

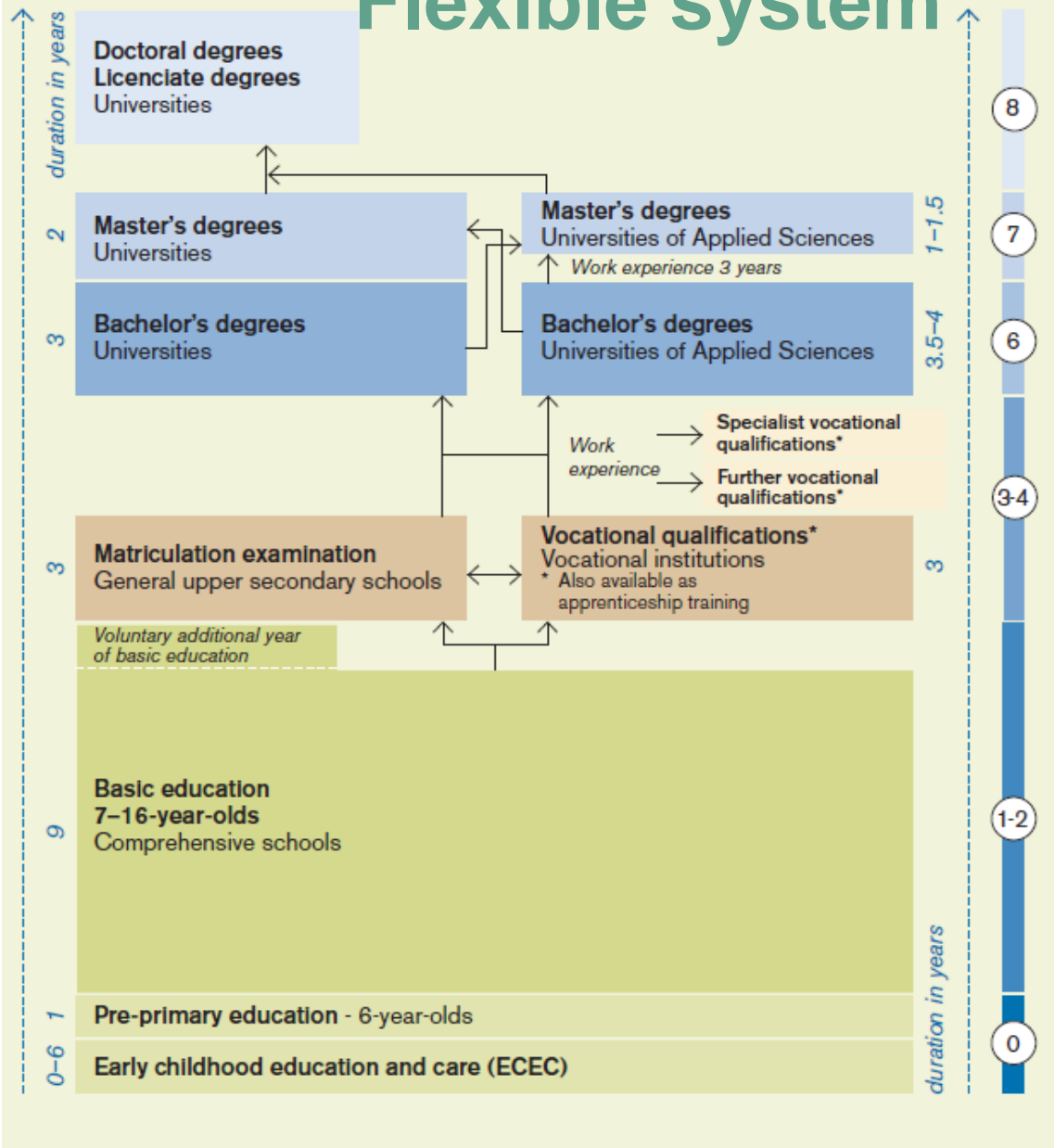
The role of education in the 21st century economy: Lessons learned from the Finnish experience

Athens, Wednesday, 14 December 2016

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Ministère de l'Éducation, des sciences et de la culture**

Flexible system



LIBERAL ADULT EDUCATION

- Open University education
- Open Universities of Applied Sciences education
- Adult education centres
- Folk high schools
- Summer universities
- Study centres
- Sports institutes

• **The education system gives each student great flexibility.**

• **Binding decisions are not expected to be made at an early stage.**

• **The road all the way to tertiary education is untracked, with none of the paths leading to a dead end.**

ISCED-classification 2011

- 0 Early childhood education
- 1 Primary education
- 2 Lower secondary education
- 3 Upper secondary education
- 4 Post-secondary non-tertiary education
- 6 Bachelor's or equivalent
- 7 Master's or equivalent
- 8 Doctoral or equivalent

Our greatest strength: human resources

WEF Human Capital Index rankings 2016	European Innovation Scoreboard 2016	WEF and INSEAD The Networked Readiness Index 2016	INSEAD, WIPO Global Innovation Index 2015 Government Effectiveness	OECD PIAAC, average adult skills in literacy, numeracy and problem solving	OECD PISA 2015 Science	U21 Ranking of National Higher Education Systems 2016
1. Finland	1. Sweden	1. Singapore	1. Finland	1. Finland	1. Singapore	1. United States
2. Norway	2. Denmark	2. Finland	2. Singapore	2. Sweden	2. Japan	2. Switzerland
3. Switzerland	3. Finland	3. Sweden	3. Denmark	3. Netherlands	3. Estonia	3. Denmark
4. Japan	4. Germany	4. Netherlands	4. Sweden	4. Japan	4. Chinese Taipei	4. U. Kingdom
5. Sweden	5. Netherlands	5. Norway	5. Norway	5. Norway	5. Finland	5. Sweden
6. New Zeal.	6. Ireland	6. Switzerland	6. Switzerland	6. Australia	6. Macao China	6. Finland
7. Denmark	7. Belgium	7. U. States	7. Canada	7. Denmark	7. Canada	7. Netherlands
8. Netherlands	8. U. Kingdom	8. U. Kingdom	8. Netherlands	8. Belgium (flan.)	8. Vietnam	8. Singapore
9. Canada	9. Luxembourg	9. Luxembourg	9. New Zealand	9. Canada	9. Hong Kong	9. Canada
10. Belgium	10. Austria	10. Japan	17. Hong Kong	15. Slovakia	10. P-S-J-G China	10. Australia

B-S-J-G (China) refers to the four PISA-participating China provinces: Beijing, Shanghai, Jiangsu and Guangdong.

The results are good

- Finland performs well in comparisons that measure growth potential and structural competitiveness in the medium and long term.
- The development of education has been guided by a broad-based concern for looking after our human resources. Finland has successfully combined **excellent learning outcomes with equality and efficiency**.
- **The whole chain of competence has worked well** – effective private and public institutions, good health care, sound basic education and higher education, learning at work, high public and private investments in R&D with strong linkages between universities and industry as well as the capacity to innovate are all aspects of Finland's strengths in competitiveness studies.

Why that matters: *“Almost all of the variations in economic growth rates across nations can be explained by differences in knowledge capital. – what counts for economic outcomes is the knowledge and skills of the population proxied by constant international tests scores such as PISA and TIMSS”.* (Eric A. Hanushek 2016)

Our success strategy

Human resource perspective

**Innovation and
sophistication factors**

Smart specialisation (creative economy, cleantech, green growth)
policy of intangible valuation,
excellence in RDI, attractive RDI
environments, cultural diversity

Efficiency enhancers

Higher education and training,
on-the job training, technological
readiness,
availability of private and public R&D&I
funding

**Basic
requirements**

Good governance, rule of law, strong institutions
(incl. art and science), macroeconomic
environment, security, predictability, basic
education, health, social cohesion, inclusiveness
and trust

Trust expressed by Finns in institutions

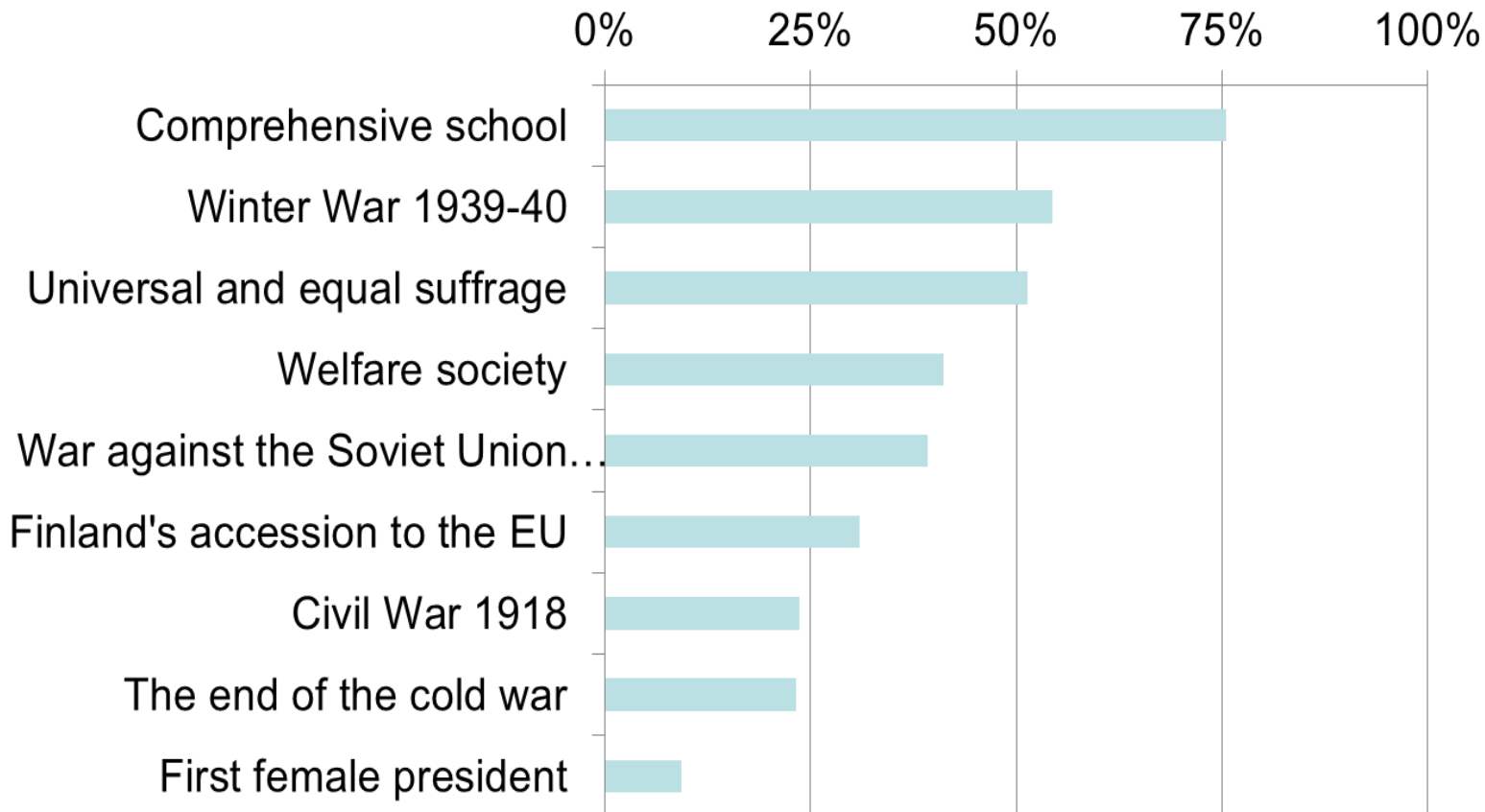
Ranking (% , very reliable)

Education system	90	Labour unions	50
Police	89	Parliament	47
Judicial system and courts	77	Government	45
Public health service	77	European Union	40
Defence forces	72	Church	40
Finnish enterprises	69	Local authorities	31
United Nations	59	Employers	31
Civic organisations	55	Media	29

Source: Kansan arvot. Taloudellinen tiedotustoimisto. T-Media 2014.

Education in our history

The most important events and phenomena in the History of Finland, references %



Lähde: Pilvi Torsti: Suomalaiset ja historia. Gaudeamus 2012.

Equal opportunities for all

Professional – teachers from pre-primary class all the way to university level are highly qualified

Empowerment – the education system's administration is strongly based on school autonomy and support

Supporting – Each student's learning and welfare is extensively supported and tailored to individual needs

Effective – good learning outcomes are achieved at just average expense

Co-operation – administrative organs at different organisational levels collaborate actively

Partnership and commitment – public-private-partnership and stakeholder involvement

Flexible – the education system gives each student great flexibility

Encouraging – evaluation of learning outcomes is based on national surveys

Forecasting and research: continuous foresight in education, development based on assessments and research and broad-based formulation of reforms with stakeholders, researchers and other experts.

The Finnish approach

- **Human resources:** we will achieve sustainable economic growth and well-being if we utilize the reserves of talent among the nation as a whole
- **Creativity** is diverse and belongs to all. It is an integral part of our everyday lives, social activities, science, art, education, working life and business
- Our education policy aims towards **learning environments which give room to natural curiosity and creativity of students**, and the varying special skills and abilities of individuals
- Encouraging creativity in the early childhood and basic education lays the foundation for success in later life

Tough, centralized leadership and testing may not be ideal for encouraging creativity

- The culture and practices of Finnish education are based on trust and a high level of professional skills among teachers
- Teachers and schools have a great deal of local autonomy to find and create the best methods to help students learn
- Quality assessment seeks to support and develop learning – not to control or sanction.
- School days are short and student workload relatively light
- Individual learning is given plenty of support, and one size is not made to fit all. Focus is on flexibility and tailoring





Academically
qualified professional

TEACHERS

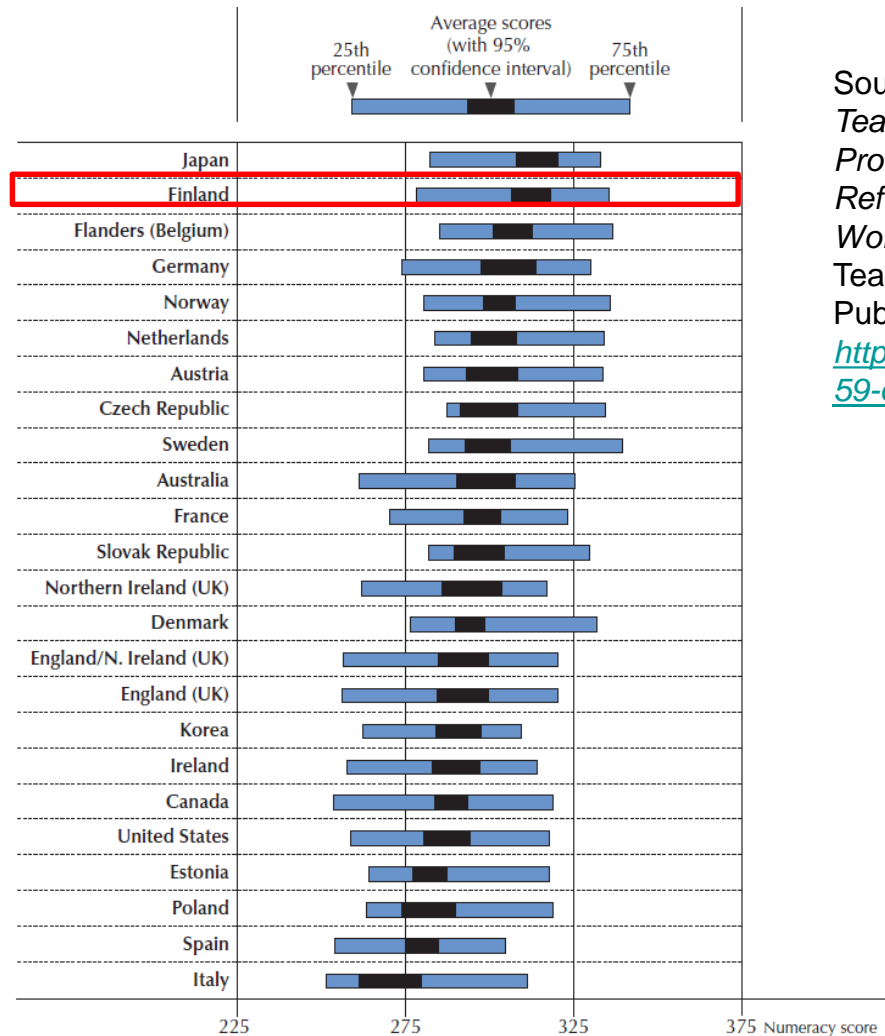
at all levels of education
support and encourage
students to succeed
in school.

Teachers as professionals of learning

- Teaching profession is **respected** and **popular** in Finland
- On all school levels, teachers are highly **qualified and committed**.
- Universities can select among the most motivated and talented applicants. On both primary and secondary levels **a Master's degree is required**, and teacher education includes teaching practice.
- The teaching **experiment** and interdisciplinary **research** connected to teaching practice aim to create an innovative and analytical attitude among prospective teachers
- Teachers are required to participate **in-service training** every year.
- Teachers work independently and have strong **autonomy** towards their work. There are no standards (but National Core Curriculum)
- The provision of teacher education is **spread evenly throughout Finland**.
- Teacher education is **well accepted also in business and other fields of work**.

Numeracy test scores of tertiary graduates and teachers

16-64 year-old tertiary graduates



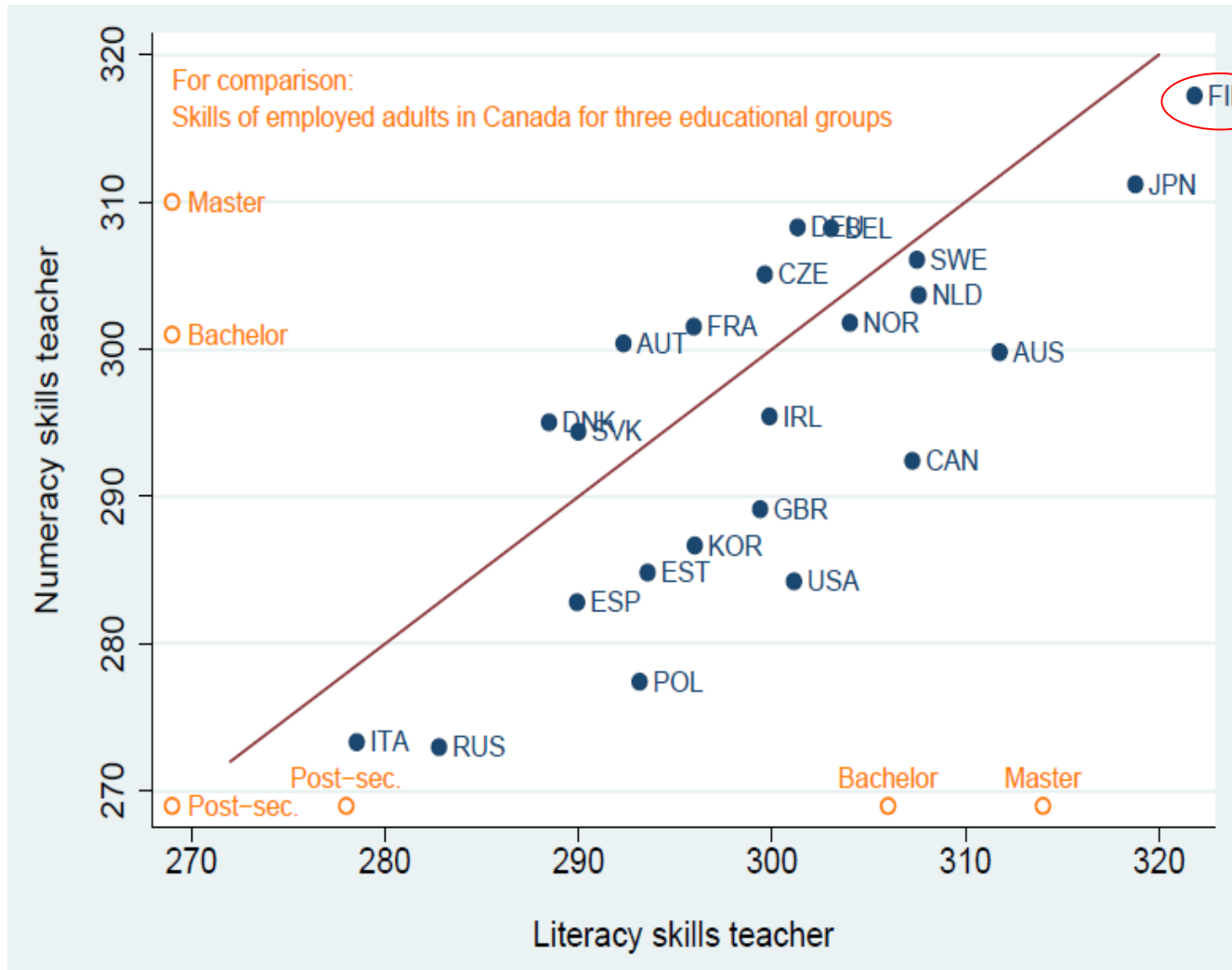
Source: Schleicher, A. (2016), *Teaching Excellence through Professional Learning and Policy Reform: Lessons from Around the World*, International Summit on the Teaching Profession, OECD Publishing, Paris.

<http://dx.doi.org/10.1787/9789264252059-en>

Note: The blue bar shows the middle half of the distribution of numeracy skills of 16-64 year-old tertiary graduates (the end points are the 25th and 75th percentiles of the test scores) and the black segment shows the average numeracy scores of 16-64 year-old teachers (with a 95% confidence interval). Countries are ranked in descending order of the average score.

Competent Teachers

Teacher Cognitive Skills Compared to Canadian Workers with Varying Education Levels



Source: Eric A. Hanushek, Marc Piopiunik and Simon Wiederhold, THE VALUE OF SMARTER TEACHERS: INTERNATIONAL EVIDENCE ON TEACHER COGNITIVE SKILLS AND STUDENT PERFORMANCE. NEBR Working Paper, December 2014.

What now?

Traditional strengths	Development course
R&D funding intensity	Public and private R&D investments declining
Researchers/labour force	Educational level of researchers rising but growth in the number of PhDs is stagnant, and employment prospects in the business sector poor for PhDs
High-quality basic education	Level of competence among young people declining (FNBE, PISA, PIAAC)
High level of tertiary education attainment	Rise in educational attainment will come to a standstill in the early 2020s
Scientific publications and patents/per capita or GDP	Difference relative to top countries will remain the same or grow; few top scientific publications, patents decreasing
Well-functioning public governance	Major reforms in progress
Specialization in information-intensive growth areas	Dramatic drop, crisis in ICT cluster
Broad supply in adult and continuing education	Shortcomings in retaining and improving competencies at all educational attainment levels

Challenges

- A drop in literacy and numeracy skills among young people
- Attitudes detrimental to learning have increased
- Wide gender gap in skills between boys and girls
- Skills of immigrants a major concern
- Significant shortcomings in basic skills and information technology skills of older working-age population (55-64-year-olds)
- Social background impacts adult learning outcomes more than the OECD average, effect of social background has grown among young people
- NEET: growing risk of exclusion
- Finland fails to fully harness its excellent technological environment in teaching and learning
- Difficult public finances and an aging population
- Decades long rise in educational attainment will cease around the late 2010s early 2020s; the growth in the number of doctorates is also levelling off
- No increase in the quality and impact of science and very few top sciences

⇒ **Is Finland starting to lag behind? Challenges ahead for the nation as a location for economic activities based on high competence**

National Core Curriculum

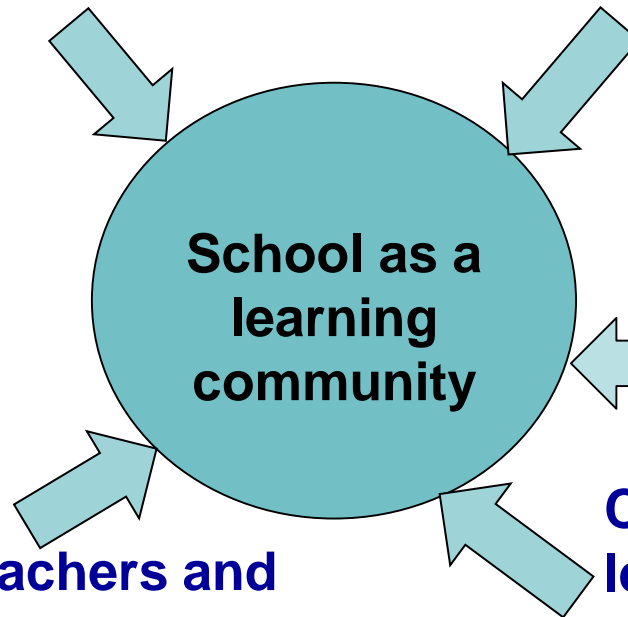
Four keys to curriculum reform 2016

Changing role of pupils

- Working together, participation
- Exploratory and creative learning

World of change

- Environment, globalization, economy, world of work, technology, diversity of society



Impact on children's environment

Changing role of teachers and teaching

- Learning conception
- Working together and building learning entities

Changing concepts of learning and competence

- Wide and transversal, ethical, sustainable
- Interaction, learning to learn, working with knowledge

Main ideas in the curriculum reform 2016

- Enhances joy and meaningfulness of learning and the active role of pupils
- Strengthens the identity and well-being of every pupil
- Enables applying participative teaching and learning methods more effectively than before. The learner is at the centre of his/her learning.
- Supports the ability to work with others, to communicate and interact, to think and learn, and to live in a sustainable way
- Emphasizes work across subjects towards transversal competences and multidisciplinary learning modules as new tools for teaching and learning
- Renews the objectives and main content areas of subjects
- Supports municipalities and schools to develop as learning communities.

Key Elements in the Finnish Core Curriculum

General Guidelines

- for development of the School culture
- for development of learning environments and working methods
 - for student assessment
 - support for learning, pupil welfare

7 Transversal Competences

- Each subject builds the pupil's competence
- Are expressed in the definition of the objectives and key content areas of the subjects

Multidisciplinary learning modules

- one multidisciplinary learning module every school year

Subjects

Grades 1-2

- objectives, content areas, pedagogical guidelines, assessment targets

Subjects

Grades 3-6

- objectives, content areas, pedagogical guidelines, assessment criteria

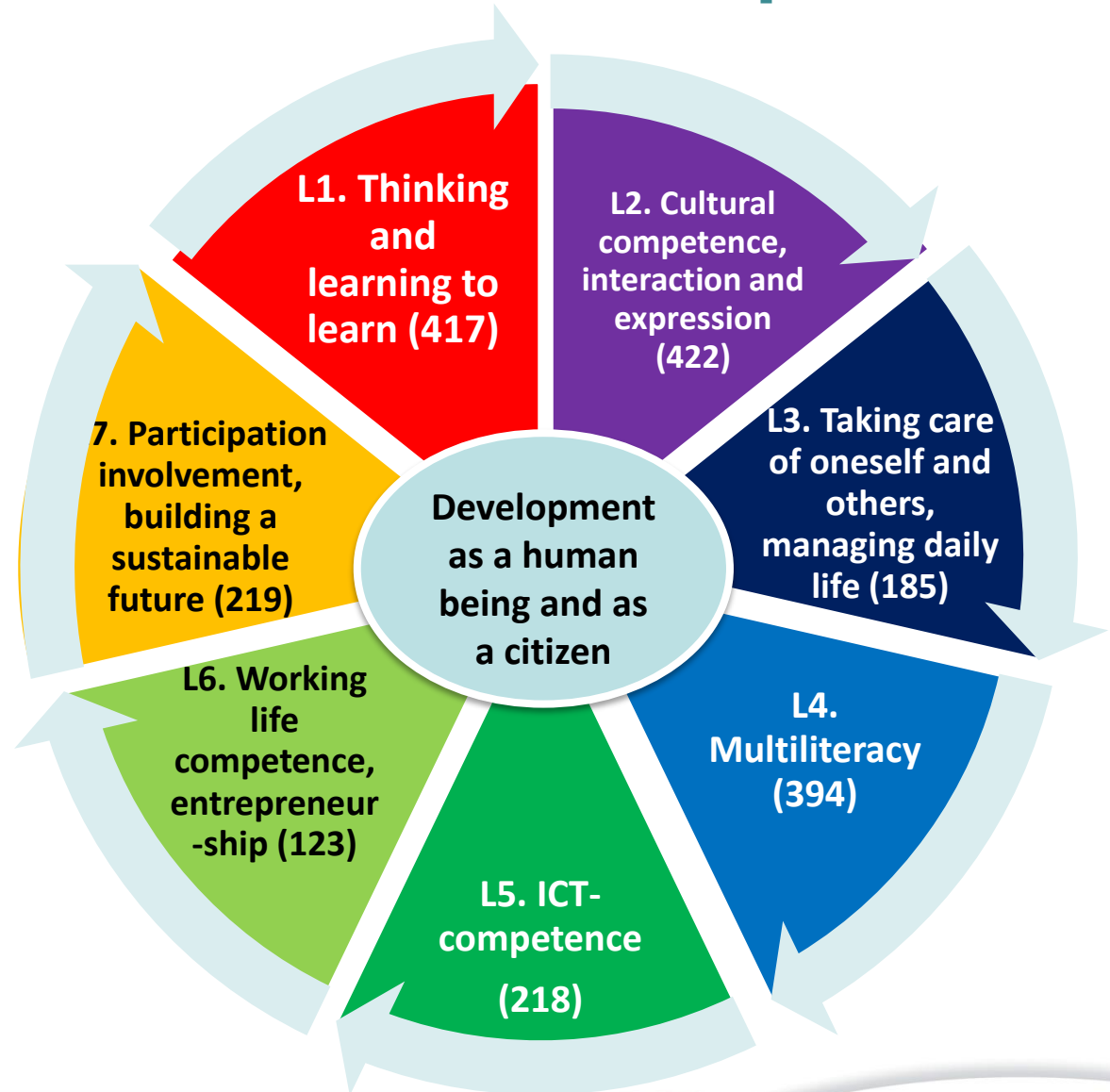
Subjects

Grades 7-9

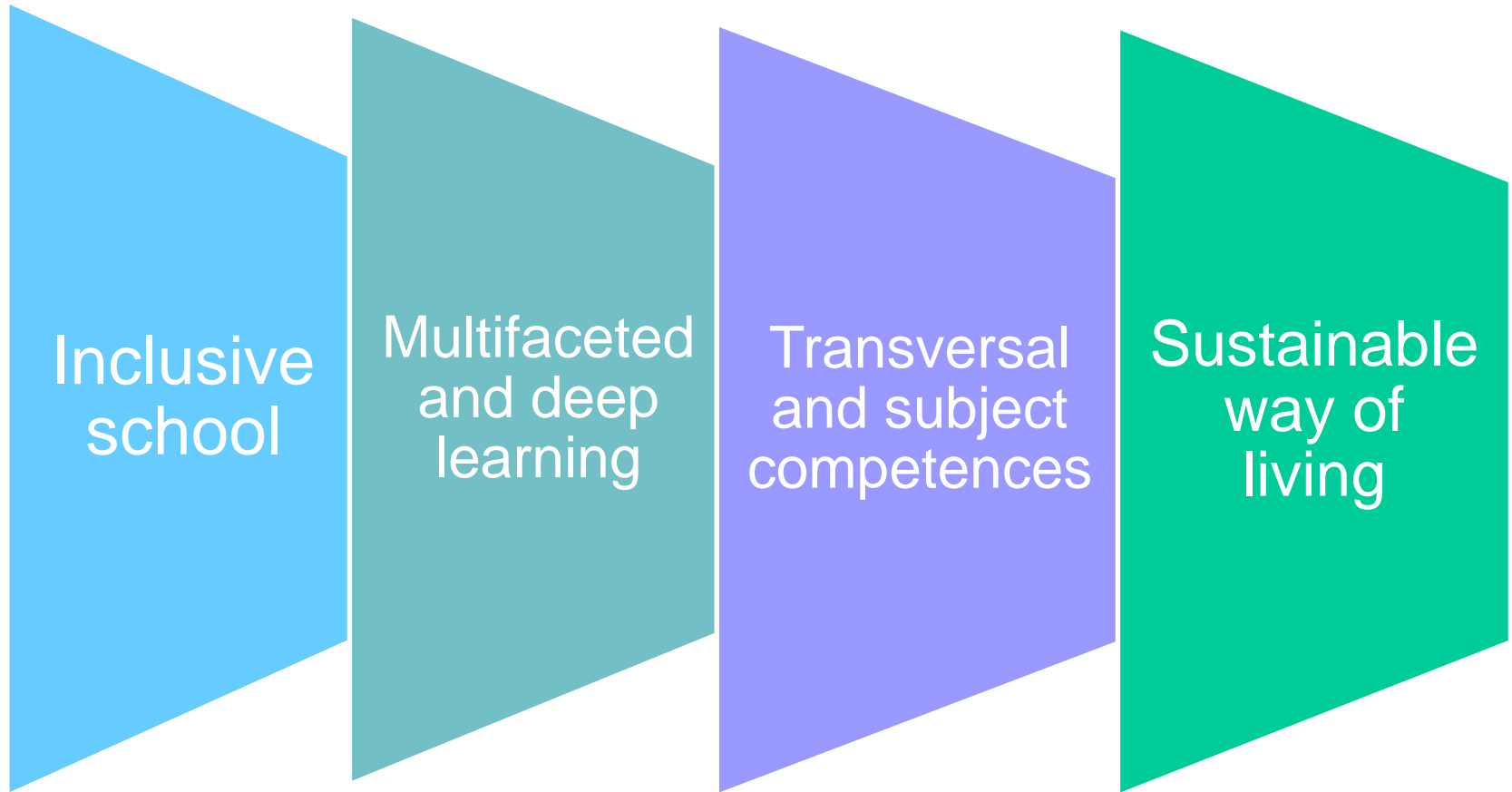
- objectives, content areas, pedagogical guidelines, assessment criteria

Seven areas of transversal competences

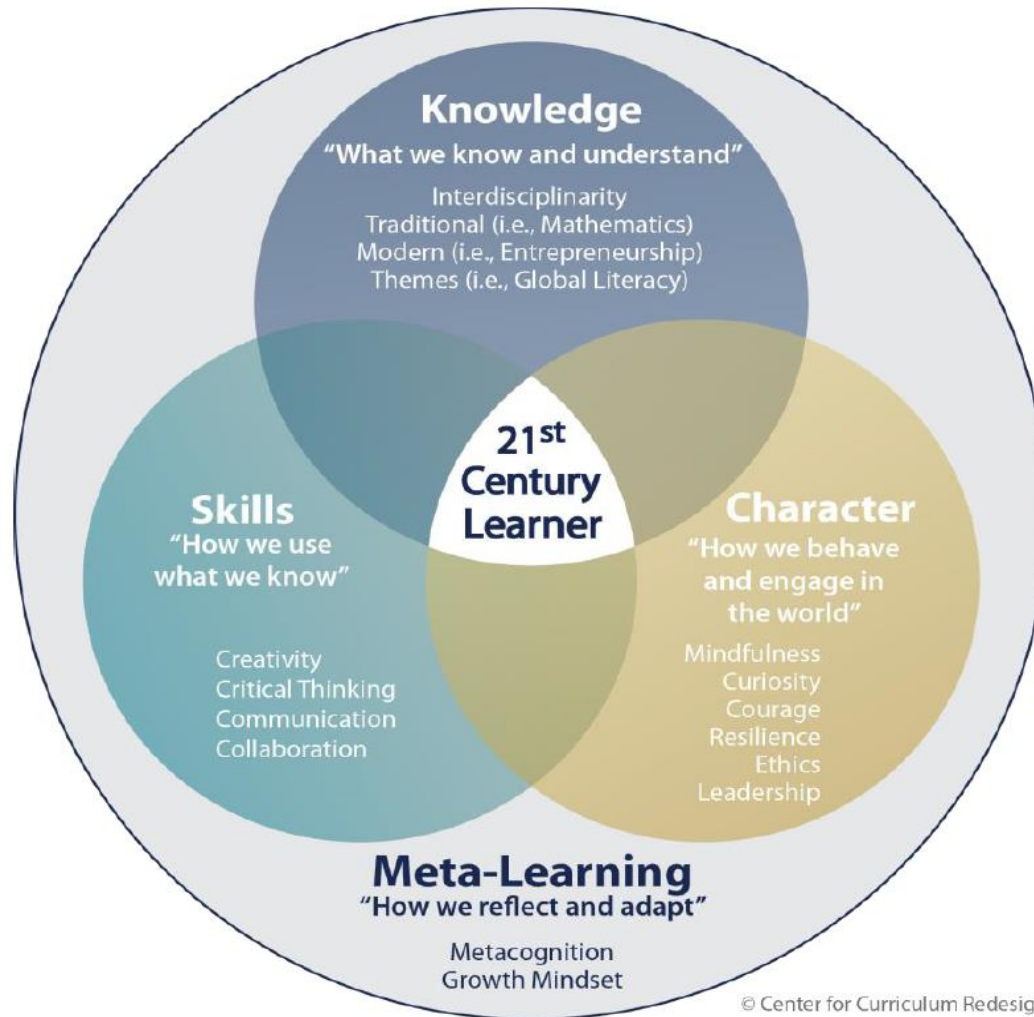
- Emphasis on broader competences
- Each subject promotes the development of transversal competences
- The aims of the competences are specified in the National Core Curriculum (three grade units: 1-2, 3-6 and 7-9)



CURRICULUM REFORM 2016 in a nutshell



Comparison: Four dimensional education - Knowledge, Skills, Character, and Metacognition



Lähde: Charles Fadel, Maya Bialik and Bernie Trilling, 21st Century Skills, 2015.

Strategic Programme of the Finnish Government



**In 2025, Finland is an inventive, caring and safe country where we all can feel important.
Our society is based on trust.**

Our strategic focus: skills and education

2025: Finland is a country that encourages people to continuously learn new things. Skills and education levels in Finland have risen, promoting the renewal of Finnish society and equal opportunities. Finland is in the vanguard of education, skills and modern learning techniques.

Our strategic focus: skills and education

Government-term objectives in this area:

- Learning environments have been modernised and the opportunities offered by digitisation and new pedagogical approaches have been harnessed.
- The number of young people who have dropped out of education or working life has fallen. The drop-out rate in education has declined.
- Dialogue between educational institutions and working life is more active.
- The quality and effectiveness of research and innovation have begun to improve.
- Education and research have become more international and obstacles to education exports have been removed

Key projects supporting these objectives

New learning environments and digitisation

A reform of vocational upper secondary education

The transition to working life

Access to arts and culture

Cooperation between higher education institutions and business

From youth guarantee to community guarantee

NEW COMPREHENSIVE SCHOOL

*Learner-centred education,
competent teachers and
collaborative school culture*

Vision

for the future of Finnish education

Total EUR 90 million
funding
for the action plan

Tutor teachers

in every Finnish comprehensive school
to embrace new pedagogical approaches
and promote digitalisation of teaching

Impact of experimentations

through the centre for innovations
of the National Board of Education

Teachers' professionalism

promoted throughout their careers

International

school culture and education

Vision for the Finnish comprehensive school

- The Comprehensive School Forum will be formed to gather the stakeholders of basic education to envision together. A parliamentary group consisting of each political party in the parliament was appointed to the Comprehensive School Forum in November to create the theses for the future of the comprehensive school. The theses will be published during the autumn of the centenary year.
- The MoEC and the Finnish National Board of Education will organize a municipal circuit in different parts of the country to offer a chance to discuss, brainstorm and strengthen the commitment to develop basic education. The first municipal workshops were held on November and the circuit will go on with workshops in different localities. The World's Largest Parents' Evening event will be organized on January 18th 2017 in order to let the pupils' parents have a voice in the future of the comprehensive school.
- In addition, the internationality of education will be supported in the New Comprehensive School action plan.

TEACHER EDUCATION DEVELOPMENT PROGRAMME

Creating the best competence for the world together

1 Teacher's competence into an entity

Teacher's competence will be compiled into a systematic entity by reforming the structures of teacher education. The competence development will be led with a goal-oriented approach, utilising personnel's development plans.

3 Teachers as experts creating new pedagogical innovations, focus on the learners

The programmes, learning environments and working methods will be improved. The working methods used in the teacher education and educational institutions will emphasise a learner-oriented, research-based and communal approach.

5 Developing educational institution with professional management and leadership

The strategic leadership and management of educational institutions will be strengthened by developing management training. Teacher education prepares teachers with capabilities for taking responsibility in leadership processes.

2 Attractiveness with well-functioning structures, anticipation and admissions

Successful student admissions will result in the best future teachers. The attractiveness of teacher education will be ascertained with inspirational and topical education.

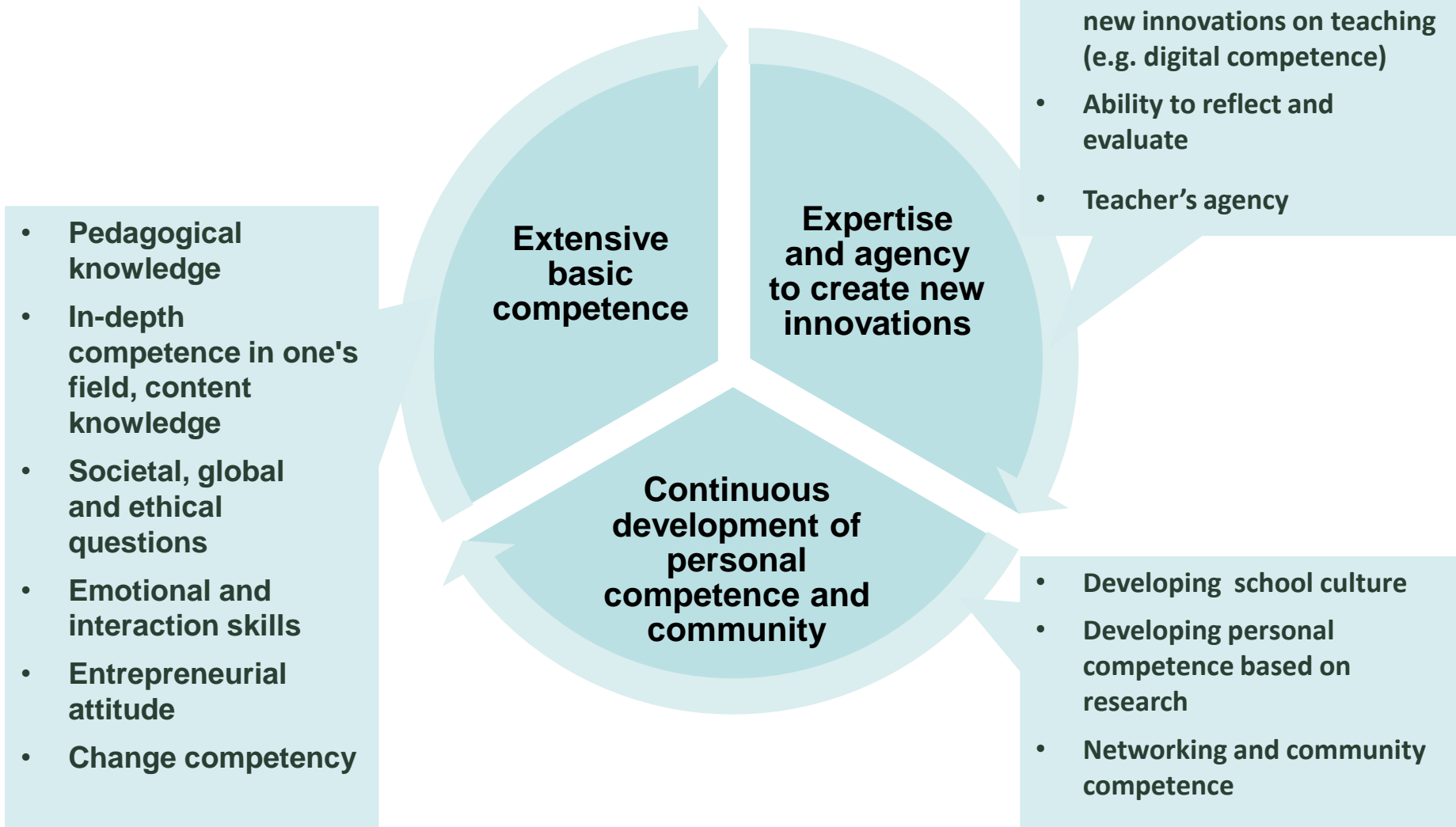
4 Strengthening teacher education through collaboration

Teacher education will be strengthened by close collaboration, networking and building a culture of creating things together. Different models of peer support and collaboration will be utilised more effectively.

6 Strengthening the research-based teacher education

The utilisation of the latest research data on teaching and learning in teacher education will be strengthened. Teacher students learn an exploratory approach that creates new innovations to be used in their work as teachers.

Objectives





Teacher Education Forum

- In January 2016, the Ministry of Education and Culture appointed the Teacher Education Forum to reform the pre-service, introductory and in-service training of teachers.
- Nearly 100 members and experts of the TEF and its divisions have participated in working on the Teacher Education Development Programme (TEDP)
- In addition, nearly two thousand experts in the education sector, as well as students and teachers participated in preparing the development programme through an online think tank.
- The results of the forum and the think tank, expert consultations as well as topical research on teachers and teacher education were utilised in preparing the development programme.

Key project 2: VET-reform

- The objective of the VET-reform is to reform vocational education by creating a competence-based customer-oriented system and to improve efficiency
 - Improving the capacity of VET system to respond the skills needs of the individuals and the working life
 - Strengthening the cooperation between VET and world of work
 - Supporting life-long learning
 - More flexible, effective, more high-quality and more efficient education
- Whole VET system will be reformed by 2018

New VET system in 2018

- Fully competence- based VET- system
 - competence-based and modular qualifications
- More flexibility - Individual learning pathways
 - Enhancing the recognition of prior learning and concentrating on the skills which individual lacks
 - speed up the transition from education to working life
 - Improving the retention of training and reducing drop-outs
 - digitalisation of learning environments
 - no barriers between youth VET and adult VET
- Expanding work-based learning
 - Developing and increasing apprenticeship training and other forms of work-based learning (training contract)
 - flexible combination of different forms of WBL in learning pathways
- Stronger focus on the quality assurance of VET-provider
- Funding system, which is performance-based
 - 50% funding will be based on the outcomes and impact of VET-providers (qualifications, modules, employment)



VET is not the second choice

The attraction of vocational secondary education has been steadily growing.

We train people to solve problems

- Skills for work
- Eligibility for further studies
- Qualified teachers

Key project 3: Acceleration of transition to working life

Measures will be sought that support earlier start of working life. Movement within and between different levels of education will be made as flexible as possible. Accelerated graduation and faster transition to working life will be encouraged.

- The entrance examination process to higher education institutions will be reformed.
- A third term will be introduced in higher education institutions.
- Cooperation between the upper secondary level and higher education will be increased.
- Qualification requirements in the public sector will be updated.

Key project 4: Access to art and culture will be facilitated

Children and young people will be supported in becoming more active. Basic education in the arts and cultural activities will be increased. Greater recognition will be given to the wellbeing aspects of culture. Art exhibitions in public spaces and institutions will be promoted to bring culture closer to every Finnish citizen.

- Access to basic art education and children's culture, which is currently not available to all in every part of the country, will be improved.
- The principle of investing up to 1% of the construction costs of public buildings in the acquisition of artwork will be expanded in cooperation with the social welfare and health care sector in order to support the welfare impacts of the arts.

Key project 5: Cooperation between HEIs and business life strengthened to bring innovations to the market

The impact and utilisation of research results will be strengthened. The profiles and respective responsibilities of HEIs and research institutes will be clarified and cooperation between them will be increased. Knowledge and expertise will be pooled in competitive centres of excellence.

- Collaboration intensified between ministries in steering and funding of HEI's and research institutes to enhance closer cooperation (KOTUMO)
- Open Science and Research Initiative 2014-2017
- OECD review of Finnish STI system, first results 1/2017
- State of Finnish Scientific Research by Academy of Finland (AoF) 12/2016
- 30 M€ funding by the AoF in 2016 to support utilisation of research emerging from ongoing projects (similar to ERC Proof of Concept funding)
- 50 M€ funding by the AoF to support the strategic profiling of Finnish universities. In the 2016 call (PROFI3) attention will be paid to the distribution of work and the collaboration between universities.

Key project 6: Youth guarantee towards community guarantee

Cooperation between the public, private and third sectors in efforts to support young people will be intensified. Young people's life management skills and employment will be supported by means of strengthening social welfare and health care services as a part of the youth guarantee. The best practices of municipalities will be gathered together and the most effective ones will be adopted across the country.

- The youth guarantee will be developed into a model in which responsibility for a young person in need of support is allocated to a single place.
- All comprehensive school graduates will be guaranteed a place in education, working life or rehabilitation.
- Outreach youth work and job seeker coaching activities as well as mental health services for young people will be strengthened.
- Pay subsidies for young people and the Sanssi card will be developed in order to make work more attractive.

Thank you!



Appendix 1: Vocational Education and Training

Finnish VET in the Spotlight

- VET comprises initial and further training (IVET & CVET)
- VET has many target groups: young people, adults and people in working life who need upskilling or reskilling, unemployed -> VET is lifelong learning
- VET is available in institutions (contact, distance, multiform teaching) or as apprenticeship training
- VET is attractive: 44% of comprehensive school-leavers continue in IVET
- IVET: tuition and meals free of charge (CVET: small fees)
- Financing system based on national unit prices based on costs in different sectors of VET
 - lump sums without "earmarks" for the VET-provider
 - In 2016, total operating costs of vocational institutions amounted to 1.900 million € (IVET average unit price/student/year is approximately 10 300 €)
- National-level evaluations with no inspectorate
- 175 VET-providers: municipalities, joint federations of municipalities and private organisations

Finnish VET in the Spotlight

- **Competence-based vocational qualifications – emphasis on the vocational skills, knowledge and competences**
 - Three types of vocational qualifications: initial vocational qualifications, further vocational qualifications and specialist vocational qualifications
 - 351 vocational qualifications: 52 initial vocational qualifications + 299 further and specialist qualifications
 - qualifications have modular structure – flexibility
 - initial vocational qualifications: combination of occupation-specific competences and general competences
 - eligibility to higher education (all "dead ends" removed)
 - national qualification requirements based on the needs of working life and described as required competencies – learning outcome approach
- **Modular learning tracks spanning the individual's life (IVET & CVET)**
 - A joint nationally organised electronic application system for students applying to upper secondary education (both IVET and general upper secondary education)
 - Preparatory training modules leading to IVET
 - Expanded possibilities to combine studies from general and vocational institutions in a flexible way
 - Increased counselling at comprehensive schools and enlarged information about VET and working-life – life-long guidance

Finnish VET in the Spotlight

- **Increasing cooperation between VET and the World of Work**
 - both at national level as well as at local/Provider level
- **Work-based learning is an integral part of all VET**
 - on-the-job learning in institution-based VET
 - apprenticeship training as an alternative study pathway
- **Highly educated teachers**
 - about 75 % of VET teachers have a university or polytechnics degree, about one year of pedagogical studies and minimum 3 years work experience in the particular area of expertise
- **Delegation of responsibility and decision making power to local level**
 - VET-providers and teachers have a lot of independent autonomy in the provision and contents of education.
 - strategic steering by Ministry of Education and Culture
 - VET-providers are licensed by the Ministry of Education and Culture

Challenges of VET in Finland

- Matching VET to the changing skills needs of the labour market
 - digitalisation, robotisation, platform economy...
- Unemployment & shortage of skilled labour force
- Skills development of those in working life or who are unemployed
- Engagement of employers in LLL
- Changing and diversifying group of learners
 - new learning methods and environments, counselling
- Growing expectations and demands on education and training
 - quality, skills needs and cost-efficiency
- a sustainability gap in Finland's public finances
 - significant cuts in VET budget

Reform of vocational education training

- Reform of Vocational education and training is one of the key projects of Prime Minister Juha Sipilä's strategic government programme
- The objective of the VET-reform is to reform vocational education by creating a competence-based customer-oriented system and to improve efficiency
 - One VET system for all: VET for young people and adults in the same framework -> VET system based on life long learning
 - Intensification of the activities of VET providers.
 - Enhanced cooperation between VET institutions and working life
- The total funding of VET decreases ca. 275 million € by 2018 (ca. 15 % of total funding)
- Whole VET system will be reformed by 2018

Targets for VET-reform

- Improving the capacity of VET system to respond the skills needs of the individuals and the working life – flexibility and agility
 - From supply oriented approach to the demand driven VET
 - Flexible and customer-oriented developing paths of the skills and competences
- More effective, more high-quality and more efficient education
 - enhancing the recognition of prior learning and concentrating on the skills which individual lacks
 - speed up the transition from education to working life
 - improving the retention of training and reducing drop-outs
 - Stronger focus on the quality assurance of VET-provider
 - digitalisation of learning environments
- Expanding work-based learning
 - Developing and increasing apprenticeship training and other forms of work-based learning (training contract)
- Strengthening cooperation between VET and world of work
- Supporting life-long learning

Reform of VET – steps forward

- Reforming the legislation of the vocational education
 - competence-based and customer-oriented approach
 - one act catering all forms of VET (both IVET and CVET)
- Further developing the vocational qualification system
 - less and broader outcome based qualifications: from 351 to 165 vocational qualifications
 - modular qualifications – more flexibility to respond the skills requirements of world of work
- Developing more customer -oriented education processes
 - competence-based, individualised and flexible learning pathways
 - digitalisation of learning environments
 - Expanding work-based learning
 - Easier access to VET
 - Stronger recognition of prior learning: more efficient and shorter training pathways
- The competence of teachers and trainers will be further improved
- The VET-providers network is reformed – stronger VET-providers
 - regional availability of VET is secured
- New funding system: more emphasise on performance and outcomes
 - supporting competence-based and customer-oriented approach

Reform of VET – steps forward

- Separate funding systems (apprenticeship training, institution based training) are integrated into one coherent funding system
- The role of quality and effectiveness of training is expanded in the new funding system
 - Funding will be more strongly based on the outcomes of training providers (qualifications and modules)
 - Stronger role for the performance-based funding (employment, feedback from students)
- More strategic approach to national steering of VET
 - More emphasis for the role of quality and effectiveness in the steering of VET-providers
- Increasing the attractiveness of apprenticeship training and other forms of work-based learning (new “training contract” -model)

Appendix 2: Higher Education and Research

Finnish HE system - review

Strengths	Weaknesses
Several important reforms have already been made, including an autonomy reform and new acts for universities and for UAS	Few internationally top-ranked HEIs
An important step towards a more transparent funding stream for UAS has been taken	Existence of barriers towards transfer across the dual system for students
Reforms > Strengthened academic leadership	Low level of foreign recruitment of academic staff at HEIs
Increased connection to the surrounding society through inclusion of external members of the HEI boards	Scattered HEI landscape with comparatively many HEIs, some of which are quite small
A few mergers between HEIs have contributed to slightly fewer HEIs	Small subjects exist at many HEIs
Est. of Aalto University has received significant attention internationally and is seen as a success	Low level of internationalisation in the system as a whole
Well-developed innovation system ; an innovation leader according to Innovation Union scoreboard	Underdeveloped level of cooperation between universities and UAS
High performance of the schooling system ; highly ranked in international tests	Legal barriers towards deeper cooperation and mergers between universities and UAS
Strong connection bt. UAS and regional business	The innovation system does not contribute sufficiently to commercialisation of knowledge and creation of new jobs
The regional coverage of UAS, and to a lesser extent universities, is good	Long study times

Strengths

R&D intense: One of the most R&D intense countries in the world with heavy emphasis on engineering and science.

Highly educated: An equal opportunity system with stellar lower and good higher education. Highly educated labor force.

Able to collaborate: Low hierarchies, no-nonsense culture, fact-based argumentation, ease of networking.

Accountable: High institutional accountability and a strong evaluation culture.

Opportunities

Sense of urgency & a need for change: A widespread agreement that Finland is in need of large changes.

Re-deployment of ICT expertise: In R&D&I, Finland remains specialized in ICT. After restructuring, ample expertise available.

Emerging startup ecosystem: Since 2008, great progress: 5–10 yrs on this trajectory makes Finland a Top 10 location globally.

Economic & institutional cleansing: After decades of stability, private/public institutions shaken; improvements re-combinations?

Weaknesses

Introvert: R&D&I builds on own/domestic effort with few international linkages. Does not attract top talent from abroad.

Autistic: Tolerates & encourages passive behavior. Too little search for new opportunities. Avoidance of risks.

One-sided: Few leading industries & companies. A size distribution that is thin in “Mittelstand”.

Fragmentation & lack of scale: Dispersion combined with a lack of emphasis leads to units below “minimum efficient scale” and underperformance.

Threats

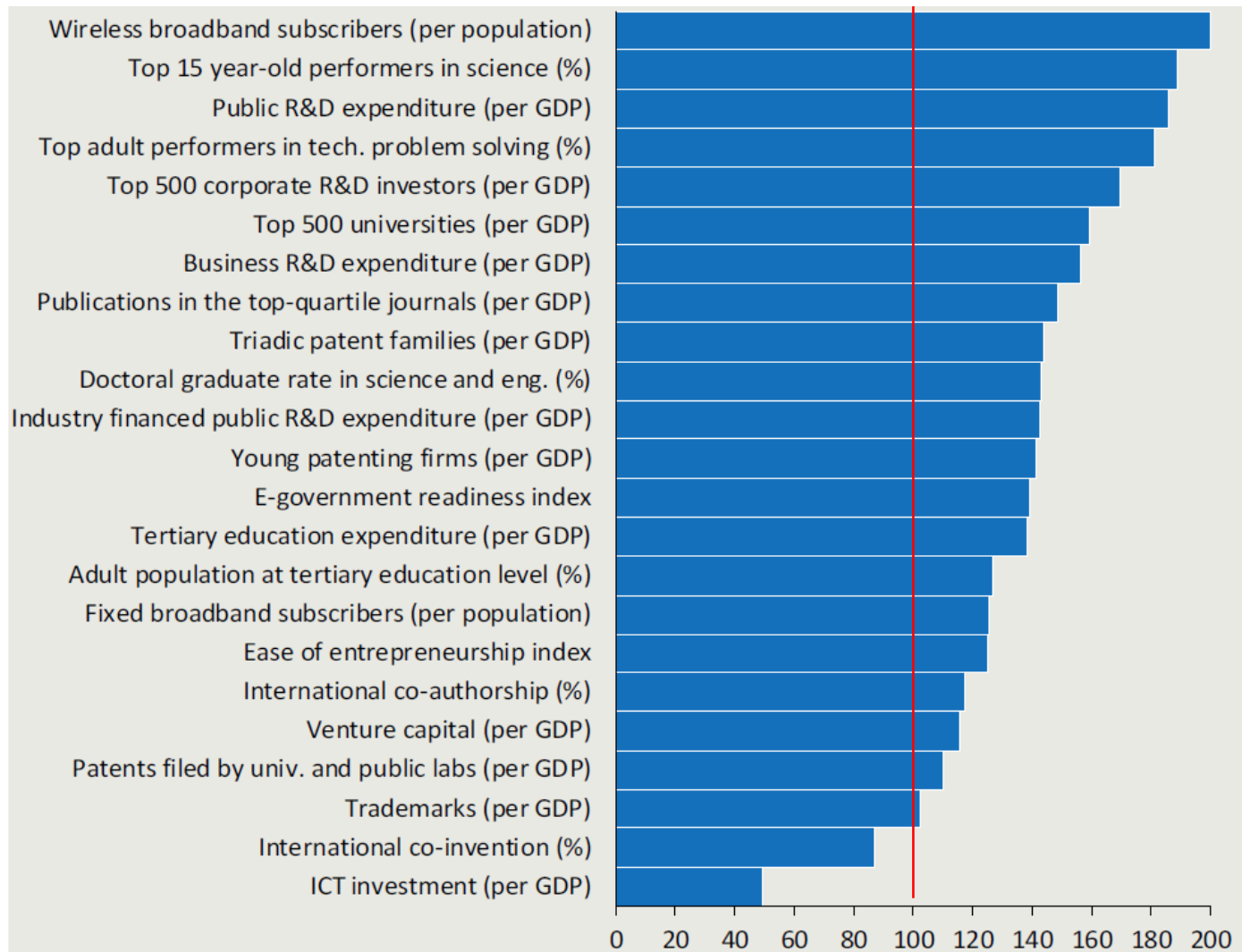
Loss of faith: Suspicion that knowledge is not the ultimate drive of growth. Reflected in political decisions. Lack of private inv.

Mismatches: More strengths in knowledge than in its deployment. Seemingly a mismatch between R&D inputs & outputs.

Gridlock: Institutional rigidities loom large. E.g., labor market & social reforms (cf DE/SE) remain absent.

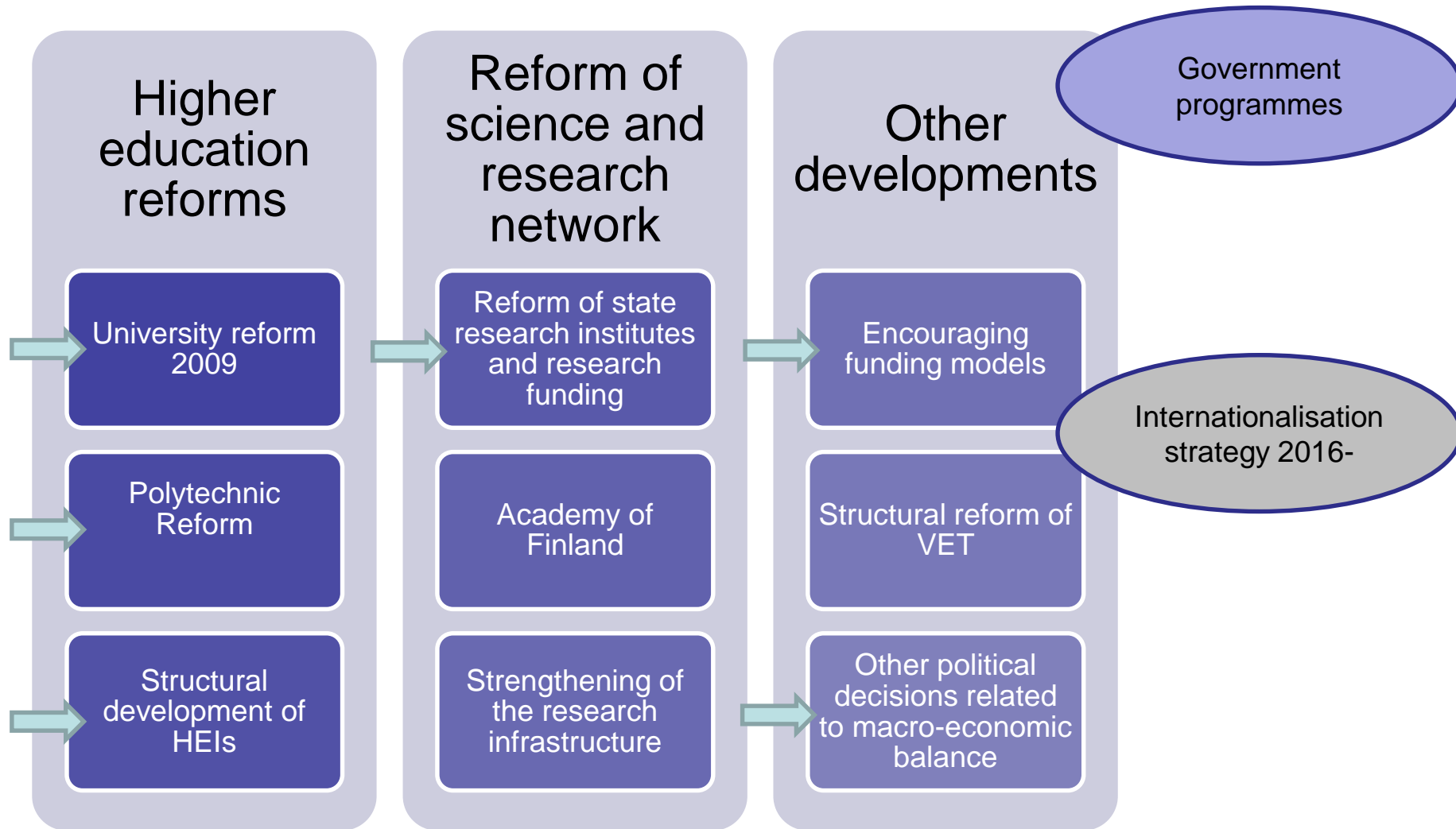
Lack of creative destruction: Focus on minor improvements & operational efficiency. Even if “new to the world”, little ability to capitalize on it.

Finland in light of OECD innovation indicators (index, 100 = the OECD median, from 0/worst to 200/best)

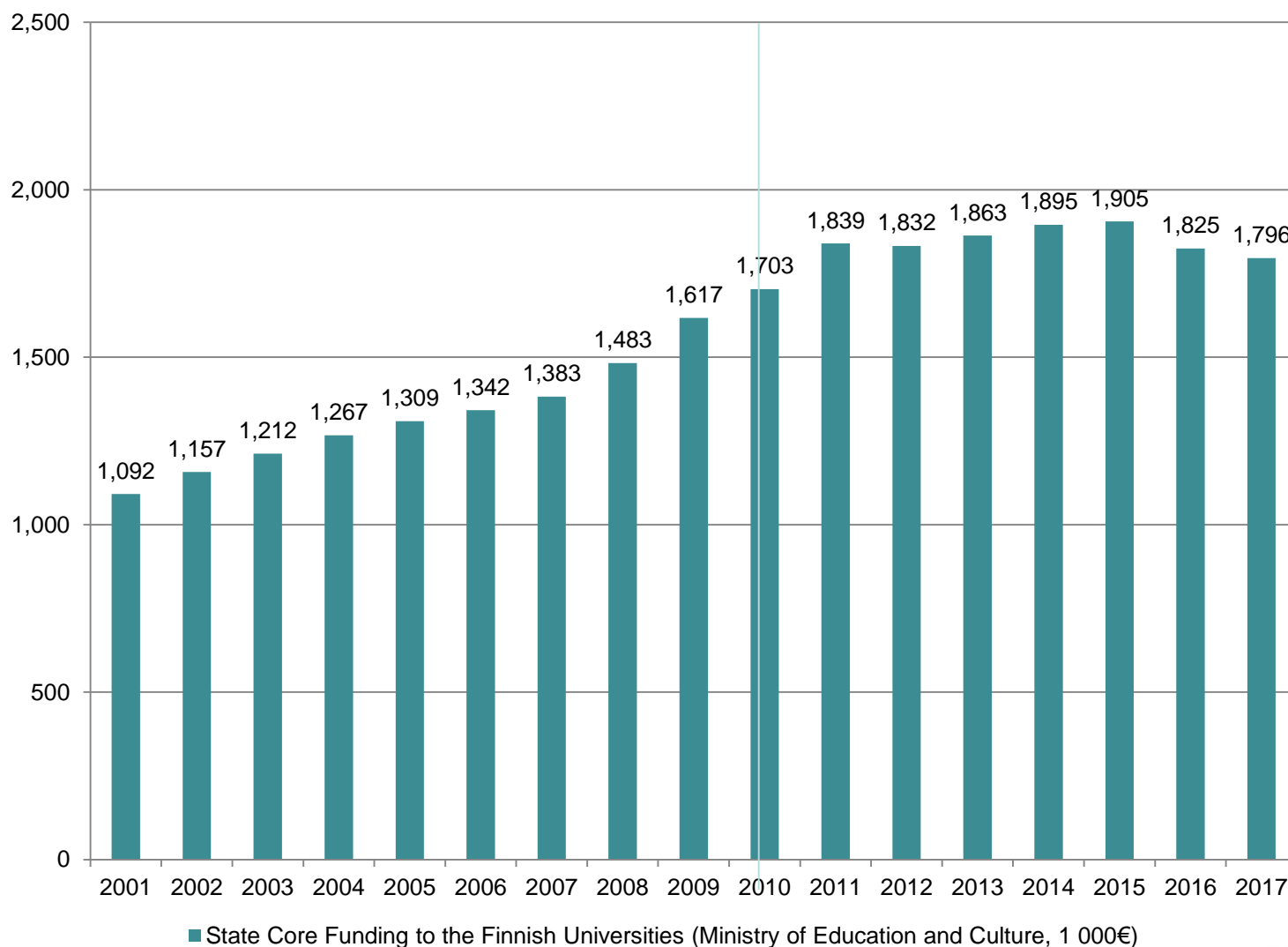


Source: OECD.

Goal: more future proof HE and research sector



Universities Core Funding 2001-2017 (Nominal, 1 000€)



Steering and funding of HEIs

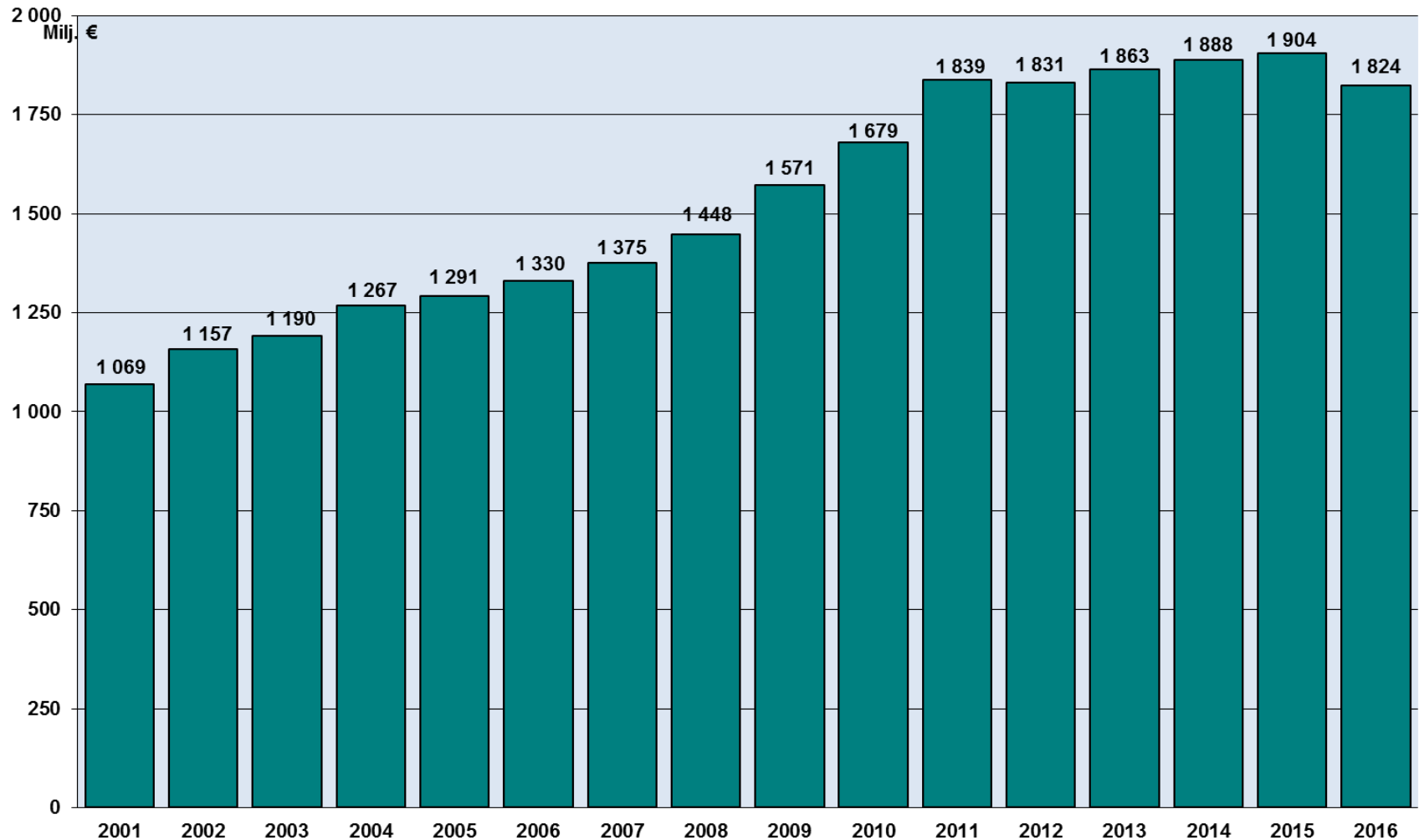
- Legislation and norms
- Programme of the Finnish Government
- Steering by the Ministry of Education and Culture:
 - Negotiations and performance agreements every four years
 - Written feedback
 - University and UAS visits
 - Seminars
 - Information exchange
- State budget
- State funding for HEIs:
 - EUR 1,9 bn for Universities
 - EUR 0,9 bn for UAS

Performance Agreements

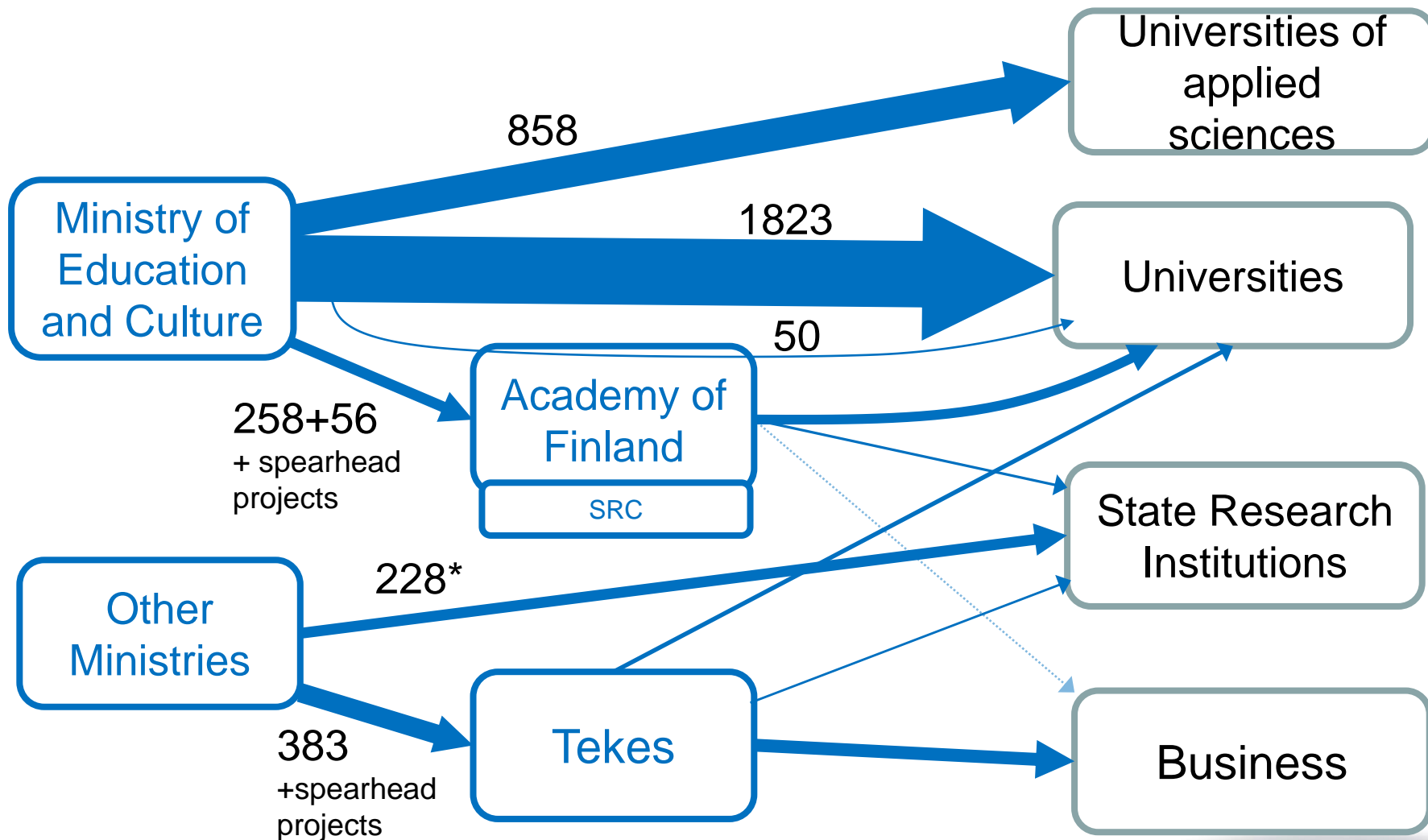
Structure of the agreement between MoE and HEIs

1. Objectives set for the higher education system as a whole
 - Verbal goals formulated in dialogue with HEIs
 - Comprise the statutory duties, structural development, quality, competitiveness, effectiveness, internationalization, the viewpoint of staff and students, and the cost-effectiveness and productivity of the activities.
2. Mission, Profile and Focus Areas of the HEI
3. Key Development Measures
 - 1-5 projects per HEI linked to the implementation of the HEI's strategy
4. Financing
 - The government core funding in total
5. Term is four years.

Public funding for Universities 2010-2015, nominal value, million €



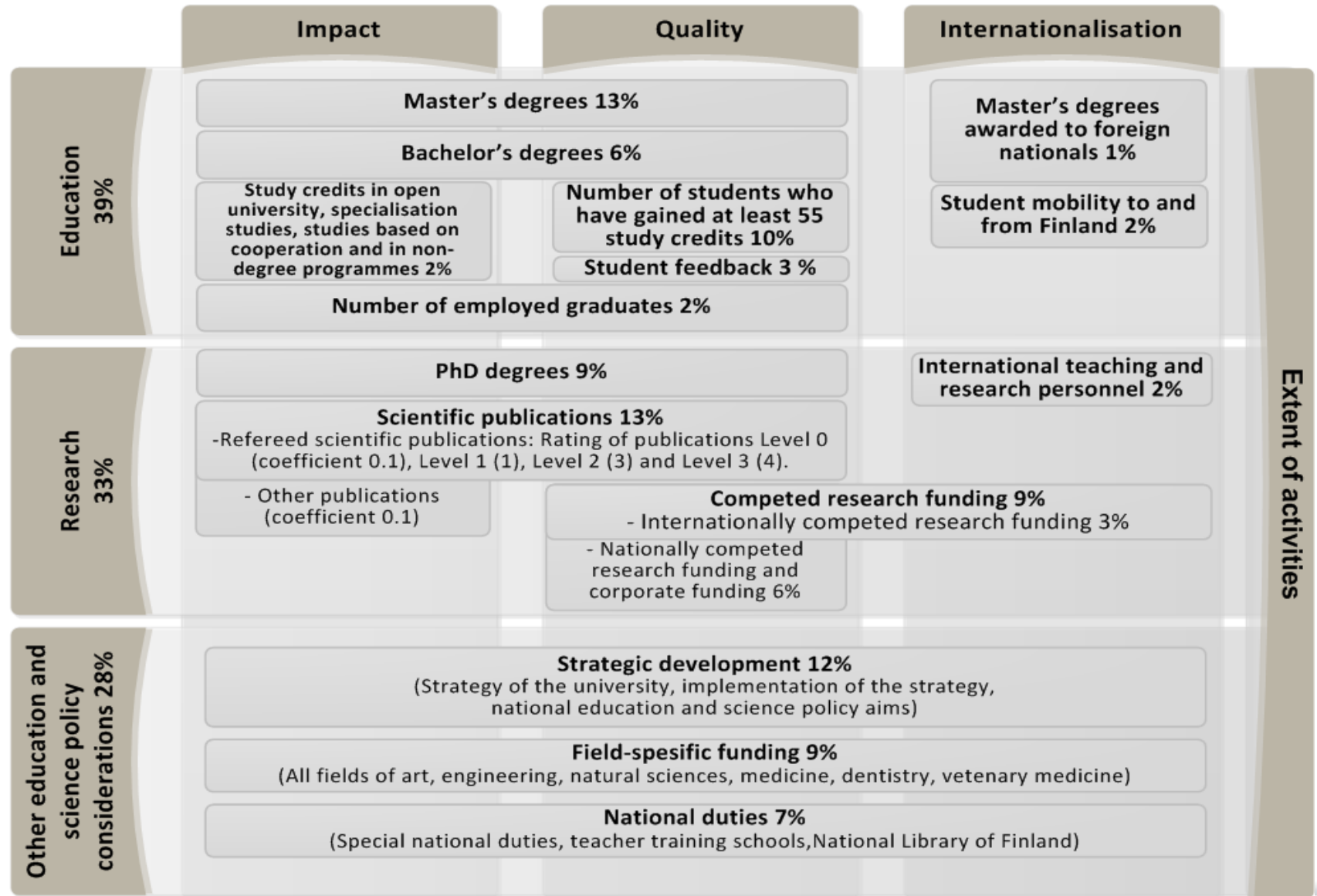
Public funding for higher education and research 2016



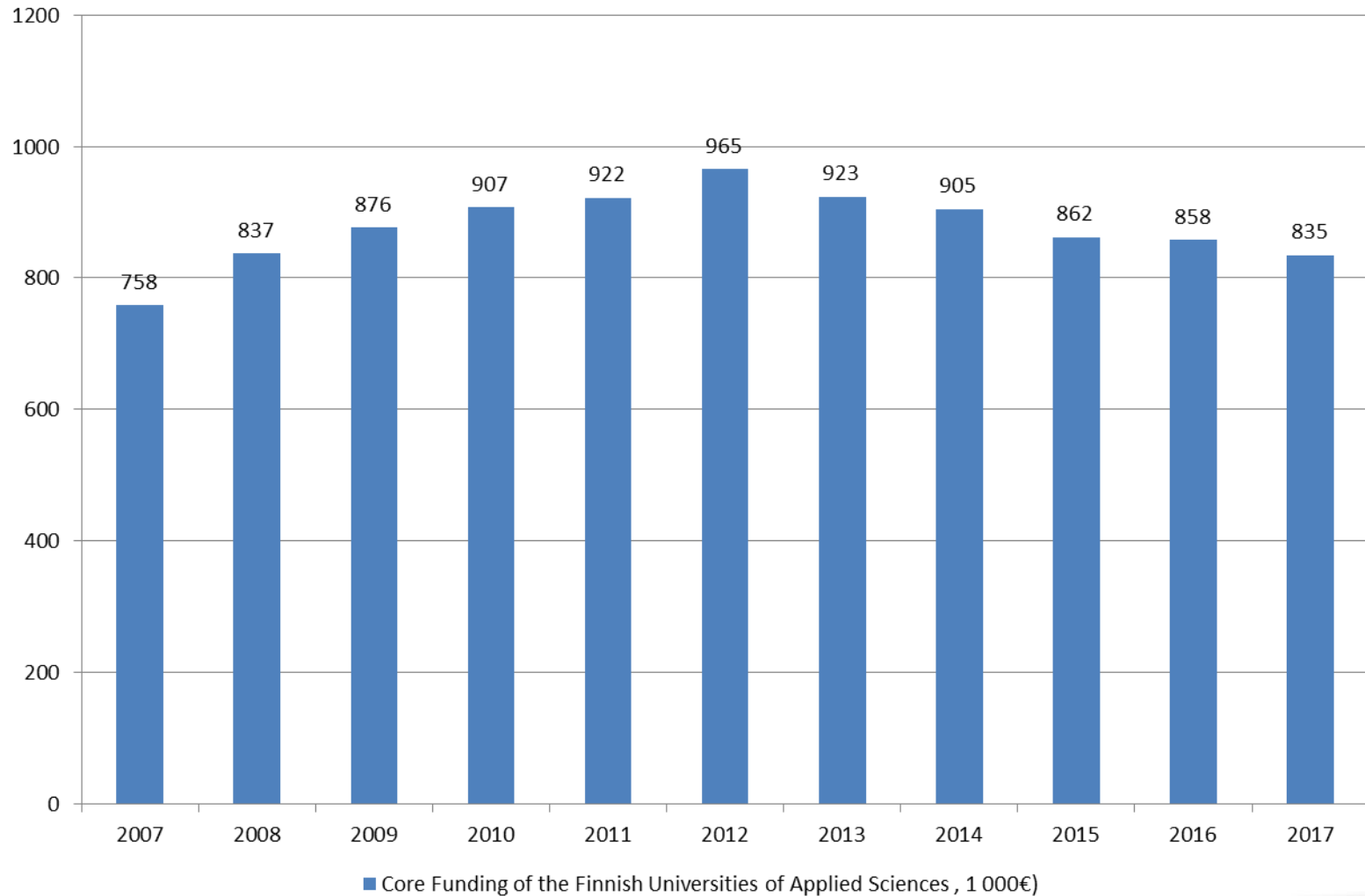
Universities' core funding formula review 2017

- Review accepted by the government April 2016, will take effect 2017
- Based on proposal of the joint working group between the Ministry and Finnish universities
- Focus on review of the model - not large-scale reform
- Share of the strategic funding and share of employed graduates increased
- Professional specialisation studies and credits based on cooperation agreements incorporated into the funding factors
- Revision of some calculation criteria's
 - Students who have performed at least 55 study credits will be revised to take into account those students who begin at the January and who graduate during the calculation year
 - Calculation of the publication forum data will be revised: stronger role to quality of refereed publications
- Funding allocated to universities in a lump sum
- All indicators calculated using 3-year averages

Universities core funding from 2017



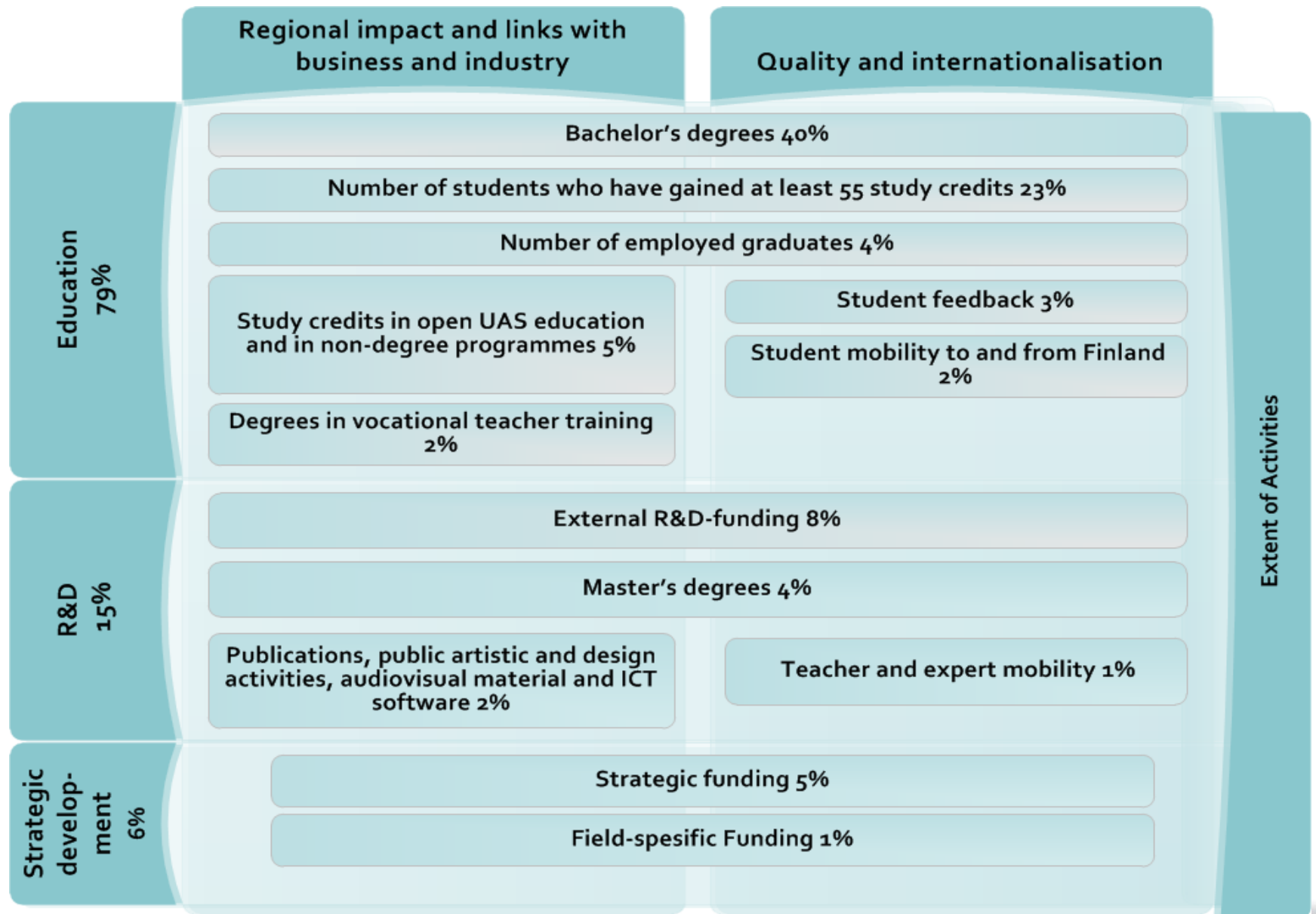
Universities of Applied Sciences Core Funding 2001-2017 (Nominal, 1 000€)



UAS' core funding formula review 2017

- Review accepted by the government September 2016, will take effect 2017
- Based on proposal of the joint working group between the Ministry and Finnish UAS
- Focus on review of the model - not large-scale reform
- Stronger strategic funding, decreased funding shares from education factors of the model (degrees, 55 study credits)
- Added share to employment and open UAS studies
- Professional specialisation studies and credits based on cooperation agreements incorporated into the funding factors
- Revision of some calculation criteria's
 - Removal of the field-specific coefficients from the calculation of degrees
 - Students who have performed at least 55 study credits will be revised to take into account those students who begin at the January and who graduate during the calculation year
 - New student feedback survey and collecting time when applying for the degree
- Funding allocated to Universities of Applied Sciences in a lump sum
- All indicators calculated using 3-year averages

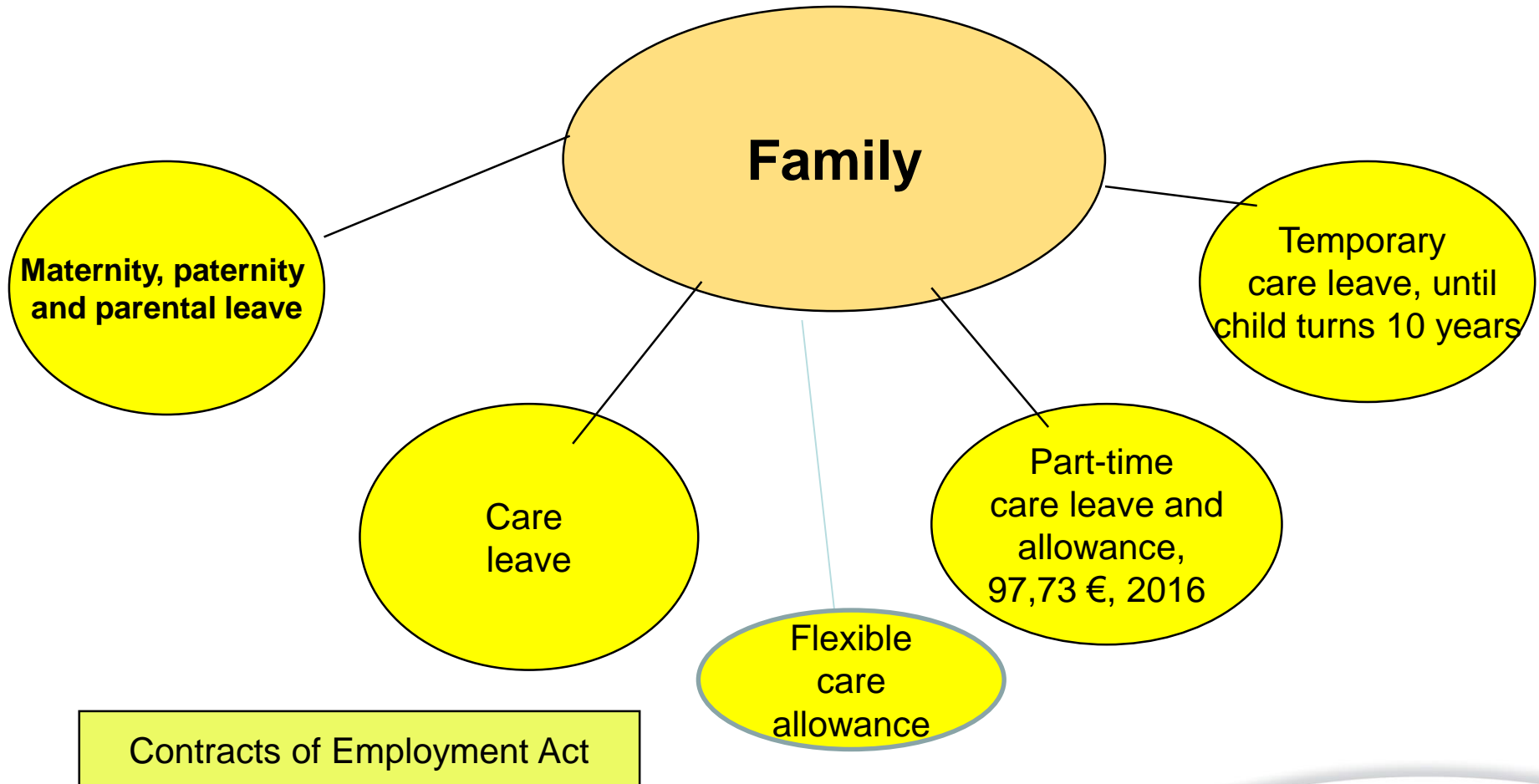
Universities of Applied Sciences core funding from 2017



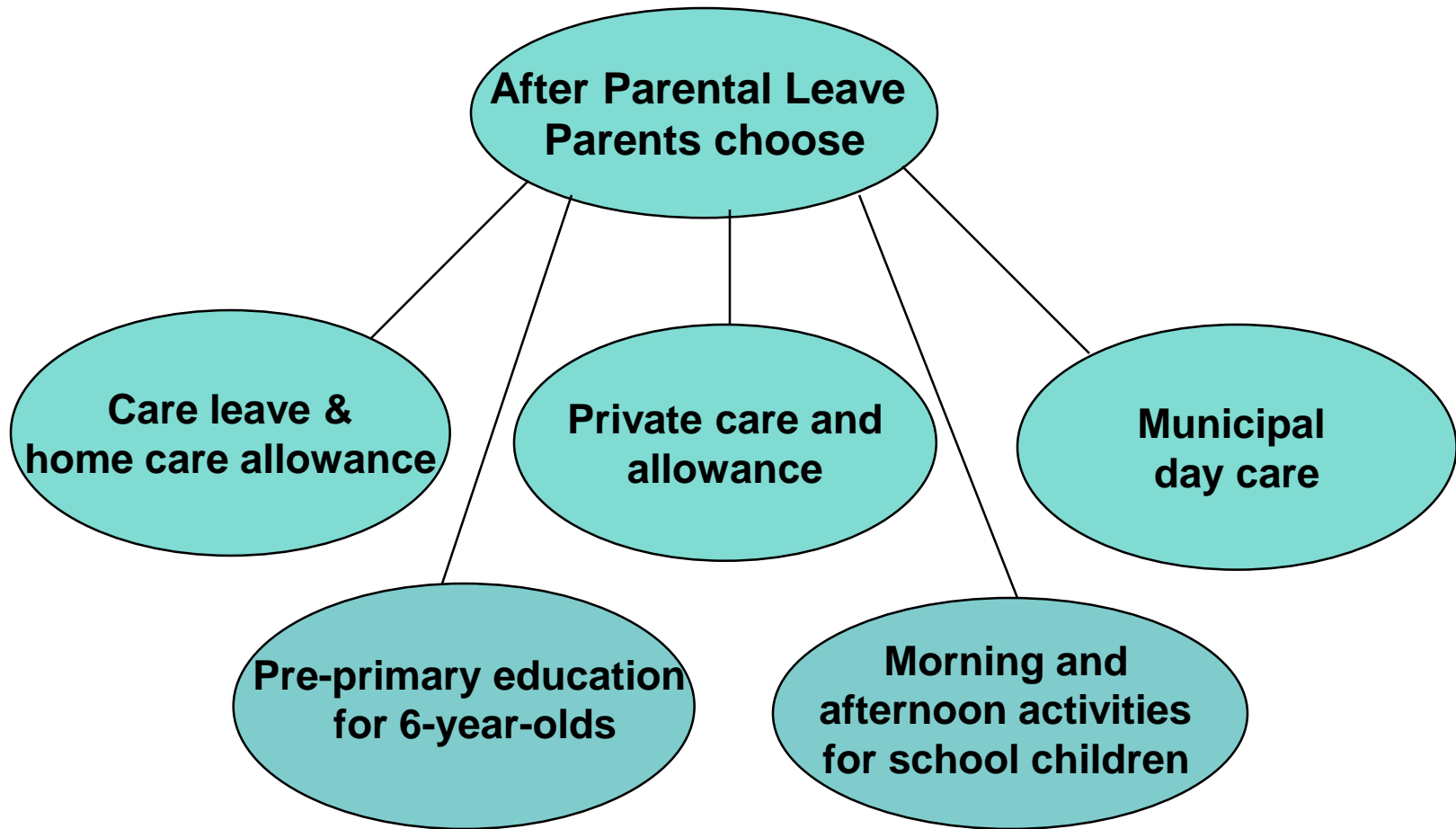
Extent of Activities

Appendix 3: Early Childhood Education and Care in Finland (ECEC)

Reconciliation of Work and Family Life: Care Leave and Allowance System



Early Childhood Education and Care Alternatives



Policy goals of ECEC services

Educational policy

- early education for all children

Family policy

- support for families

Employment policy

- reconciliation of work and family

Equality policy

- equal opportunities for women and men
- equality between children

Social policy

- early prevention

All these tasks are present and relevant; during years the stress has differed between these policy goals

Strengths of the Finnish ECEC System

- ❑ ECEC is steered by a number of acts and decrees; regulations on access, educational goals, staff-child ratio, staff qualifications and client fees in day care
- ❑ Access to ECEC is an universal right
- ❑ Freedom of choice; ECEC services, home care allowance or private care allowance
- ❑ An integrated system; care + education= educare
- ❑ Well educated staff
- ❑ Affordable
- ❑ Inclusion; integration of children with special needs
- ❑ National Curriculum; sets the objectives and principles for ECEC

Forms of Services in ECEC

- ECEC Centres
- Family Day Care
- Group Family Day Care
- Full-time, part-time care and 24-hour ECEC for the children of parents who work in shifts
- Supervised play activities open to everyone in playgrounds and at open ECEC centres

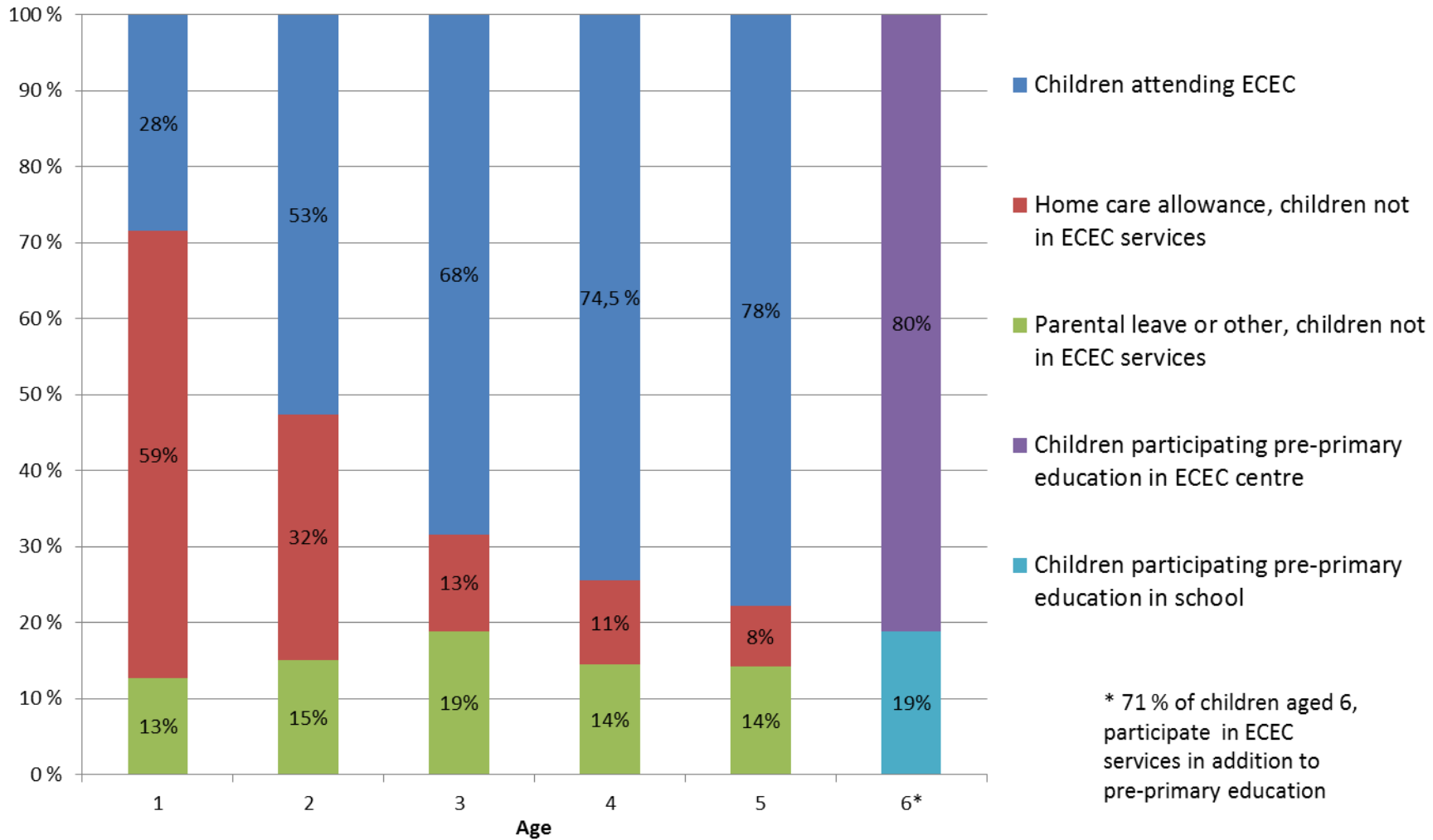
Recent changes

- Right to ECEC is restricted from full-time to 20 hours a week; from 1 August 2016
- Change in child-staff ratio in ECEC centres from 1:7 -> 1:8 ; adapted from 1 August 2016
- New law on ECEC client fees is being drafted

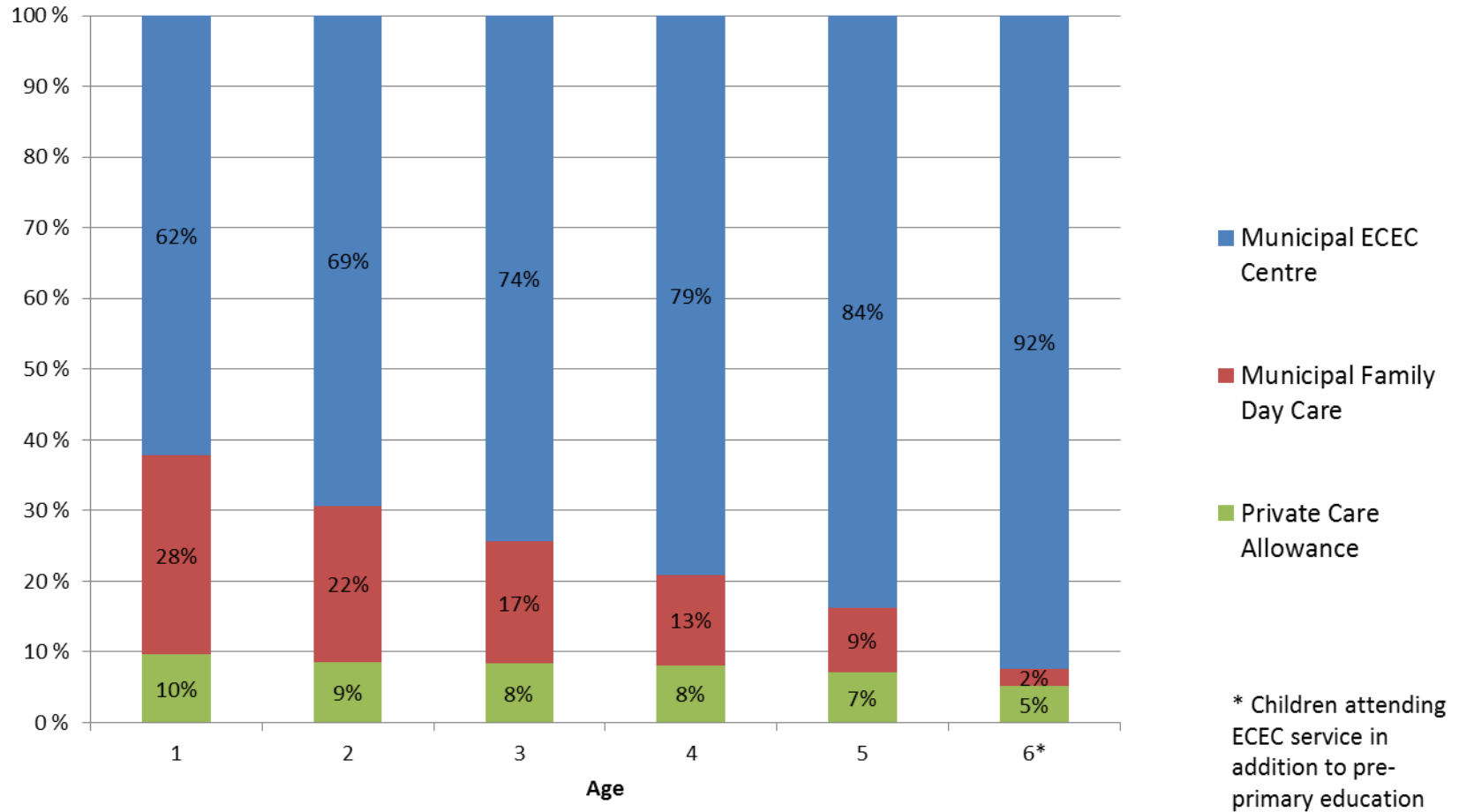
The Right to ECEC from August 2016

- Each child has a right to 20 hours of early childhood education
- The right to early childhood education is affected by the employment and educational situation of the parent or other guardian living with the child. An extended right to early childhood education applies if the child's parent or other guardian
 - works full-time
 - is a full-time student
 - operates a business
 - is self-employed
 - works on a part-time basis (more than 20 hours per week including commute)
 - participates in an employment promoting service, rehabilitation or comparable activity.
- In addition, a child may have a right to full-day early childhood education for example
 - if the child has particular developmental needs or requires assistance
 - if the family situation calls for it or it is otherwise in the child's best interests.

Children aged 1-6 in 2014



Participation in ECEC services by age group, 2014



Appendix 4: PISA 2015

AVERAGE SCORE POINTS IN SCIENTIFIC LITERACY

	POINTS	FINLAND*	OECD*	SD
SINGAPORE	556	+	+	104
JAPAN	538	+	+	93
ESTONIA	534	+		89
TAIWAN	532	+		100
FINLAND	531	+		96
MACAO (CHINA)	529	+		81
CANADA	528	+		92
VIETNAM	525	+		77
HONG KONG (CHINA)	523	-	+	81
PSJG (CHINA)	518	-	+	103
KOREA	516	-	+	95
NEW ZEALAND	513	-	+	104
SLOVENIA	513	-	+	95
AUSTRALIA	510	-	+	102
UNITED KINGDOM	509	-	+	100
GERMANY	509	-	+	99
NETHERLANDS	509	-	+	101
SWITZERLAND	506	-	+	100
IRELAND	503	-	+	89
BELGIUM	502	-	+	100
DENMARK	502	-	+	90
POLAND	501	-	+	91
PORTUGAL	501	-	+	92
NORWAY	498	-	+	96
UNITED STATES	496	-		99
AUSTRIA	495	-		97
FRANCE	495	-		102
SWEDEN	493	-		102
OECD COUNTRIES	493	-		94
CZECH REPUBLIC	493	-		95
SPAIN	493	-		88

Finland was ranked fifth in science (range 3-8) among all participating countries and economies. The group of countries on a par with Finland consisted of Estonia, Taiwan, Macao (China), Canada and Vietnam.

2016 klo 12:00

PISA 2015 1/3

- Science (5th): Finland was ranked fifth in science (range 3-8) among all participating countries and economies. The group of countries on a par with Finland consisted of Estonia, Taiwan, Macao (China), Canada and Vietnam.
- Reading (4th): Finland ranked fourth (range 2-5), in reading literacy. The participants on a par with Finland consisted of Hong Kong, Canada, Ireland and Estonia.
- Mathematics (13th): Finland was ranked 13 (range 10-16), in mathematical literacy. The group of countries on a par with Finland consisted of Canada, Netherlands, Denmark, Slovenia, Belgium ja Germany.
- Girls in Finland came 2nd best among the girls in all the participating countries and economies after Singapore. In the comparisons among boys, Finnish boys ranked in tenth place.
- Differences between schools are very small in Finland.
- Pupils with immigrant background have improved their scores in science and mathematics.

PISA 2015 2/3

- The PISA 2015 results show that proficiency among students in Finland is still among the best in the OECD countries, even though the point in science scores have dropped
- The percentage of poor performers in science has increased from 4 % to 12 %. The number of top performers has dropped from 21 % to 14 %.
- Over 65% of those whose proficiency in science is poor perform poorly in mathematics and reading. Of these, around two-thirds were boys.
- Pupils with immigrant background have improved their scores in science and mathematics.
- Interest in science career is low
- Motivation improves knowledge and knowledge fuels motivation. This is a cycle that should be achieved as early as possible

PISA 2015 3/3

- New core curricula are being introduced in pre-primary and basic education. In the new core curriculum in basic education children and adolescents are encouraged to take responsibility for their studies and every student is given support in their studies. The aim is to develop the learning environments and ways of working in comprehensive school so that learning is inspiring.
- The government key project for new comprehensive schools (Uusi peruskoulu) strengthens the potential of schools to harness digitalisation in an expedient way with the help of tutor teachers, makes use of pedagogical experiments.
- National programme formulated by the Teacher Education Forum for basic training and continuing professional education for teachers will be implemented.
- LUMA-Finland project will help improve mathematical and scientific proficiency from early childhood education onwards. From the beginning of 2017 the pilot project goes national: <http://www.luma.fi/en>

Appendix 5: Evaluation

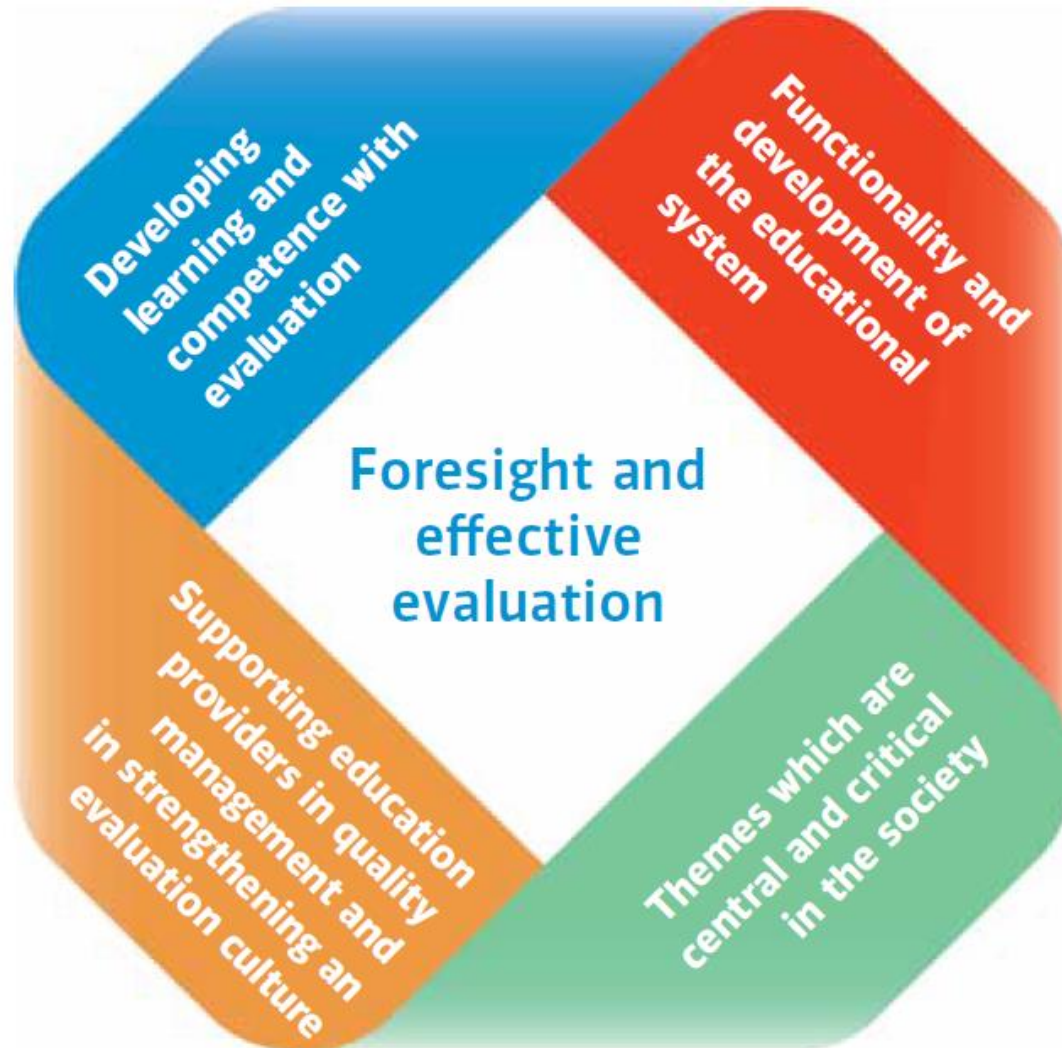
Evaluation of Education in Finland

- The aim of the evaluations is to develop education and to support learning. The evaluations also produce information for local, regional and national decision-making on education as well as development work and international comparison.
- School inspections were abolished in the early 1990s. The ideology is to steer through information, support and funding. Objectives are laid down in legislation as well as the national core curricula and qualification requirements. The system relies on the proficiency of teachers and other personnel.
- Strong focus on both self-evaluation of schools and education providers and national evaluations of learning outcomes. National evaluations of learning outcomes are done regularly, so that there is a test every year either in mother tongue and literature or mathematics. Other subjects are evaluated according to the national evaluation plan.
- The evaluations are sample-based. The education providers receive their own results to be used for development purposes.
- The main aim of the national evaluations of learning outcomes is to follow at national level how well the objectives have been reached as set in the core curricula and qualification requirements. Consequently, the results are not used for ranking the schools.

Evaluation bodies and evaluation plan

- The Finnish Education Evaluation Centre (FINEEC) is an independent government agency responsible for the national evaluation of education.
- The evaluations of FINEEC cover the education system in its entirety, from early childhood education to higher education. The scope ranges from evaluations of the functionality of the educational system to thematic and system evaluations, learning outcome assessments and quality system audits.
- FINEEC comprises an Evaluation Council, a Higher Education Evaluation Committee and units for the evaluation of general education, vocational education and training (VET) and higher education.
- FINEEC has a key role in determining the evaluation targets, since it draws up a proposal on the National Plan for Education Evaluations to the Ministry of Education and Culture for a four-year period at a time, see <http://karvi.fi/en/fineec/>

Focus areas regarding the evaluation of education, 2016-2019



Evaluation projects 2016-2019, examples

- Student transitions and smooth study paths at educational transition phases
- The impact of national budget cuts on educational rights
- Implementation of the Pupil and Student Welfare Act
- Pupil assessment in basic education and general upper secondary education
- Dealing with bi- and multilingualism in Swedish-language schools
- Evaluation of the reform of the vocational qualification requirements
- Changes in the role of teachers, and the capacity of teacher education and continuing education to respond to the changes
- International comparison of the integration of immigrants into the educational system
- Digitalisation of the assessments of learning outcomes