

Haridus- ja Teadusministeerium

## The Estonian education system Estonian students' achievement in PISA Overview of the Estonian experience

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### Estonia

- Estonia, a small Eastern European country of 45 000 square km with a population of 1.3 million.
- In 2014, its per capita GDP was around USD 28 140 compared to the OECD average of USD 39 333.
- The rate of educational attainment at the secondary level is among the highest in the EU and OECD areas.
- Estonia has one of the strongest education systems among all OECD countries, with above-average results in PISA and almost universal access to pre-primary education.

# Institutions and numbers of students (2016/2017)

Level of education	Age Number of institutions		Number of children / students
Preschool education	0 - 6	635	67,575
<b>General education</b>		519	149,161
- Basic education	7 - 16	351	122,939
- Upper secondary education (+adult ed gymn)	16 - 19	168+16	26,222
Vocational education		38	25,071
Higher education		21	47,794

## Estonian formal education system

- General education is divided to
  - \* pre-school,
  - basic and
  - upper-secondary education.
- Children who turn 7 years of age by 1 October of the current year are obliged to attend school.
  - Total number of students -149 161 in schoolyear 2016/2017



## Attendance at pre-primary education

socio-economic profile



# Estonian education system is based on the comprehensive school principle and equity

### Basic school (grades 1-9) is a comprehensive school

- ✓ Schools' curricula are based on the national curriculum
- ✓ The first streaming takes place after grade 9 at the age of 16 (end of the basic school)

### All students have equal access to education

- ✓ Free textbooks
- ✓ Free or very low cost hot meal
- ✓ Hobby education (especially sports and creative activities)
- ✓ Free transport between home and a school
- $\checkmark\,$  Preventive work with children and youth at risk
- ✓ Free support services: speech therapy, social pedagogues, psychological counselling and opportunity to get additional instruction
- ✓ Needs-based financing of schools

# Estonian initiatives and changes to improve the quality of the education

Estonia has launched significant initiatives to improve the quality of the education system. These include:

the establishment of the Estonian Lifelong Learning Strategy 2020;

The goal is reduce the proportion of early school leavers to 9%, 2015 actual – 11,2
 Dropout rate in 2016

- in primary and secondary level 0,2%
- in upper-secondary level 1%
- in vocational schools 25%

adjustments to the mechanisms of school financing;
 the curricular reform in general education etc.

The Estonian Lifelong Learning Strategy 2020 (adopted 2014) sees learning as a lifestyle Five strategic goals have been established:

\* A change in the approach to learning



- The concordance of lifelong learning opportunities with the needs of the labour market
- \* A digital focus in lifelong learning
- Equal opportunities and increased participation in lifelong learning

For the implementation of these goals, the MoER has developed 9 programmes.



## Activities and budget base on the programmes

The programmes of the Estonian Lifelong Learning Strategy 2020

Teachers and School Leadership Programme The Programme for Digital Focus Labour Market and Education Cooperation Programme

The Programme of the General Education

The Programme of the Vocational Education

Study and Career Councelling Programme

The Programme of the High Education The Programme of the Adult Education

School Network Programme

The programme of the entreprenerial and entrepreneurship education for general, vocational and higher education institutions

### The implementation of National Curriculum

- The implementation of National Curriculum consists of two interconnected area.
- These are:
  - ✓ the content and organization of science teaching and learning, as it is specified in Natiomnal Curriculum;
  - extracurricular activities, at schools and outside the schools such as field studies, science competitions, conferences, programs and projects, science clubs, hobby centres, etc.

### Estonian National Curricula (NC)

The first NC was adopted in 1996.

#### The Estonian Natonal Curriculum for Basic Schools 2014

#### Core Values:

- general human values (honesty, compassion, respect for life, justice, human dignity, respect for self and others).
- social values (liberty, democracy, respect for mother tongue and culture, patriotism, cultural diversity, tolerance, environmental sustainability, rule of law, solidarity, responsibility and gender equality).

#### **Cross-curricular topics:**

- lifelong learning and career planning;
- environment and sustainable;
- civic initiative and entrepreneurship;
- cultural identity;
- information environment;
- technology and innovation;
- health and safety;
- values and morals.

#### General competences:

- cultural and value competence;
- social and citizen competence;
- self-management competence;
- learning to learn competence;
- communication competence;
- mathematics, natural sciences and technology competence;
- entrepreneurship competence;
- digital competence.

#### Subject fields or learning areas:

- language and literature;
- foreign languages;
- mathematics;
- natural science;
- social subjects;
- art subjects;
- technology;

Learning and Educational Objectives

The Development and Implementation of School Curriculum

### Subject fields (learning areas) and the syllabuses of the compulsory subjects in basic schools

Language (Estonian or Russian) and literature

Foreign languages

Mathematics: mathematics

Natural science: science, biology, geography, physics, chemistry

Social subjects: personal, social and health education, history, civics and citizenship education

Art subjects: music, art

Technology: employment studies, handicraft and home economics, technology studies

Physical education: physical education

# Estonia in PISA (Program for International Student Assessment)

\* PISA survey- Estonian learners have a good level



## Estonian results in 2015

	Science		Reading		Math	
1	556	Singapur	535	Singapur	564	Singapur
2	538	Japan	527	Hongkong (China)	548	Hongkong (China)
3	534	Estonia	527	Canada	544	Macao (China)
4	532	Chinese Taipei	526	Finland	542	Chinese Taipei
5	531	Finland	521	Irland	532	Japan
6	529	Macao (China)	519	Estonia	531	B-S-J-G (China)
7	528	Canada	517	Korea	524	Korea
8	525	Viet Nam	516	Japan	521	Switzerland
9	523	Hongkong (China)	513	Norway	520	Estonia
10	518	B-S-J-G (China)	509	New Zealand	516	Canada

### Science performance and equity in PISA (2015)



Source: OECD PISA database, A. Schleicher

## Learning time and science performance

#### Figure II.6.23



Source: OECD PISA database, A. Schleicher

### Supporting of all children



Estonian educational system is based on equality and the comprehensive school principle.

- Students are not selected based on academic capabilities or results.
- Schools must provide the best learning environment for everyone regardless of their family's home environment or income.
- Significant amount of attention is paid on students with special educational needs.

### Supporting of all children

- The support systems for children with learning difficulties, social problems and for children/students with special educational needs (inc. gifted students, talented athletes)
- Social support (free textbooks and lunches, etc.)
- Free supplementary pedagogical guidance outside the classroom (special teachers, social pedagogues, psychologists, etc.)
- Flexible learning possibilities



### **Guidance and counselling centres**



2 types of centres in 2008-2013

 pedagogical-psychological counselling centres
 career guidance centres



Pathfinder Centres 2014 - 2016 Provide integrated services: career information, career counselling, psychological, socio-pedagogical, special education counselling and speech therapy.



Source: OECD PISA database, A. Schleicher



Mean science score

On average across OECD countries, advantaged schools offer science clubs and competitions more often than disadvantaged schools do



- These differences were not observed in Estonia. The low-performing students in Estonia have same opportunities to acquire scientific competencies, such as by participating in science-related extracurricular activities, than top-performing students.
- There was not differences of science-specific resources between socioeconomically disadvantaged and advantaged, urban and rural, public and private schools in Estonia.

## **Differences in educational resources**

between advantaged and disadvantaged schools

The low-performing students in Estonia have same opportunities to acquire scientific competencies, such as by participating in science-related extracurricular activities, than top-performing students.

There was not differences of science-specific resources between socioeconomically disadvantaged and advantaged, urban and rural, public and private schools in Estonia.
Figure I.6.14



# The state provides support to hobby education



- The state and local governments provide support to schools and teachers in organizing extracurricular activities.
- The financing of the extracurricular activities, such as field studies, science competitions, conferences, programs and projects, hobby centres, are covered by state budget etc.
- The most of the Hobby Schools (HS) are in the jurisdiction of Ministry of Culture. HS activities attach children to their own everyday life, and their interests and motivation in study increase in general.

# Investments in nature and environmental education centres

- Total number of students in Estonia 149 000 in schoolyear 2016/2017. We have 130 nature or EE centres in Estonia.
- Last EU Structural Funds period were invested in infrastructure 22,3 million and in nature education 3,2 million EUR.



http://www.keskkonnaharidus.ee/en/

### Some examples

- Environmental Education Centre of Pärnu County <u>https://www.visitestonia.com/en/pernova-education-centre</u>
- Tartu Environmental Education Centre <u>http://www.tartuloodusmaja.ee/EN/</u>
- Estonian Museum of Natural History <u>http://www.loodusmuuseum.ee/en</u>
- The Environmental Education Centre of Tallinn ZOO <u>http://tallinnzoo.ee/en/education/</u>
- AHHAA Science Centre









content/uploads/2014/09/DJI02616-loodusoppekeskus-1.jp

Source: http://tallinnzoo.ee/wp

### Digital focus in lifelong learning



- Estonia is one of the most advanced e-societies in the world. WiFi covers all country.
- Estonia has become became E-stonia with the help of a government-backed technology investment body (called the Tiger Leap Programme). All Estonian schools were online by the late 1990s.
- A digital focus in lifelong learning and school's digital infrastructure is shaped in the collaboration with the Ministry of Economic Affairs and Communications.

### The reasons for the Estonian success

Education is valued in EstoniaEqual opportunities



- Comprehensive school system the compulsory education is free of charge
- Only one National Core curriculum for all
- At basic school level (grades 1-9) no differentation
- Decentralized school system. Schools and teachers have a wide autonomy

### **Estonian teachers**



- The professional teacher.
- Academically qualified teachers at all levels of education. Across OECD countries.
- ↔ Have a great autonomy.
- Since the school system is effective, there is no need for private teachers /induvidual teaching after schoolday

Topics where we have not achieved the goals and do not have the hope of achieving by 2020

- ✤ The share of early leavers from education and training is 2% higher than we expected – 11%.
- The attractiveness of the teaching profession have not improved.
- The distribution of basic school graduates between vocational and general education has shown little change in the past 10 years.
- Differences in proficiency among students of the Estonian and Russian medium school.

### Conclusions

- Education is a priority both for the state and local level.
- The common goals and a good collaboration between different ministries.
- The schools have greater autonomy over what is taught and how students are assessed.

## **Thank for attention**