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Developing student teachers' expertise in Finnish teacher-education programme

**20th year celebration of the University of Western
Macedonia, Florina, Greece**

May 25th 2011

Jari Lavonen
Professor of Physics and Chemistry Education,
Head of the department
Department of Teacher Education,
University of Helsinki, Finland



What is common in teacher education in high performing PISA countries?

Helsinki, February 2011, 12:00



Finnish educational context



Characteristics of Finnish Education

Halinen (2008); Jakku-Sihvonen & Niemi (2006); Laukkanen (2008)

1. Common, consistent and long-term policy
 - models for teacher and compulsory education are 40 years old
 - teachers are qualified and committed
 - support to the development of broad literacy
2. Educational equality (especially in comprehensive school)
 - education is free, including books, meals, health care, ...
 - schools do not select their students (school districts)
 - well-organised special education (inclusion) and counselling
3. Devolution of decision power to the local level
 - a headmaster is a pedagogical leader (leadership)
 - local authorities (together with the teachers) plan local curriculum, allocate resources, ...
 - school based and encouraging assessment
4. The culture of trust and co-operation:
 - national level – district – school – families**
 - no inspectors, no national exams ...
 - no private tutoring or evening schools



Helsinki university main building

Context of the study: Finnish teacher education



A secondary (subject) teacher

- typically teaches at grades 7 to 12 (ages 13 to 19)
- teaches typically one major and one minor subjects (e.g. math and physics)

An elementary (primary) school teacher

- teaches at grades 1 to 6 (ages 7 to 13)
- teaches typically all 13 subjects



Teacher education at the University of Helsinki

University of Helsinki (11 faculties, 38 000 students, 7 400 staff members)

Faculty of
Behavioural
Sciences

Dept. of
Teacher
Education

Teacher
Training
Schools

Faculty
of
Arts

Faculty
of
Science

Faculty
of
Biosciences

Faculty
of
Theology

Faculty
of
Social
Sciences

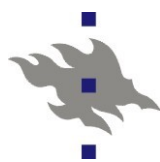
Secondary teacher education: pedagogical studies + subject studies

Primary teacher education

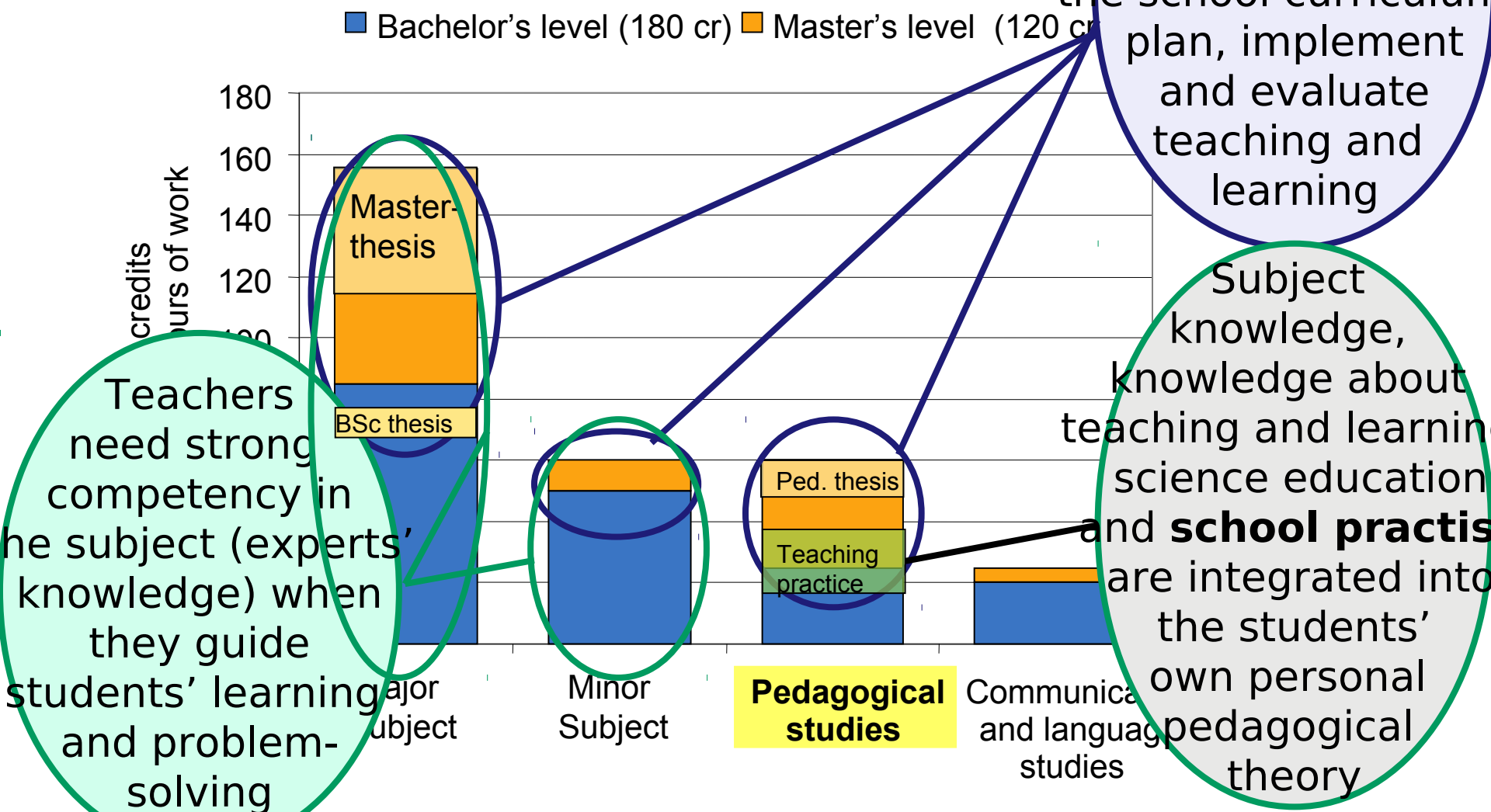


Teacher Education Development Programme **(2002): The teacher education programmes should help students to acquire:**

- high-level subject knowledge and pedagogical content knowledge, and knowledge about nature of knowledge, ...
- academic skills, like research skills; skills needed in developing a curricula, ...
- social skills, like communication skills; skill to co-operate with other teachers, ...
- knowledge about school as an institute and its connections to the society (school community and partners, local contexts and stakeholders),
- moral knowledge and skills, like social and moral code of the teaching profession,
- skills needed in developing one's own teaching and the teaching profession.

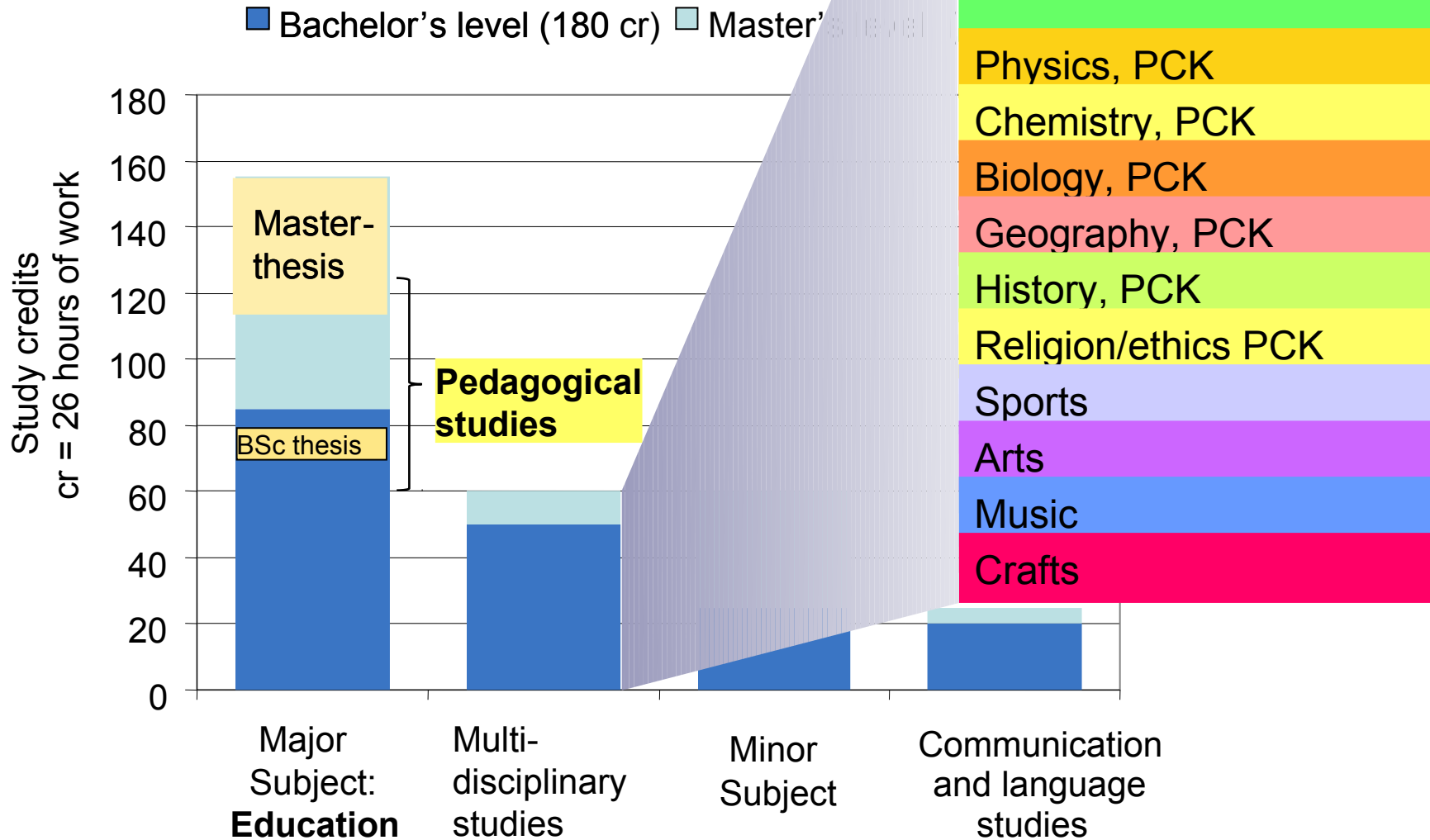


Structure of the Master's degree of a secondary teacher: 3 + 2 years





Structure of the master degree of a primary teacher: 3 + 2



Education

- Psy. = Psychology of development and learning;
- Spe. = Special needs education;
- Phil. = Social, historical, and philosophical basis of education;

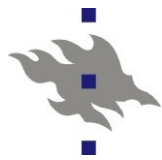
- Sem. = Research methodology in education and teacher as a researcher-seminar;

Pedagogy

- Cur. = Curriculum development and planning of *subject* teaching;
- Eval. = Evaluation of *subject* teaching and learning;

Practice

- B_prac. = Basic Supervised teaching practice;
- Ap._prac. = Applied Supervised teaching practice;
- Ad._prac. = Advanced Supervised teaching practice



The structure of the pedagogical studies in secondary teacher education programme in Finland

| Pedagogical studies in Finland (60 cp.) | | | |
|--|---|---|--|
| General courses of education, teaching and learning 13 cp | Subject pedagogy (PCK) 17 cp | Educational research 10 cp | Teaching practice 20 cp |
| Psychology of development and learning 4 cp | Psychological basis of teaching and learning of a subject 5 cp | Research methodology in education 3 cp | Supervised basic teaching practice 7 cp |
| Special needs education 4 cp | Curriculum development and planning of teaching 5 cp | Teacher as a researcher 3 cp | Supervised applied teaching practice 5 cp |
| Social, historical, and philosophical basis of education 5 cp | Evaluation of teaching and learning, evaluation of a curriculum 7 cp | Minor thesis in pedagogy 4 cp | Supervised advanced teaching practice 8 cp |
| | | | - Reflection supported portfolio assessment work |

In Finland huge amount of PCK is taught also at the departments of Physics, Chemistry,...



Psychology of development and learning, 4 cp

Objectives:

- A student becomes familiar with development of an individual and group and identifies the special characteristics of the different groups.
- The student develops readiness to understand different views on the growth, development and learning of the human being and from the significance of the interaction between an individual and a group and takes the psychologic principles of the learning into consideration in the teaching.

Questions



Theoretical framework



A structural perspective to teacher knowledge

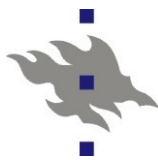
- A knowledge base for a professional teacher:
 - Subject matter knowledge,
 - Pedagogical Content Knowledge (PCK)
 - General Pedagogical Knowledge (GPK)

(Shulman, 1987; Carlsen, 1999; Hashweh, 2005)
- + **Knowledge about how to produce and consume research based knowledge in education (RES)**

Origin of teacher knowledge

- Teacher knowledge could be divided into:
 - practitioner (practical) and
 - professional (theoretical) knowledge

(Hiebert et al., 2002)



Academic General pedagogical knowledge (GPK)

↔ Students personal pedagogical knowledge

- Research based General pedagogical knowledge (GPK) consists of

- 1) classroom management and organization
- 2) instructional models and strategies
- 3) classroom communication

Importance of interplay between GPK and personal pedagogical knowledge through reflection or through other type of activities

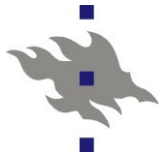
e.g.

Gore & Gitlin, 2004

Morine-Dershimer &

Kent, 1999

- 4) personal beliefs,
- 5) personal practical experience



Pedagogical content knowledge (PCK)

■ PCK is a knowledge domain that is synthesis of all knowledge needed for teaching and learning a specific content

■ PCK is

- content specific,

- event- and story based

- pedagogical

Is it possible to organise a course on PCK?

- pedagogical content knowledge has developed

- pedagogical content knowledge of repeated

- pedagogical content knowledge planning and teaching and

- reflection on the teaching

- pedagogical content knowledge of the most regularly taught topics.

e.g.

Grossman, 1990;

Bromme, 1995

Hashweh, 2005

McCaughtry, 2005

Nilsson, 2008



Empirical part of the study



Content analysis of the curriculum (aims) of the pedagogical studies

- Content analysis started with the domains and origins of teacher knowledge (derived from research literature):
 1. Teacher knowledge domains:
 - General Pedagogical Knowledge (GPK);
 - Pedagogical Content Knowledge (PCK);
 - Educational research (RES)
 2. Origin of teacher knowledge:
 - Professional (Theoretical) knowledge (Prof);
 - Practical knowledge (Prac)
- However, it is a challenge to analyse the courses
 - Support to PCK and GPK construction is included in several courses
 - Practical knowledge is not only constructed in teaching practice but also during the theoretical
 - Theory is applied in teaching practice (justification of pedagogical decisions in the classroom)
 - **Reflection is kind of “research-making” (systematic: observation – description of it – analysis – explanation. (Rodgers 2002, 863).**

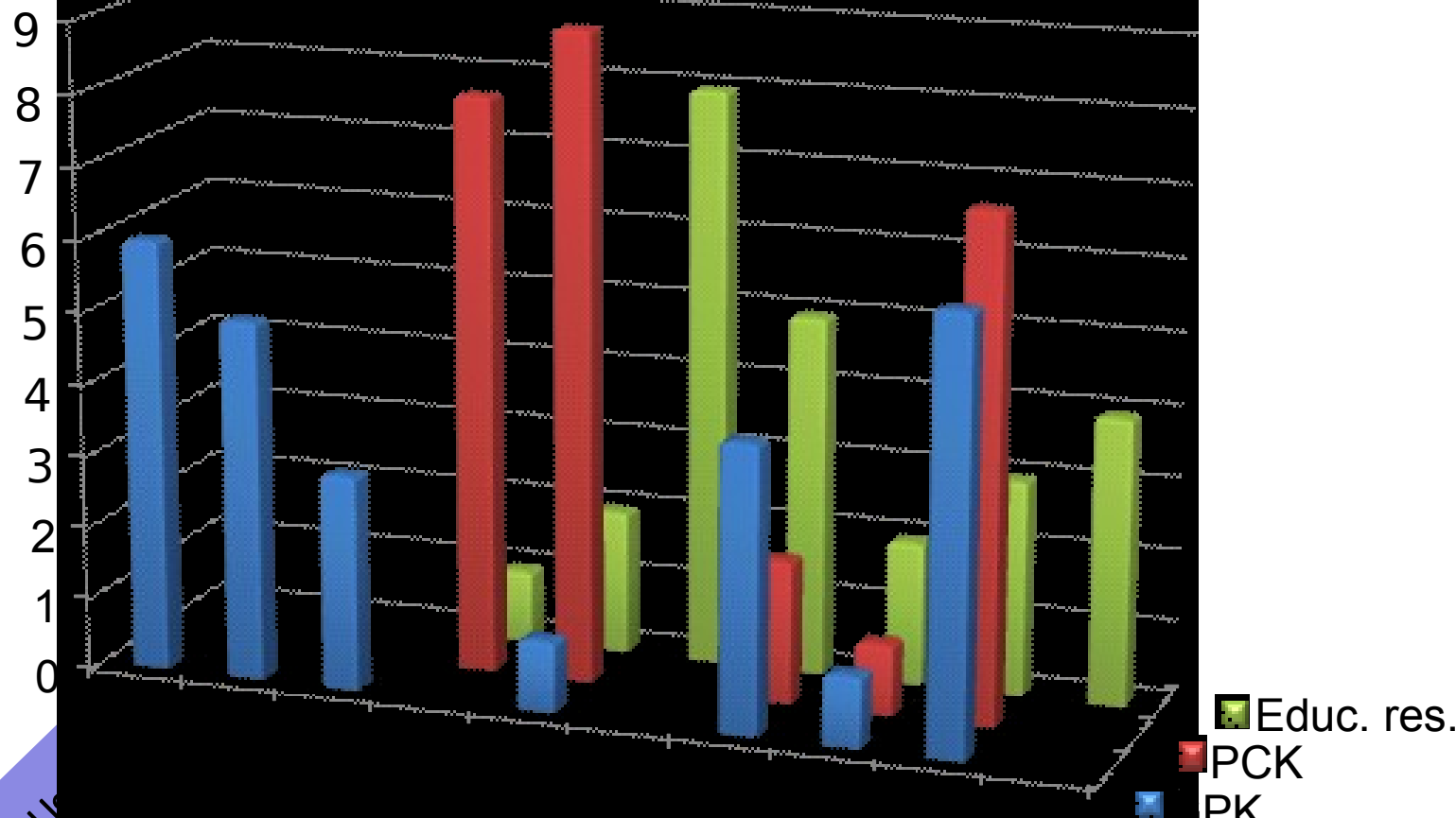
The main categories of the contents

| Main categories | Definition | Examples of original expressions *) |
|---------------------------------------|---|---|
| learning of an individual | Student teachers learn to guide students at school to learn knowledge or skills through teaching and learning activities | <ul style="list-style-type: none"> - School as a learning and operating environment GPK - Student teachers learn to use versatile teaching methods, information and communication technology in chemistry and physics (Eval.) PCK |
| different needs of students | Student teachers learn to take into account different needs of students and learn to identify their learning difficulties | <ul style="list-style-type: none"> - Student teachers learn to identify different kinds of learners (B_prac.) - Student teachers learn to identify pupils' learning difficulties (Spe.) |
| learning (and development) of a group | Student teachers learn to guide students at school to acquire knowledge or skills through co-operative teaching and learning activities | <ul style="list-style-type: none"> - Student teachers become familiar with the development of a group (Psy.) |

Output of the analysis

| | GPK (25) | PCK (27) | RES (25) |
|-------|--|---|--|
| Psy | learning (and development) of a group (5) skills for interaction (1) | | |
| Spe. | different needs of students (4) learning (and development) of an individual (1) | | |
| Phil | school – society link (3) | | |
| Cur. | | learning of an individual (3) school – society link (2) learning of a group (1) use of ICT in learning (1) design teaching based on nature of science (1) | reflection (1) |
| Eval. | school – society link (1) | learning of an individual (4) school – society link (4) design teaching based on the nature of science (1) | reflection (2) |
| Sem | | | consuming educational research (4) producing educational 22 |

Number of single aims, recognised based on the analysis of course descriptions (pedagogical studies)

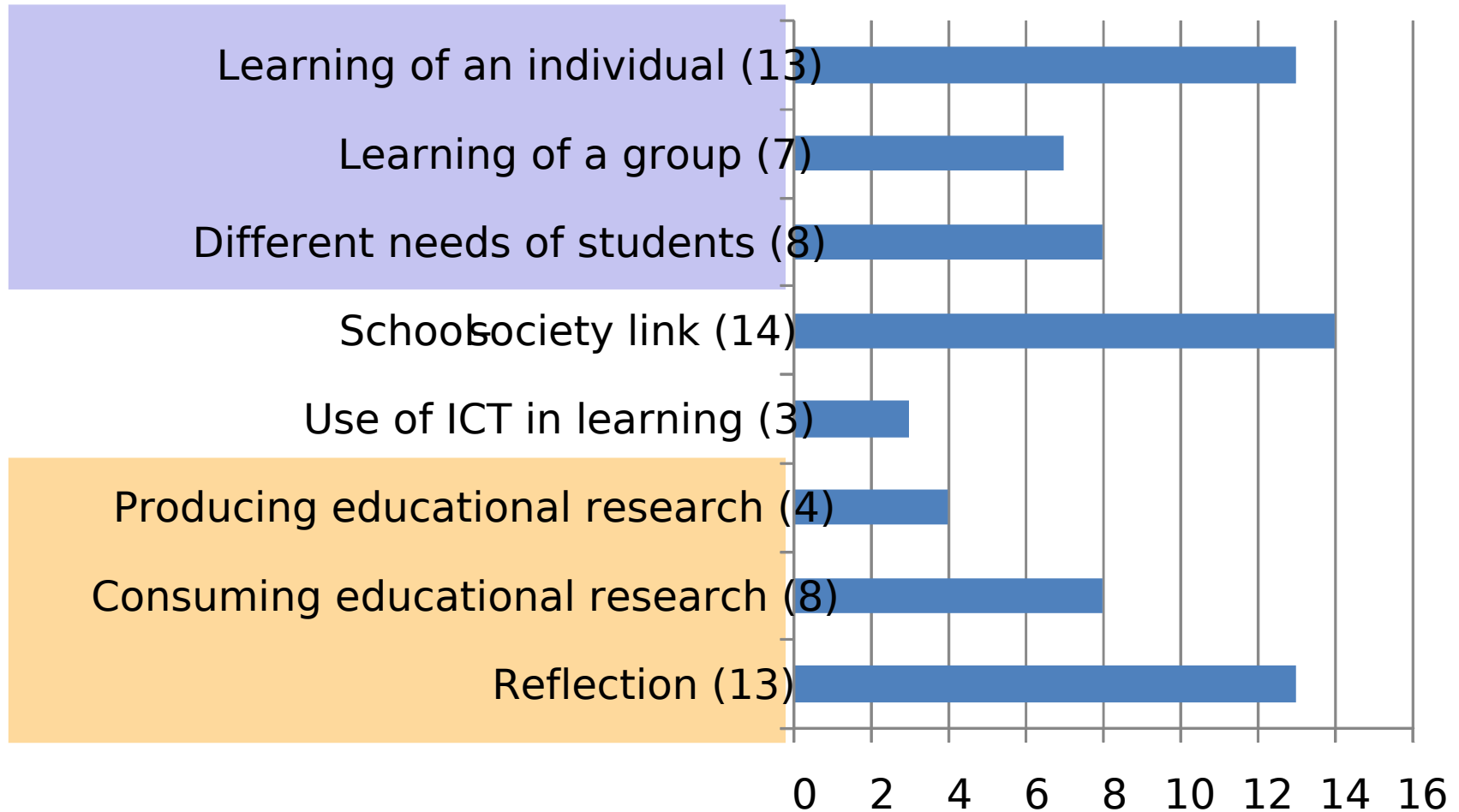


From the point of view of the origins of teacher knowledge:

- 45 of the aims were emphasising professional (theoretical) knowledge and
- 33 of the aims were emphasising practitioner (practical) knowledge



Number of different aims in the curriculum of the pedagogical studies



Helsinki, February 2011, 12:00



Discussion and conclusions



Pedagogical studies

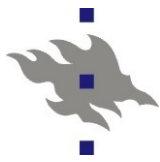
- consists of :
 - general courses in education, including ed. research;
 - pedagogical courses: teaching a specific subject and
 - teaching practice.

- help the students to integrate
 - subject knowledge,
 - knowledge about teaching and learning and
 - school practiceinto their own personal pedagogical theory (professional teacher with a solid knowledge base)



The structure of teacher knowledge in the programme

- *General Pedagogical Knowledge (GPK)* is learned during the general educational courses and, the course in subject pedagogy and also during the teaching practice.
- *Pedagogical Content Knowledge (PCK)* or at least readiness to develop it is learned during the subject pedagogy courses and especially during the teaching practice.
- Aims related to *student teachers' ability to support their students at school to learn knowledge and skills* was mentioned most frequently as an aim in the programme.



The origins of teacher knowledge in teacher education: Programme appreciates both practitioner and professional knowledge

- Professional knowledge is learned through courses, academic books and making pedagogical research.
- During the teaching practice, the students
 - apply knowledge and skills acquired in theoretical studies
 - plan teaching sessions in small co-operative groups
 - evaluating one's actions through reflective activities
 - collect empirical data, based on research questions, analyse the data and write a pedagogical dissertation.
- However, it is challenging for students to combine practical and professional knowledge (Hiebert et al., 2002).



The research orientation in Finnish teacher education programme

- Altogether 30% of the aims were linked to the research orientation
- Finnish student teachers
 - are **critical consumers of research knowledge** while they read academic books and conceptualise their teaching practice experiences
 - engage in reflective activities which have characteristics of 'research making' and collaboration,
 - **producers of educational research** while they engage in their pedagogical research project.
- The research orientation aims to enhance student teachers' capacity for independent critical thinking (in planning and assessment) and life-long-learning



Conclusions

- Awareness of structural and epistemological (origin of the knowledge) assumptions underlying the teacher education programme:

Emphasis also to the origin of knowledge when designing the programme