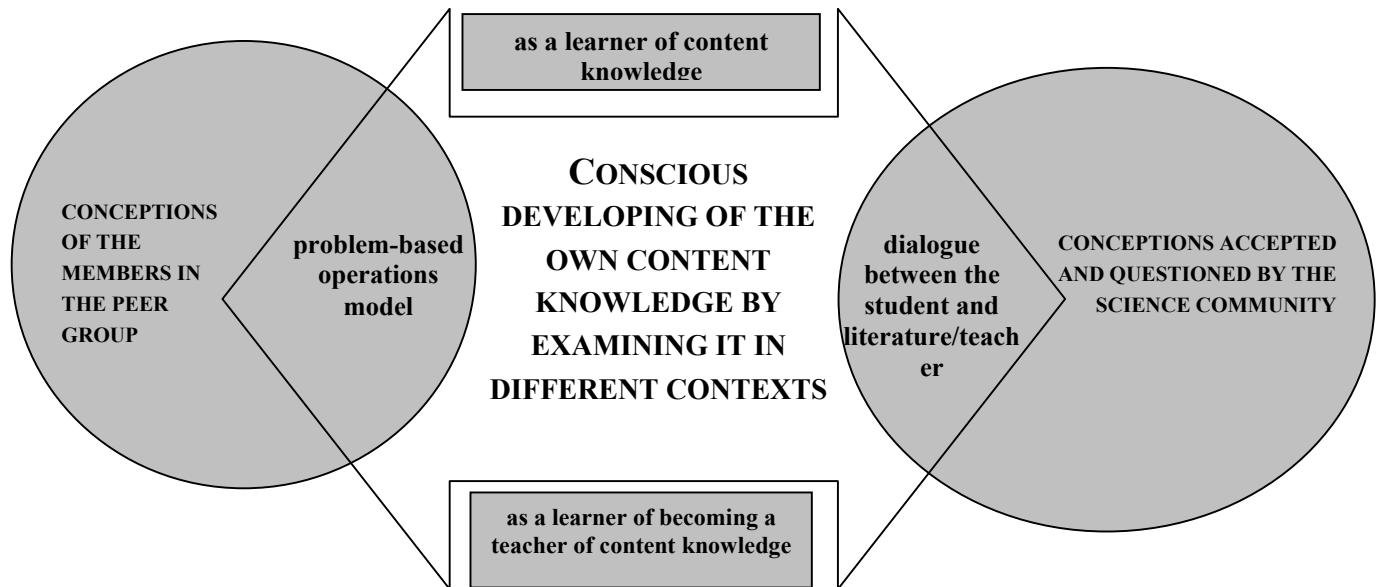
F Ensuring the quality of teacher training

- Teaching and guiding the research process is an inseparable part of the implementation of the reconstruction model. It is done so that it develops the students' understanding about researching. The ramifications of carrying out a study project can be seen in the rise of the quality level of teacher trainees' theses.
- The new degree does not include a pedagogical pro seminar in subject teacher training. Pro seminar has been an important part of pedagogical studies when the teacher trainees have been initiated into research of education and learning. A research project done according to the reconstruction model can replace the pro seminar.
- Reconstruction model contributes to the realisation of the principle of participating education.
- The model makes teachers aware of the factors that can hinder pupils' learning, and act so that these would be eliminated. From the point of view of a project leader in the centre of the learning process are the learners – teachers, students or pupils – and guiding their learning so that it is possible to achieve the goals set for learning.
- The educational reconstruction model can be applied on many different levels from a basic course all the way to doctoral thesis and international article.

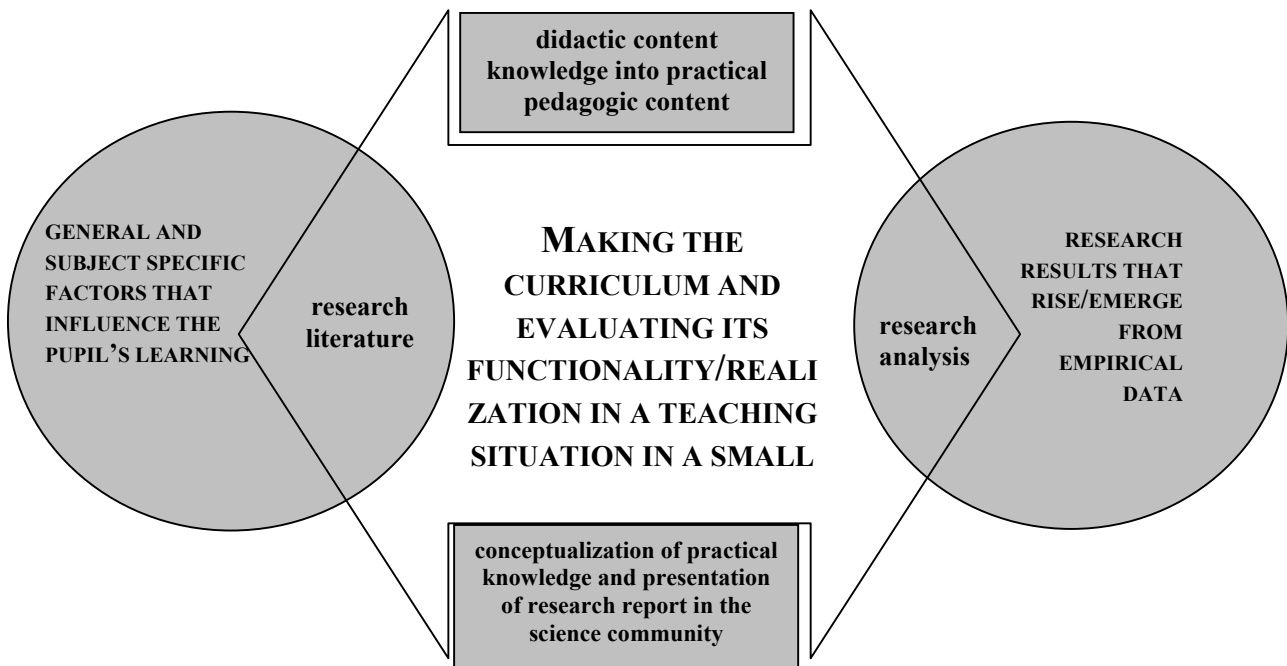
Summary

The reconstruction model has been applied in a small scale in the basic education of science as well as in teaching history and economic science. The experiences encourage continuing to develop the model and to use it more widely. The educational project is a process of scientific activity: It guides the students to systematically collect information on a subject of their choice and to analyze it from different angles – information as their own knowledge and divided in a group, as accepted in the science community, as presented in the learning material and as something the pupil needs to learn. A synthesis is done based on the different analyses. The model becomes less used as a format; during the process, the model that is learned through individual thematic entities or themes transforms into the users' way of thinking and taking over new things.

The next page shows a diagram on how the reconstruction model can be applied to the education of subject teacher or class teacher studying.



critical analysis of the information presented in the learning material
 pedagogic theoretical knowledge of the content knowledge taught
 knowledge in the classroom – guided observation of teaching



distribution of expertise acquired in study projects in a seminar

FIGURE: An example of applying the reconstruction model to subject teacher training or to the diversified studies of class teachers. In addition to the contact education that has been agreed beforehand the students have a possibility to get individual and group guidance. Small-scale seminar sessions are also a part of the process.