Creating and implementing a new strategy for educating teachers for 21st century through national level collaboration and brainstorming

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Principles of organising education

Governing education in a complex world © OECD 2016

- **There is no right system for organising education**
- Rather than analyse on structures - **analyse processes** in the international comparisons

- **Characteristics of an *effective education ecosystem*:**
  - Competent teachers, principals, etc.
  - Continuous professional learning
  - Shared understanding:
    - where to go (aims) and
    - how to go there (guidelines)
  - Open dialogue, interaction and collaboration

1. Finnish education context
2. Current teacher education practices
3. What should be emphasised in education?
4. Continuous improvement of teacher education

Characteristics of Finnish Education Ecosystem

Laukkanen (2008), Niemi et al. (2012), Sahlberg (2011)

1. **Shared vision**
   - long-term shared vision for good education
   - collaboration culture

2. **Equity** in educational
   - education is free (books, meals, health care, …)
   - well-organised special education and counselling (17-20% of the students have special needs)

3. **Quality** through **decentralisation**
   - leadership, quality work at city and school level
   - local planning, like local curriculum and assessment at classroom level

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Different approaches to teacher professionalism / effectiveness

- A professional / an effective teacher is a complex and contradictory concept *(Cruickshank & Haefele, 2001; Stronge & Hindman, 2003; Goe, Bell & Little, 2008)*

  Instead of a professional/effective a "competent", an "expert", a "quality", an "ideal" etc. are used

INPUT

- The "professional teacher" has a solid knowledge base act as an expert and this is supported by
  - the state policy and
  - the school site environment

OUTPUT

- Effectiveness of the "effective teacher" is seen in the learning outcomes, measured e.g. by a standardised tests.

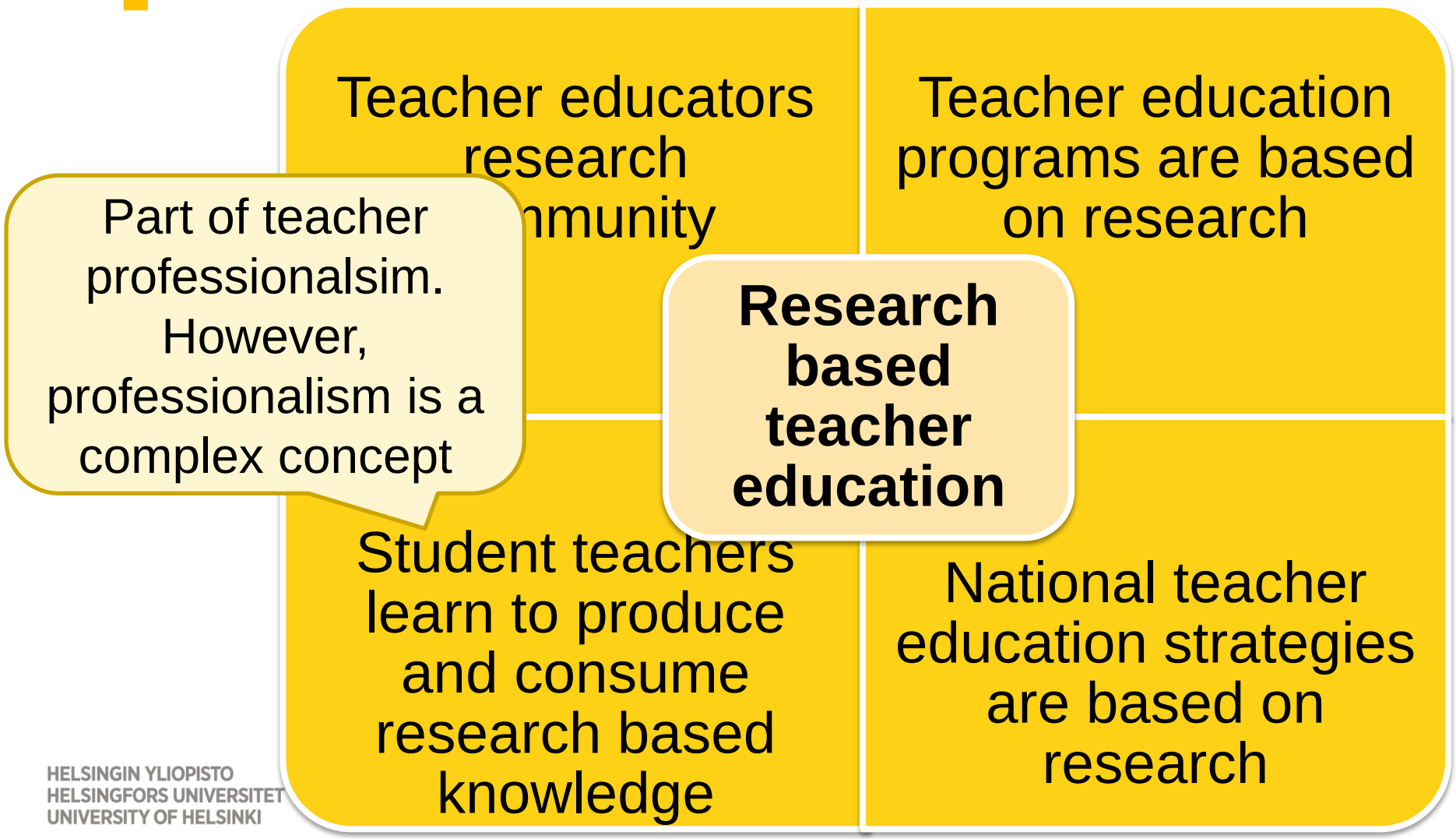
Finnish and opposite trends …

	Finnish professional teacher	Effective teacher (an example)
Teacher Qualification	Masters degree,	e.g. National test (accreditation) for outh-Korea
Teacher standards		professional eachers
Assessmen teachers (appraisal)		sal and writing of ets (S. Korea)
Inspectors	N pectors	Inspection in England
Testing	No-national or district testing (final examina-tion in high school)	Teachers are valued based on their students' success in tests

Pre-conditions for teacher autonomy (Darling-Hammond)**:**

- Highly educated teachers
- Common vision
- Culture of collaboration

All teacher educators do research – All researches teach



A secondary (subject) teacher

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

An primary (elementary) school teacher (a class teacher)

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

Science teacher education at the University of Helsinki

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

Faculty of Educational Sciences

- Dept. of Education
- Teacher Training Schools

Faculty of Science
- physics
- chemistry
- mathematics
- computer science

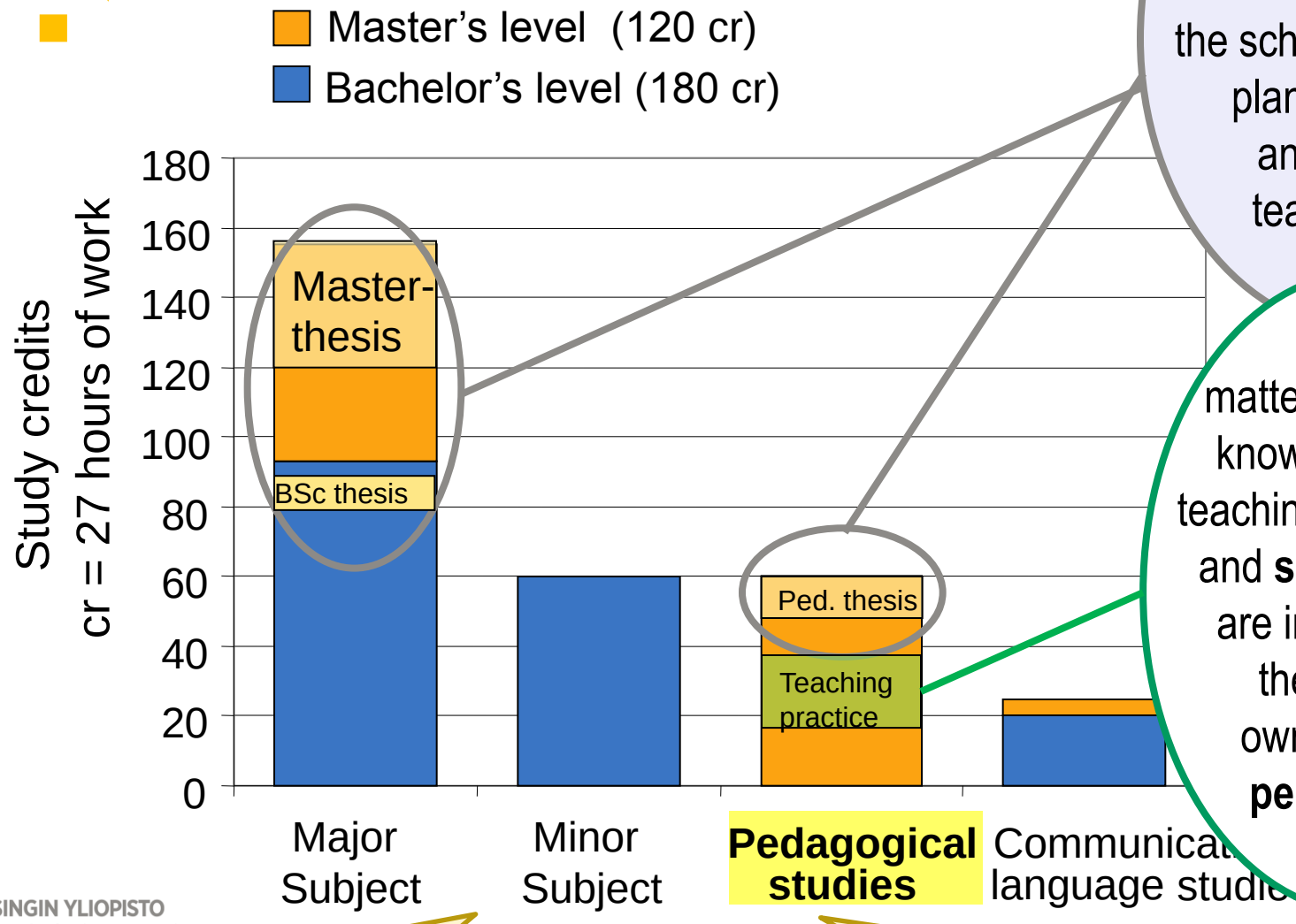
Faculty of Biosciences
- biology

Faculty of …

Secondary teacher education:
pedagogical studies + subject studies

Primary teacher education

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



Teachers benefit of the research orientation while they make the school curriculum, plan, implement and evaluate teaching and learning

Subject matter knowledge, knowledge about teaching and learning, and **school practise** are integrated into the students' own **personal pedagogical view**

At the faculty of Science

At the faculty of Education

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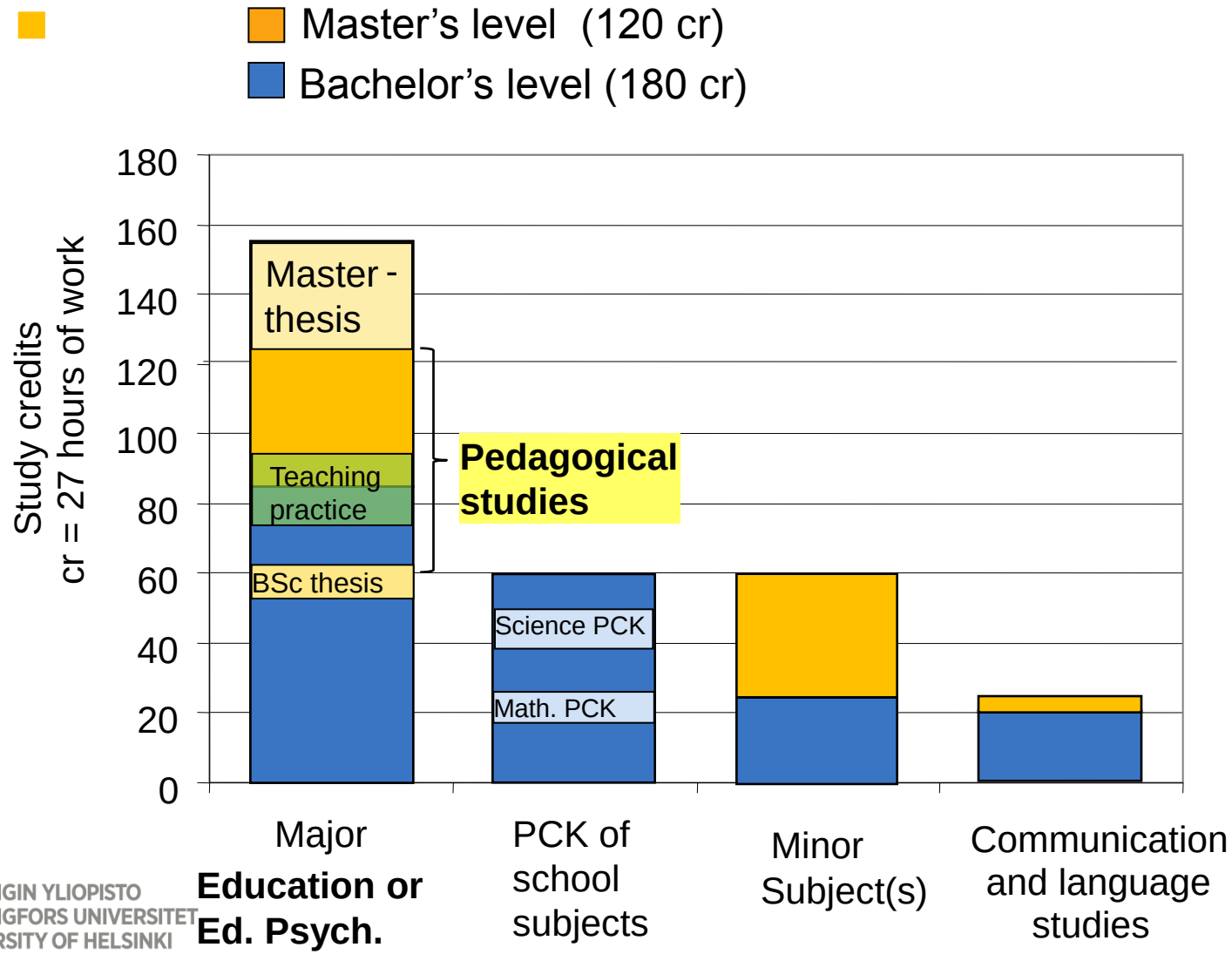
Structure of the master degree of a primary teacher: 3 + 2 years



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2. Current teacher education practices
3. **What should be emphasised in education?**
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Discussions during the preparation of the curriculum (2013-2015) and teacher education development programme (2016)


EU
EWR
CH
Bürger Citizen
easy
PASS
EU
EWR
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Bürger Citizen
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PASS
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0,69
0,49
IKEA
Jätä keltainen
tähän.


Getting on and off

- ***Tasks and roles disappear (~50% of the current jobs do not exist in 2040)***
- ***Tasks and roles change***
- ***New tasks and roles appear (we do not yet know them)***

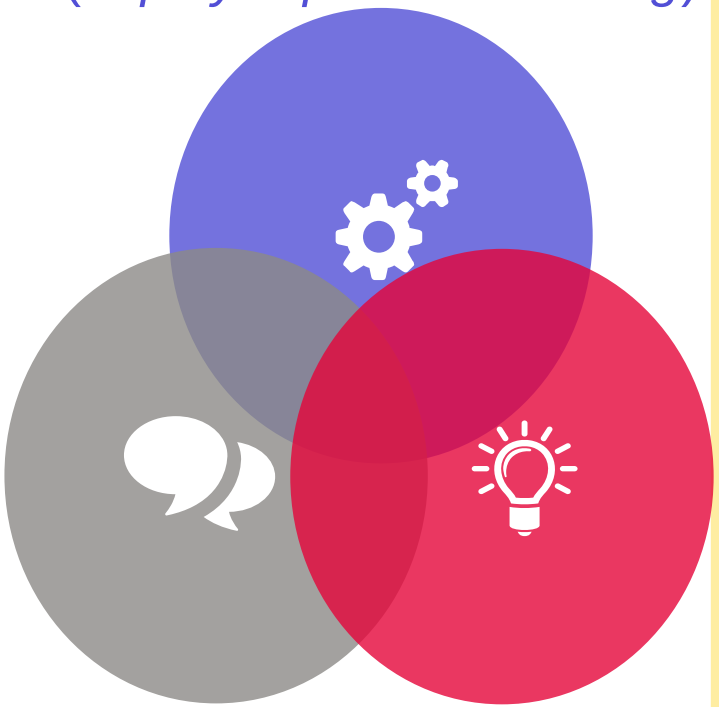
What competences should education systems foster according to OECD?

Basic competences

Know-what (*concepts, principles, processes*) and **know-how** (*inquiry & problem-solving*)

Behavioural and social competences or skills

Willingness to engage
self-confidence,
collaboration,
communication



Creative and critical thinking skills

+ use of metacognition...

OECD rubric on creative and critical thinking

	CREATIVE THINKING (Coming up with ideas and solutions)	**CRITICAL THINKING** (Questionning and evaluating ideas and solutions)
TEACHING		
REFLEC-TING		

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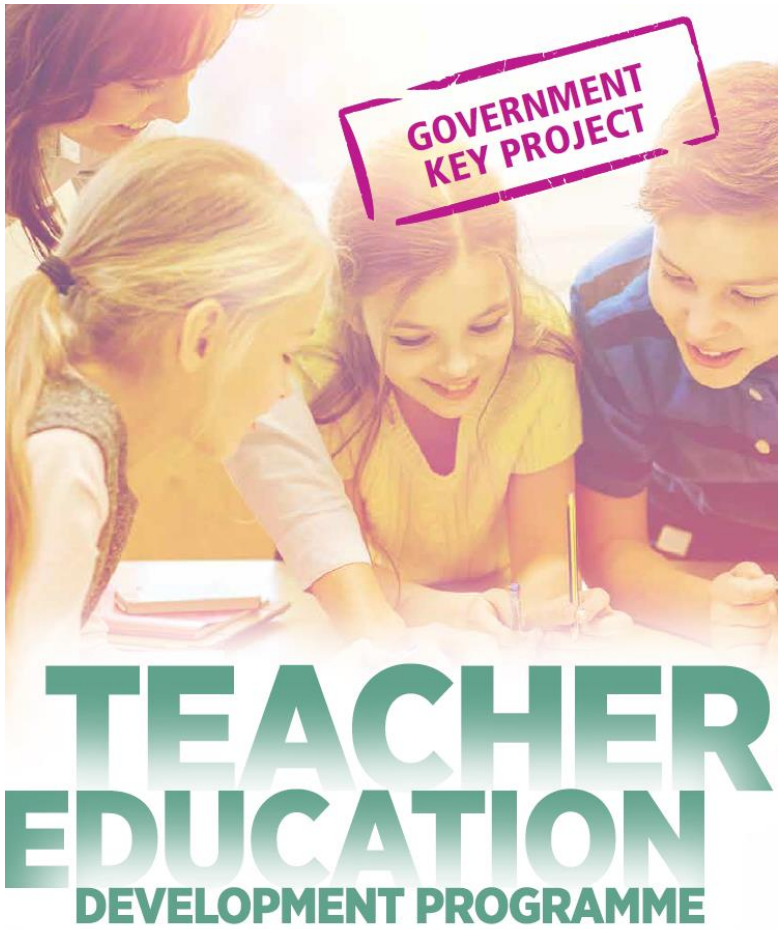
National Teacher Education Development Program as a part of Finnish government national reform program (2015 – 2018)



- **National Teacher Education Forum** (70 experts)
  - Literature review
  - Benchmarking
  - National brainstorming
  - Collaborative construction of
- **Teacher Education (TE) Strategy**
- **Implementation of TE strategy**

What is known about the successful strategy/reform process?

- **Looking for consensus through collaboration** with stakeholders, like city people, (Burns & Köster, 2016)
- **Support to professional learning** through active participation in **research oriented pilot projects:** goal-orientation, collaboration, networking, contextualisation, reflection, research orientation, … (Kitchen & Figg, 2011; Loughran, 2014; van Lankveld, Schoonenboom, Volman, Croiset & Beishuizen, 2017)
- **Communication channels for discussing the strategy and for implementation**: National and local level meetings, meetings of the pilot projects, platforms, social media, … (Rogers, 1995)

Successful reform implementation (OECD, TALIS)

- Careful timing
- Strive for consensus
- Engage stakeholders
- Partnership with unions
- Sustainable resources
- Careful piloting
- Dissemination of outcomes of the pilots

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Recognising of challenges in education from the point of view of science teacher education

Finnish science teachers' challenges (according to national monitoring and TALIS and PISA surveys)

Student-level

- Active learning processes and learning outcomes
- Students' engagement in learning and well-being

Classroom level

- Heterogeneous and multicultural classrooms
- Learning of generic/transversal competencies

School and city level

- Quality assurance
- Leadership, versatile learning environments.

Society level

- Better links with pre- and in-service STE
- Education for sustainable development
- Artificial intelligence, robotisation
- Drop outs

Literature review on teachers and teacher education

Some outcomes of the research on teachers and teacher education in various contexts
(Husu & Toom, 2017)

A GOOD TEACHER

- Good teaching/teachers have an impact to learning and well-being of students …. economic growth …

COHERENCE

- Importance of coherence in teacher education
  - shared understanding of the aims of the program
  - coherence between field experience and courses

DOMAINS AND ORIGINS OF TEACGER KNOWLEDGE

- Pedagogy in line with aims of the program: learning from lectures/workshops/books and from practice

TEACHERS' PROFESSI-ONAL LEARNING

- Teachers should be willing and able to learn continuously new competences, e.g. for inclusion, entrepreneurship, networking and co-teaching, coming from the needs of the society.

Domains of teacher knowledge

Domains of teacher knowledge

A professional teacher has a <u>versatile knowledge base</u>, which allow him or her to <u>act as a professional</u>.

Classical knowledge base consists:

- subject matter knowledge,
- pedagogical content knowledge PCK,
- pedagogical knowledge,
- contextual knowledge,
- curriculum knowledge,
- …
- community knowledge

… *WHAT ELSE?*

(Shulman 1986, 1987; Gess-Newsome & Lederman, 1999; Hashweh, 2005)

Teacher knowledge (Panticin & Wubbelsin; 2010)

VALUES	Values of education
EDUCATION ECOSYSTEM	Understanding of education system or ecosystem and how it is developed
DOMAINS OF TEACGER KNOWLEDGE	Subject matter knowledge, pedagogical knowledge, curriculum knowledge
TEACHERS' PROFESSI-ONAL LEARNING	Self-evaluation skills and competence for professional learning

Teacher knowledge from the point of view of classroom interaction and learning

(Lonka, Hakkarainen, Lakkala, 2010; Kereluik et al., 2013; Hattie ja Jaeger, 2003; Hattie, 2012):

LEARNING THROUGH SUPPORTIVE PEDAGOGY

INTERACTION

FEEDBACK

INTEREST ⇳ LEARNING

CHALLENGE

- Support to the learners in integration of knowledge to previous knowledge through employing good pedagogy
- Guiding learning through classroom interaction
- Monitoring learning and giving feedback
- Taking into account affective dimensions supportive for learning; respect for pupils; passionate attitude towards teaching and learning.
- Providing suitable challenges for learners; emphasising learning and self-regulation skills; developing self-confidence and self-esteem.

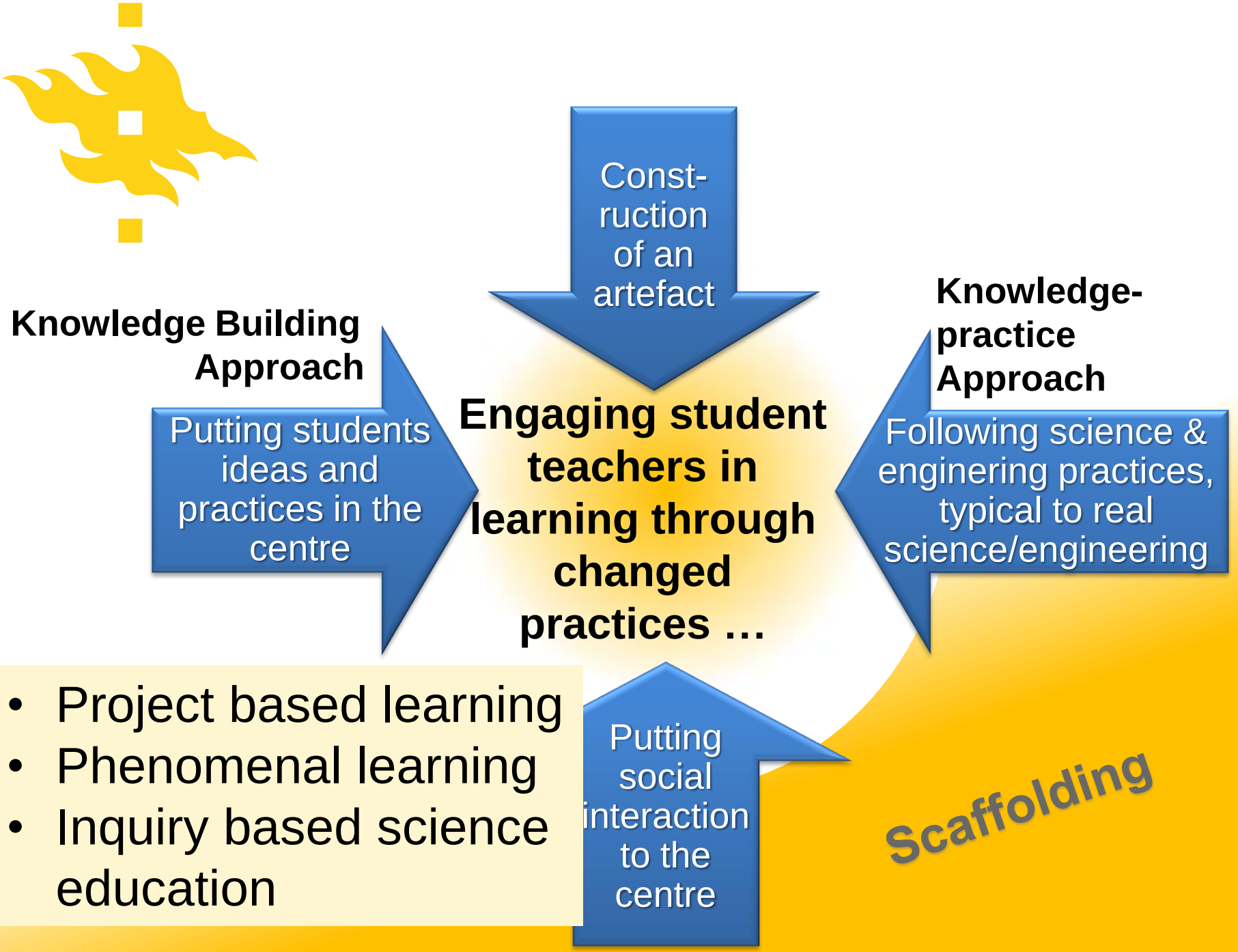
Origins of teacher knowledge

Origins of Teacher Knowledge (Where the knowledge of an expert is coming from?)

- From the point of view of origins of knowledge, the knowledge could come from (Hiebert et al., 2002):
  - practice
    - experience (Dewey, 1938)
    - practice with feedback (Gagne, 1985)
    - reflective practice (Ericsson, 2001)
  - professional (theoretical) sources of information
    - academic books
    - Lectures, workshops,…
    - own research
  - **informal situations (like community situations)**
  - Combination

Flipping Department of Mathematics upside down!

Culture of collaboration at the Faculty of Education



- Project based learning
- Phenomenal learning
- Inquiry based science education

Coherence in teacher education

Coherence in teacher education

Tatto, M. T. (1996). Examining values and beliefs about teaching diverse students: Understanding the challenges for teacher education. *Educational Evaluation and Policy Analysis, 18*, 155–180.

Grossman, P., Hammerness, K., McDonald, M., & Ronfeldt, M. (2008). Constructing coherence: Structural predictors of perceptions of coherence in NYC teacher education programmes. *Journal of Teacher Education, 59*, 273–287

Shared understandings among faculty members:

- the aims of the teacher education program,
- organization and structure of the program.

⇨ Possibility to educate professional teachers with the knowledge and skills necessary to teach competences emphasized in the curriculum to diverse students.

Shared vision is needed in teacher education in order to offer

- courses within a programme,
- clinical experiences (teaching practice)

⇨ Courses and practice support such a vision.

But …

It is not easy to argue what kind of knowledge (competence) a teacher need, because understanding of teacher knowledge (competence) depends on

- how we understand **students' learning** and well-being
- how we understand **teacher professionalism**
- how teachers' **professional learning**/ development and teachers' collaboration is organised
- how we understand a school as a **learning community** (school development)
- how education policy is done and implemented
- …

Benchmarking neighbour countries

In Sweden for a Degree of Master of Arts/Science at secondary level the student shall demonstrate ..

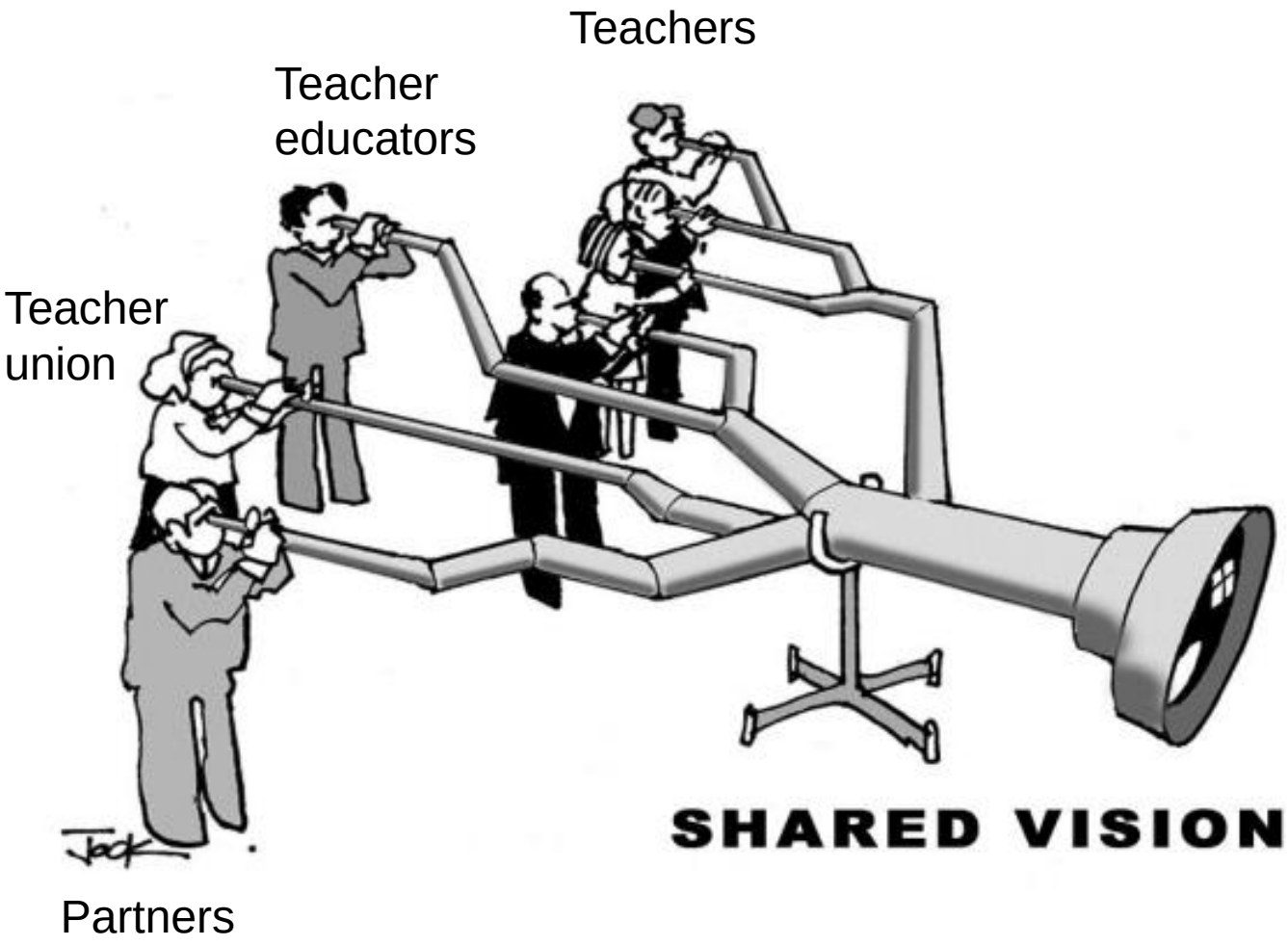
- the knowledge and skills required to work autonomously as a teacher ...
- …. as well as insight into current **research and development work**
- … capacity to create conditions in which all pupils can learn and develop (skill)
- the capacity to plan, implement, evaluate and **develop teaching and educational processes individually and together with others** …
- …

In Norway the learning outcomes defined as knowledge, skills and competence, for work in elementary 1 – 7 grade are for a conadidate:

- ... academic knowledge and knowledge on **scientific thinking and research methods**
- ... take responsibility for developing and leading inclusive, creative, safe and healthy learning environments (skill)
- can contribute to both colleagues and the **school's professional and organizational development**
- ...

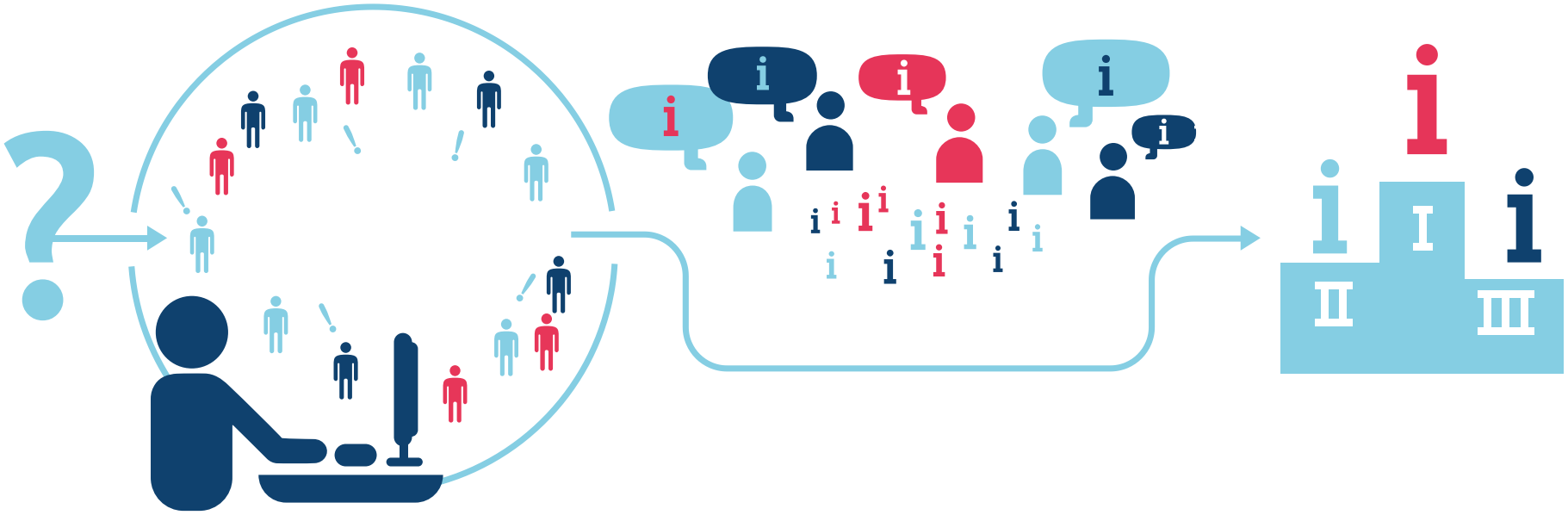
National brainstorming

National brainstorming as a part of teacher education development program

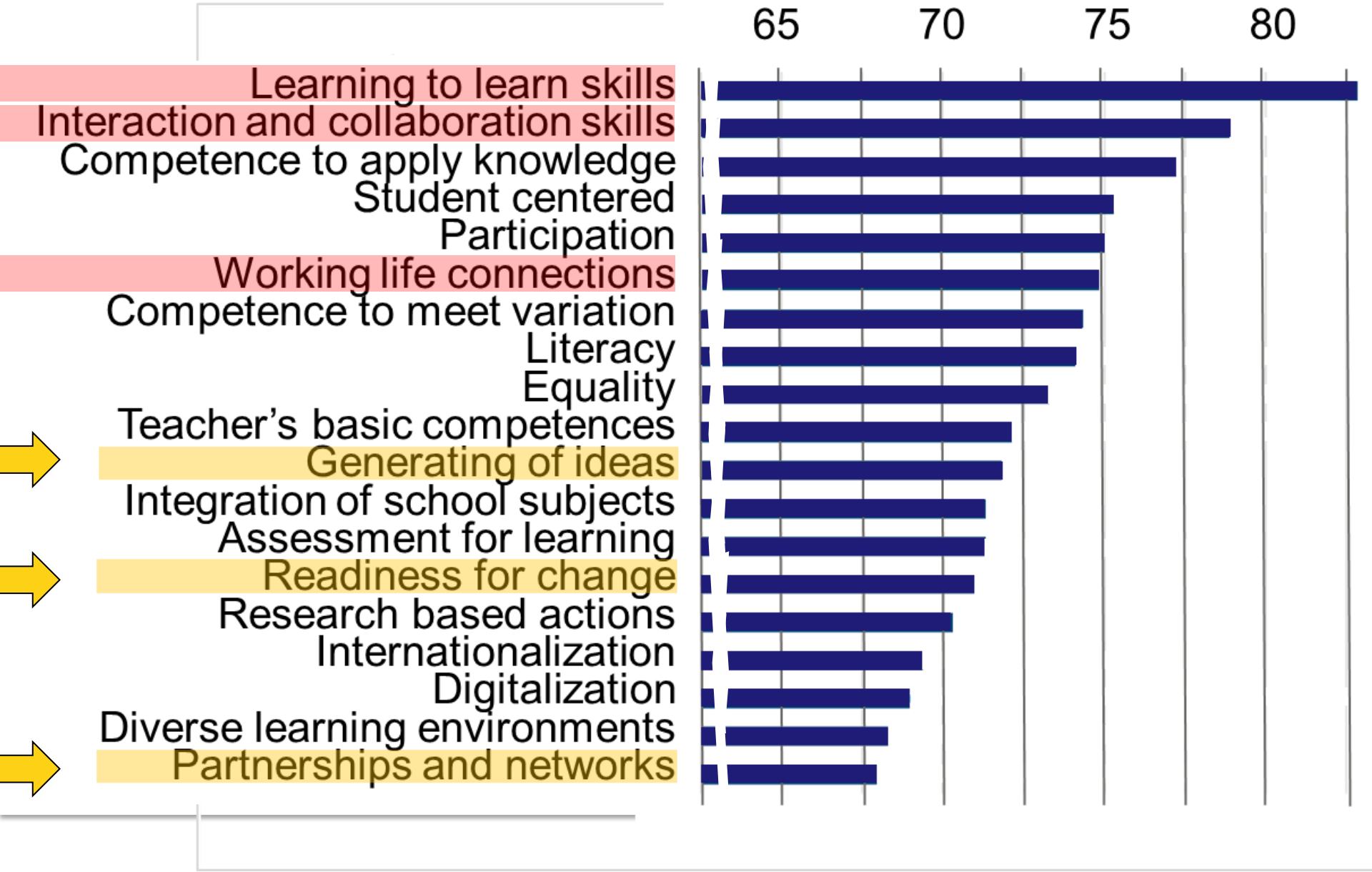


Teacher education should be based on a clear, shared vision

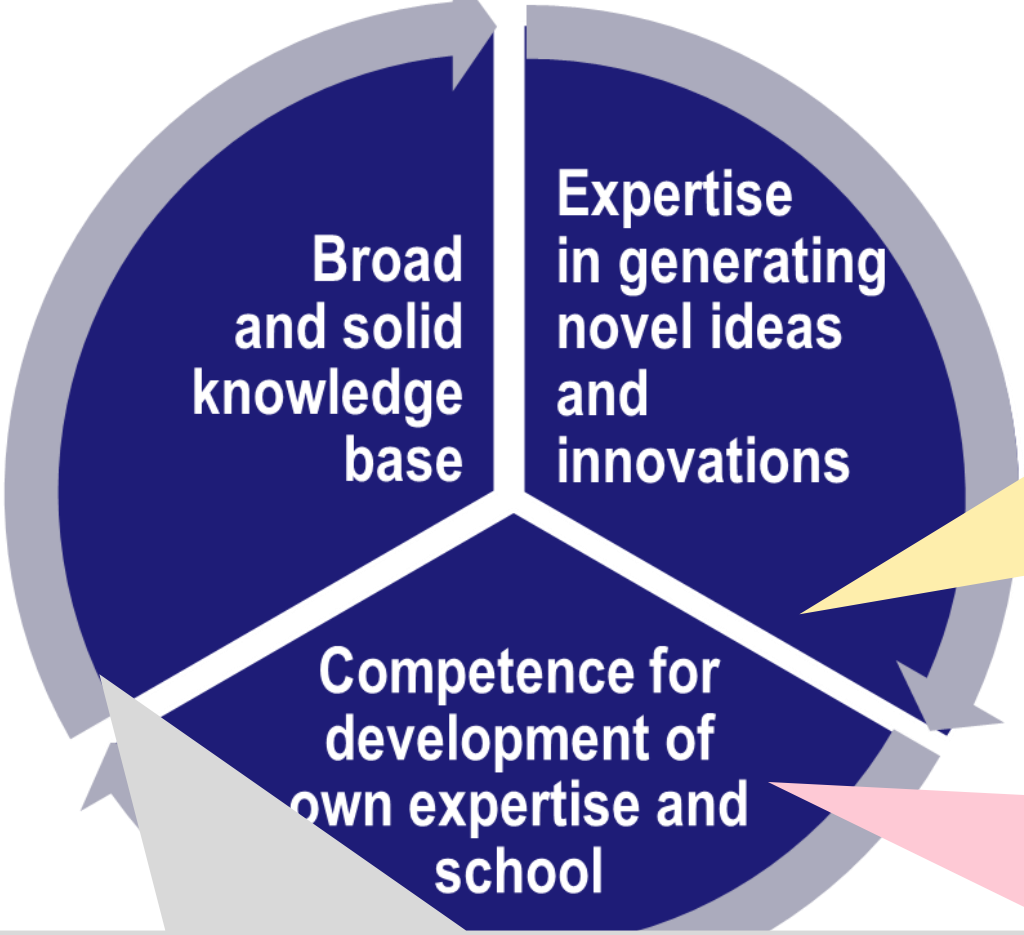
Virtual brainstorming



Important in the development of teacher education



TEACHER EDUCATION DEVELOPMENT PROGRAMME



- Curriculum knowledge and skills
- Design and adoption of educational inno-vations, like learning environments and inclusive classrooms

- Development of the school culture with students, parents, and stakeholders.
- Willingness and competence for the development of own expertise through …

- Knowledge in subject matter, PCK, GPK,
- Learning, engagement, diversities,
- Collaboration and interaction, Networking
- Research skills
- Ethical code…

Australian Professional Standards for Teachers

- **Professional knowledge:** knowledge about students and how they learn and knowledge about content and how to teach it;
- **Professional practices**: plan and implement effective teaching and learning, create and maintain supportive and safety learning environment, assess, provide feedback and report on student learning, and
- **Professional engagement**: which include teachers' own engagement in professional learning and professional engagement with colleagues, parents and the community.

the UK Teachers' Standards (Department for Education, 2011)

Teachers focus to the high quality education of their pupils and are competent to

- set high expectations which inspire, motivate and challenge pupils;
- promote good progress and outcomes by pupils;
- demonstrate good subject and curriculum knowledge;
- plan and teach well structured lessons;
- adapt teaching to respond to the strengths and needs of all pupils;
- make accurate and productive use of assessment;
- manage behaviour effectively to ensure a good and safe learning;
- fulfil wider professional responsibilities, like develop professional relationships with colleagues, …, communicate effectively with parents with regard to pupils' achievements and well-being

Six actions for the development of teacher education (meet the challenges)

1. Holistic view to teacher education

- pre- and in-service education and induction phase
- development plans for teachers, schools and districts in line

2. Selection of students …

3. Supporting the development of competences needed in generating novel ideas and innovations

4. Collaboration culture and networks

- subject department – teacher education – practice school
- kindergarten – primary – secondary – vocational teacher ed. …

5. Supportive leadership

- schools as learning communities

6. Research based teacher education

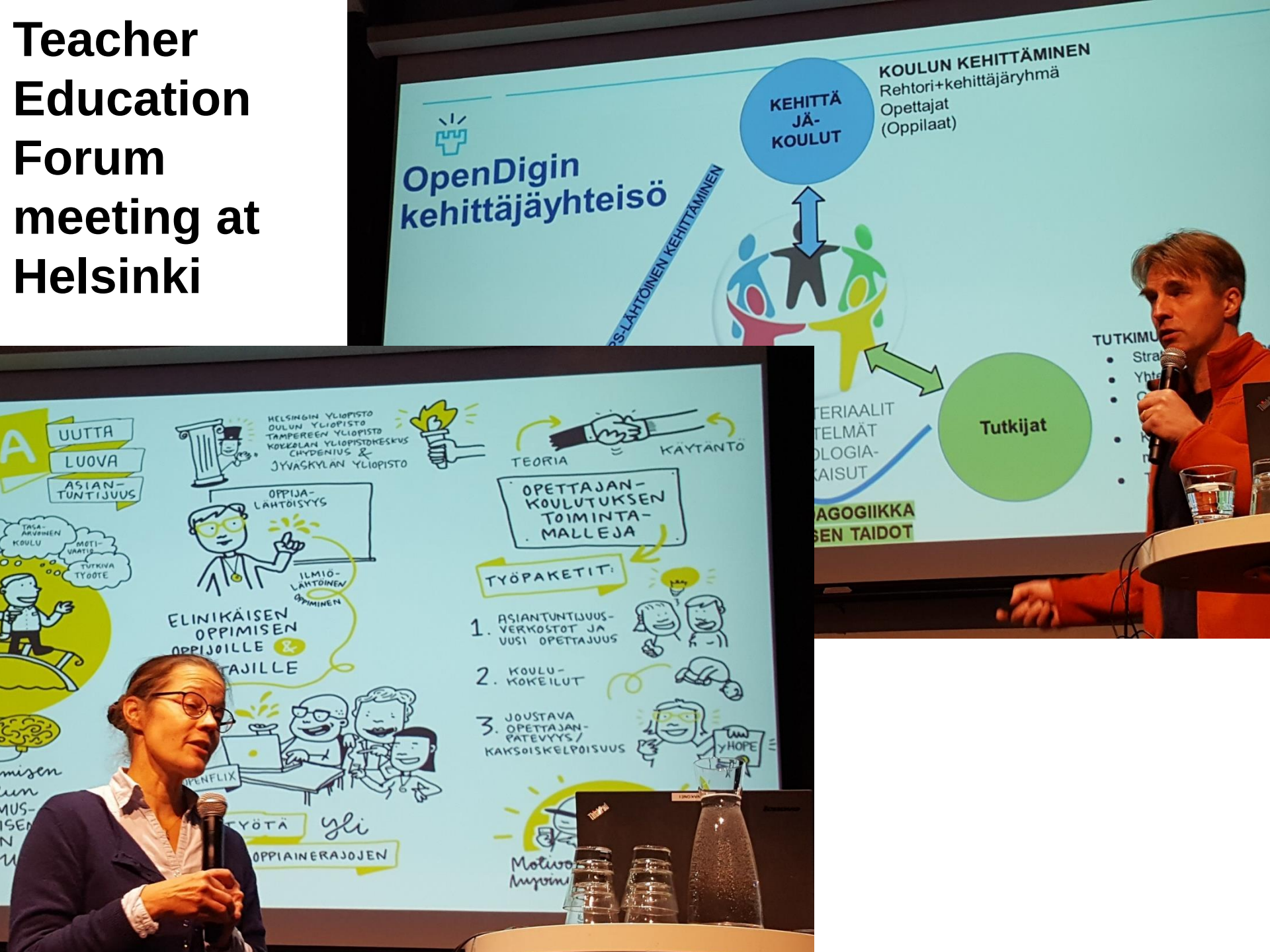
- training programs and teaching/learning are based on research
- student teachers learn research skills

Implementation of the development program

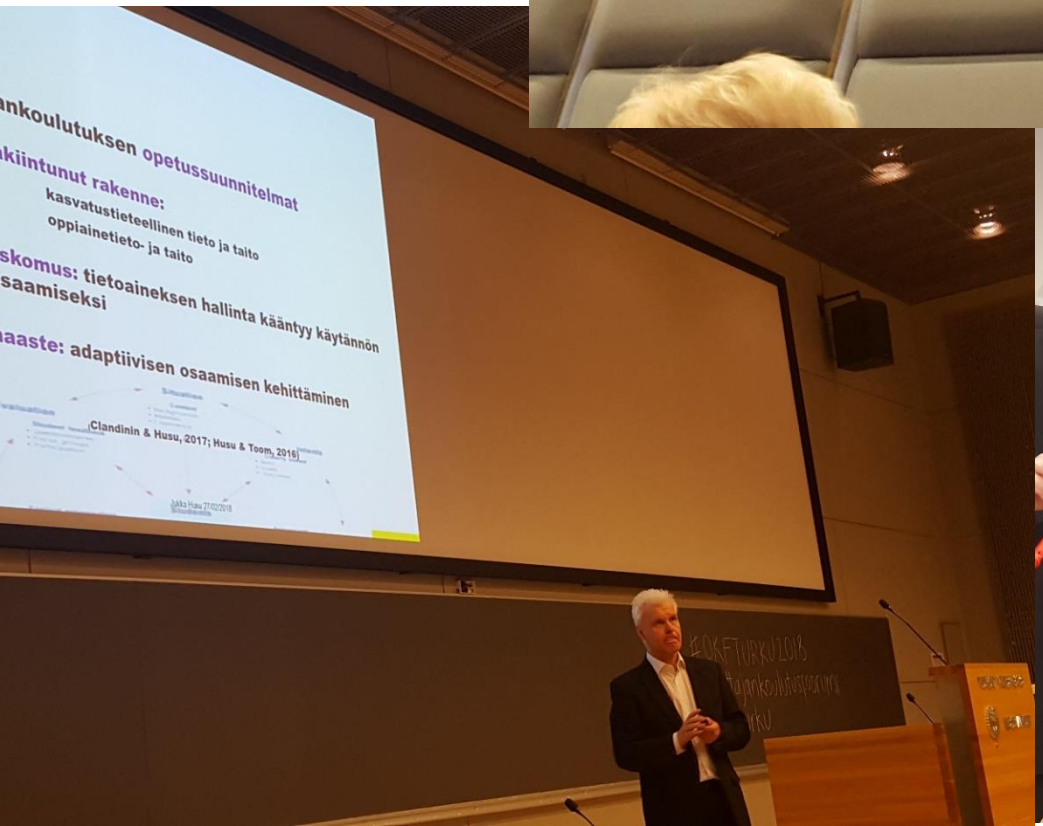
Implementation of the development program in practice

- Resources for 32 +20 pilot projects (30 M€), supportive for professional learning and implementation of the program
- In the call for pilot project proposals it was emphasised:
  - Collaboration inside the universities
  - **Collaboration between initial TE and schools, municipalities, professional development programs**
  - Research orientation in the pilot projects
  - International collaboration
- National and local seminars and meetings
- Continuous self-assessment (quality assurance)

Teacher Education Forum meeting at Helsinki



Local meeting at Turku



Education Research Conference at Tampere

Monitoring of the progress

Self-evaluation of the pilot project activities

Based on the monitoring and self evaluations …

- The pilot projects have been
  - focusing to the strategic aims of the *Teacher Education Development Program* and
  - supporting the implementation of the six actions.
- Most of the aims in the pilot projects were achieved well or very well
- Directors and partners feel that the activities in the pilot project have been supportive to teacher educators' professional learning and to the implementation of the strategic aims.
- Focus in next actions is the implementation of the pilot project outcomes to the Teacher Education Programs and activities in the classrooms.

How local teacher education programmes should be designed?

What is essential in a national reform or development program?

Collaborative design of a coherent (science) science teacher education programme

Research orientation is seen in the planning of the programs

Research on
teaching and learning, engagement, development and needs of learners, policy, history, ... → **Content to the program**

Research on teachers and teacher education
- Professional/effective teacher,
- Structure and origins of teacher knowledge,
- Teacher identity, agency, ...
- University pedagogy. → **Type of activities**

Collaborative development of the Programme

International and National strategies
- Teacher education strategy,
- National level curriculum; Forms and role of assessment.

Feedback
- Students' learning outcomes and evaluations,
- Staff members' self-evaluations of the programme,
- Municipality stakeholders' feedback.

In planning and implementing strategies it will be important to:

- have good timing, enough time for planning and implementation of the program or strategy;
- engage teachers and teacher educators, and stakeholders, like city people**,** employ organisations, and teacher unions to the strategy work;
- strive for consensus in the design and in the implementation;
- serve sustainable resources for the planning and implementation of the development program;
- organise research oriented pilot projects which support professional learning of teacher educators and dissemination of the outcomes;
- organize continuous quality assurance processes;

THANK YOU!