



ESTONIAN EDUCATION SYSTEM 1990-2016

Reforms and their impact

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Introduction

The following paper gives an overview of education reforms in Estonia since 1990. The paper is divided into three chapters. First chapter gives an overview of strengths of the Estonian education system. Second chapter brings out and analyses most important reforms carried out during last 25 years. As the education system is continuously being reformed, the third chapter is dedicated to plans and future challenges.

History

The Estonian education system has a long history – first academic schools were founded in 1630 (Tartu) and 1631 (Tallinn). In 1632 the first university, the University of Tartu, was founded. In the second half of the 17th century first Estonian folk-schools were opened. The aim of these schools was to provide education in the native language, so students could read the Bible. According to the census in 1897, the level of literacy in Estonia was 79.9%, which was highest in the Tsardom of Russia (56.3% in Moscow and 62.2% in Saint Petersburg). In 1920, six grades of education was made compulsory, it rose to eight grades in 1959-1963 and nine grades in 1968-1988. Estonian education system maintained its peculiarity during the Soviet occupation – teaching was in Estonian; the atmosphere in schools derived from progressive ideas and democracy; textbooks were by Estonian authors; teaching arts, music and foreign languages were given a great emphasis.

Education system today

The governance of the education system is shared between central and local authorities, schools have a high level of autonomy in resource allocation. The state sets national standards and establishes principles of education funding, supervision and quality assessment. Early childhood education and care is managed by local authorities and most decisions in lower secondary education are made by the school. Most schools are public (96%, compared to the OECD average of 81.7%). Higher education is divided between professional higher education institutions and universities. Both can give a doctoral degree and are accessible to graduates of general and vocational upper secondary schools. Estonia's expenditure on educational institutions as a percentage of GDP and per student (for all education levels combined) is below the OECD average, with a higher share of public funding than the OECD average.

Public opinion

Long history of folk-schools has shaped the opinion that education is greatly value. Also, the high level of secondary education and parents' expectations to their children reflect that. 90%

of 25-64 yo in Estonia have at least secondary education (in comparison, OECD average is 75%). This is the highest result among the members of the European Union. 45% of 25-64 yo women have higher education (OECD average is much lower – 34%). Secondary students' parents have more books at home and this contributes to general knowledge. In Estonia there are on average 176 books per home, in Latvia 154 and Lithuania 120.

1. Strengths of the Estonian education system

Estonia is an overall high performer in PISA 2012, with policies that promote equality in the education system. Estonia achieved higher results in mathematics, reading and science, compared to other OECD countries. Results have improved in reading, but remained unchanged in mathematics and science, compared to previous PISA cycles.

- **Estonia has the smallest number of low performers in Europe** and very little compared to the whole world.
- **The difference between rural and urban students' education levels is the world's smallest.**
- **Socio-economic background of students' parents has little influence on students progress.** It means that children originating from underprivileged families can get high results in school.
- **Estonia has least students without basic education in the world.** Only 5% of all students don't achieve basic education. E.g. in Iceland there are 24%, in Switzerland 12.8% and in Lithuania 16.15%.
- **Participation in early childhood education and care, which is mainly provided by public institutions, is higher than in other OECD countries.** While compulsory school attendance generally begins at age 7, almost all 4-yo (91%) and most 3-yo (87%) were enrolled in early childhood education institutions in 2013 (well above the OECD average of 84% for 4-yo and 70% for 3-yo).
- **Grade repetition is among the lowest in OECD countries,** with only 3.5% of 15-yo students repeating a grade at least once, compared to the OECD average of 12.4% in PISA 2012.

2. Reforms in the education system in 1990-2016

2.1. Compulsory education and upper-secondary education

The basic education (grades 1-9) is compulsory in Estonia. It starts with the first full school year after children have reached age 7 and continues until students have satisfactorily completed basic education or have reached the age of 17. The system does not differentiate between primary and lower secondary education – basic school is treated as one stage. After completing the basic school satisfactorily, students can continue their education in upper secondary education schools (grades 10-12) or vocational education institutions free of charge.

Development of the national education system

Main aims of the educational reforms in 1990s were to "de-ideologise" education and set foundations to the national education system. The process included writing new curricula, textbooks and other curricular materials, as well as retraining teachers.

One of the aspects that gave Estonian education system a good starting point in 1990s, when the independence was regained, was that Estonia had permission to deviate from Soviet Union requirements in 1960s and 1970s (e.g. 11-year secondary education in contrast to the official 10-year across; permission to have Estonian authors write some textbooks; use of different curricula etc).

In late 1980s and early 1990s most education institutions relating to Soviet times were closed or rearranged and new institutions were established. In this process, the Open Estonia Foundation (OEF) played the key role. In 1994 OEF supported a series of seminars entitled "Independent School" dealing with school development, management, policies, testing and legislation. A year later OEF launched a series of seminars for school leaders. This initiative developed into a network of "Schools of Distinction" that became the ground for multiple initiatives in curriculum development, school renewal and improvement of school management. In 1998 OEF supported the launch of the project "Quality Management System in Estonian Schools". The aim of the project was to develop quality system modules and put them into practice.

The legal framework of the Estonian education system was laid by several laws adopted in 1990s. The most important laws and legislative acts for the primary, basic and secondary education were:

The Law on Education of the Estonian Republic (1992) – general principles.

The Law on Basic and Upper Secondary Schools (1993) – conditions for establishing, operating and closing state and municipal primary and basic schools and gymnasia; principles for governing basic and general secondary education.

The National Curriculum (1996) – basic principles of schooling, framework for all the organisations of teaching regardless of the language. Schools develop their individual curricula based on the national curriculum. National curriculum provides a list of compulsory subjects with a syllabus (list of subject content) and study time (number of lessons) for each subject.

The Law on Private Schools (1998) – conditions for establishing and operating schools that are owned by private individuals or legal entities.

The new legal environment was different from the Soviet Union's. The cornerstone of the legislation was the requirement to provide education to all children living in Estonia according to their abilities, including children with special needs. In Soviet Union there was an understanding that certain disabled children should not be educated, in Estonian legislation the education of children with disabilities is supported. Expenses of the teaching staff, school principals, their deputies and school textbooks (regardless of school ownership, throughout the secondary education and in accordance with the number of students) are financed by the state through the budget of the Ministry of Education. All other expenses are borne by the authority responsible for the school (central government, municipality or private entity).

In the first half of 1990s the focus was on the search of new leaderships at all levels of the system. Teachers training changed towards Western examples (concerning both structure and content).

In the mid-1990s Estonia started to develop central quality assurance mechanisms – centrally administered assessments and examinations. The development resulted in an elaborate system of externally set and/or administered tests, including national assessments for grades 3 and 6, as well as national tests for grade 9 and exams for grade 12. The grade 12 exams have school graduating and university admitting functions at the same time. It was the time, when the philosophical background of the education and the national strategy was discussed in informal and also state-wide groups. Different projects to establish intellectual foundations for reform and prepare school leaders, teachers and others were initiated.

New strategies were carried out in late 1990s. The legal framework of the education system was updated. In 1997 the development of "Estonian Scenarios 2010" started that later led to "Estonian Education Scenarios 2015". Wider consensus was found with the scenario called "Learning Estonia", that was also presented in the Parliament.

During 1990s with decentralizing the Estonian school network, local municipalities got more responsibility to plan and maintain the quality of education. Estonian headmasters have autonomy when choosing school personnel, controlling school budget; Estonian teachers have autonomy when choosing study materials and during evaluation process. Research indicates that decentralised education systems provide more equal opportunities for students to gain high quality education.

The new national curriculum, accepted by Parliament in 1996, focused on school outputs. It described competencies, or standards, to be achieved at the end of each school stage and provided guidance about how to organise a student-centered learning process in school. In 2011 the national curriculum was separated into two frameworks: one for lower secondary and one for upper secondary. Each framework enabled schools to develop their own curricula, while taking students' interests and regional cultural differences into account.

New amendments came into force under the Basic Schools and Upper Secondary Schools Act. These amendments mainly aim to:

- 1) clarify the rights and duties better of all involved parties (parents, schools, local government);
- 2) set bases for management and funding of schools, as well as for state supervision of teaching and school activities.

They also aim to help enforce compulsory school attendance and reduce early school leaving. For example, they mandate a regular update of databases to help detect children with school attendance problems. Additionally, among objectives of these amendments is improving availability of support services in schools, such as career counselling and guidance, social pedagogy, psychology and speech therapy. Starting in 2014, provision of these services has been organised through the regional centres of Pathfinder (Rajaleidja).

In February 2014, the Government adopted the Estonian Lifelong Learning Strategy 2020. This document guides the most important developments in education and is the bases for the government decisions for educational funding for 2014-2020.

The general goal of the Lifelong Learning Strategy is to provide all people in Estonia with learning opportunities throughout their lifespan. Opportunities are tailored to their needs and capabilities, in order to maximize dignified self-actualization within society, work, as well as family life.

To pursue the general goal, five strategic goals have been established:

1. **Change in the approach to learning.** Implementation of an approach to learning that supports each learner's individual and social development, the acquisition of learning skills, creativity and entrepreneurship at all levels and in all types of education.
2. **Competent and motivated teachers and school leadership.** The assessment of teachers and headmasters, including assessment of salaries' consistency to qualification requirements and the work-related performance.
3. **Concordance of lifelong learning opportunities with the needs of labour market.** Lifelong learning opportunities and career services that are diverse, flexible and of good quality should result in an increasing number of different age people with professional or vocational qualifications and in increasing overall participation in lifelong learning across Estonia.
4. **A digital focus in lifelong learning.** Modern digital technology is used for effective learning and teaching. An improvement in the IT skills of people has been achieved and access to the new generation of digital infrastructure is ensured.
5. **Equal opportunities and increased participation in lifelong learning.** Equal opportunities for lifelong learning have been created for every individual.

Educational and social factors that decrease social and economical inequality

There are many methods that help decrease social and economical inequality in the educational field. Already before restoration of Estonia's independence the students were granted with psychological help and speech therapy, also private consultations for the students who had trouble with learning.

Since 2006 every Estonian basic school student gets a free school lunch. Many local municipalities offer "morning porridge" who are in need. Since 2014, also every upper-secondary student gets a free school lunch.

Many local municipalities also offer a so-called "financial school support" for the families who need it (for text books and other school supplies). Free healthcare is secured for every Estonian student.

Funding

Schooling is free in Estonia for all students according to their needs. Between 2005 and 2012 annual expenditure per student increased by 30%.

The government changed its school funding model from 'per capita' to 'per class' criteria in 2008, allowing more equal distribution of funds to rural schools.

ICT development – the Tiger Leap

The initiative began in 1990s with the commitment to ensure that all students had access to computers. Today it has evolved into far broader aim to ensure competitiveness in the global information economy.

In early 1990s, the ICT infrastructure in education system was out of date and inadequate compared to western countries and users had little experience. Nevertheless, the academic computer knowledge was relatively high and there was a remarkable level of interest and readiness among wider audience.

The first school computer programme was implemented in 1987-1992, when approximately 3000 computers were sent to schools. All basic schools received 1-2 computer stations and all high schools had one classroom with Estonia made computers. Unfortunately there were several difficulties – computers were unreliable, many of them broke down and were neglected. It was hard to find teachers, because the subject did not exist in official curricula.

In 1992-1996 the state invested about 0.2 mln USD annually into schools' IT equipment. About 40 Estonian schools managed to equip proper computer classrooms. Also, developing suitable software for the Estonian study programs started.

The Tiger Leap National Programmes were launched in 1996 by the president Lennart Meri. It was the start of modernization of the Estonian education system. The new national curriculum for basic and secondary schools was adopted in September 1996. In 1997 the Ministry of Education, computer companies and private persons established the Tiger Leap Foundation.

Goals of the programme were to provide Estonian teachers with elementary computer skills; to develop the curriculum and learning environment; to connect the Estonian education system with international information databases; to encourage the creation of original software for

Estonian language, culture, history and environment; to develop information systems for education and to establish regional computer skills teaching centres.

In 1996-1998 the availability of hardware throughout Estonia improved significantly (from 50 students per computer to 20 students per computer), the use of computers and internet in school programmes increased. The Tiger Leap programme also helped to improve co-operation between the state, schools and service providers.

Teachers

Teachers have very high qualification standards in Estonia – they need to have a masters degree and a teaching profession. During the last decade Estonia has strived to increase teachers salary (table 1).

Table 1. Average monthly gross salary of teachers 2005-2016 (EUR)

Year	Average monthly gross salary of municipal school teachers	Average monthly gross salary of state school teachers	Average monthly gross wages and salaries in Estonia	Minimum salary rate of teachers
2005	555	501	516	365
2006	593	604	601	447
2007	719	682	725	528
2008	850	817	825	644
2009	810	837	784	670
2010	783	838	792	644
2011	797	861	839	644
2012	812	876	887	655
2013	930	941	949	715
2014	1025	1028	1005	800
2015	1135	1168	1065	900

Source: www.haridussilm.ee

Although it's not comparable to OECD richer countries, the increase in salary has been one of the quickest during last 10 years. Although salaries of teachers have risen, current levels are considered insufficient to make the teaching profession attractive. Additional funds have been allocated from the state budget to continue the increase.

To encourage newly qualified teachers to work in small towns and rural areas and teachers fluent in Estonian to teach in schools where Russian is the main language, they are offered an

allowance of more than 12 750 EUR during the first three years of teaching with the obligation to work there at least for 5 years.

Higher education institutions providing teacher training have formulated common competency standards for teachers and articulated a development plan for the teacher-training system.

In 2013 new professional standards for teachers were set to develop continuous teacher training and to assess future teachers' readiness to enter the profession. Organising the continuous training is based on the concept of continuous education of teachers and heads of school, implemented by the Ministry of Education and Research in co-operation with its partners.

Education in Russian language

Almost one third of the Estonian population is formed by the ethnic Russian community.

In 1997 the Ministry of Education initiated the development plan for Russian-spoken schools as part of the 1997-2007 Activity Plan for a unified Estonian education system. In 1998 the government approved the plan and Russian-spoken schools started their transition towards Estonian curricula.

Over two decades, supporting language studies of children with Estonian as a second language and supporting studying in Estonian in general has been prioritized. Both policy formulation as well as parliamentary support have aimed to enforce this goal. In 1993 a Primary and Secondary Education Act was passed that set Estonian as the official studying language, but as a result of public discussion, Russian was also allowed in middle schools. In November 2007 the Government approved a step-by-step plan to fully implement Estonian as the educational language. According to the plan, by 2011 all schools should have had at least 60% of subjects taught in Estonian. Since 2009 it is also obligatory to teach Estonian in all non-Estonian speaking pre-schools and kindergardens to children aged 4 and above. To support this, the state has allocated money for salaries of Estonian teachers in pre-schools and kindergardens, supported teachers training and issuing of study materials. Although the law passed in 1993 does not make it compulsory to teach in Estonian in middle schools, majority of schools teach some of the subjects in Estonian. State has also supported local municipalities to help make the Estonian study environment more effective. Since 2014 Russian-spoken schools also started to shift towards Estonian-based vocational education.

Intrnational curricula

The possibilities to acquire general education in different languages contribute to the rotation of foreign and estonian diplomats and foreign experts to come and work in Estonia.

According to the Basic Schools and Upper Secondary Schools Act, it is possible to conduct studies in Estonia with curricula formulated under the aegis of either the International Baccalaureate Organization (IBO) or the Statute of the European Schools. These curricula are designed foremost for the children of the foreign officials and specialists working in Estonia.

2.2. Higher education

There are different academic and non-academic options to aquire higher education. Non academic higher education can be obtained via secondary education based on professional higher education programmes, that last three to four years. Part of programmes is always the practical training. Academic higher education is devided into three levels – Bachelors, Masters and Doctorate. In 1991-1994 the first level lasted for five years and after that a Bachelor degree was received. In 1995 the system changed and four-year Bachelor programmes were introduced. Since 2002 the nominal time for a Bachelor degree is three to four years (depending on Masters duration). A secondary school diploma and a certificate of national examinations is needed for admission to the higher education institution. Other and more specific requirements depend on the institution and area of specialisation.

Similarly to the basic and secondary education, the higher education has also undergone fundamental changes since Estonia regained independence. The changes have been made in almost every field of higher education – from curricula to funding and stucture.

In the 1990s the legal framework for the higher education system was established. In contained several laws and legislative documents:

Law on Universities (1995)

The Standard of Higher Education (1996) – requirements to higher education, licences and accreditation

Law on the Organisations of Research and Developmental Activity (1997)

Law on Applied Higher Education Institutions (1998)

Other main documents shaping the Higher Education Policy in Estonia (previously and currently):

Higher Education Strategy 2006-2015 (2006) – approved by the Parliament

Higher Education Internationalization Strategy for 2015 (2007)

OECD recommendations - "Thematic Review of Tertiary Education" (2007)

Estonian Life Learning Strategy 2020;

Early and mid-1990s are characterized by the demolition of the old and building up the new legal environment. It can also be seen as the period of shock and survival. The second half of the decade saw the expansion of the higher education system in combination with the development of legal frameworks and quality assurance mechanisms for different sectors. It was the period of 'step by step' improvement. The beginning of the millennium encountered new reforms, hallmarked by the higher education reform plan in 2001. It was the period for recovery. The last decade is best characterized by the performance-based model in the Estonian higher education.

Bologna process in Estonia

Estonia was among the countries who signed the Bologna Declaration in 1999.

Large scale changes started already in the beginning of 1990s by removing Soviet ideology from programmes, increasing universities' autonomy, introducing the credit accumulation system based on student workload and accreditation system. Bologna process was seen as a continuation of these developments, an opportunity to increase the competitiveness internationally (comparable degree structure) and broadening the students' choices (national and international mobility). In 2001 the Government approved the reform plan. Major legislative changes were implemented in 2002 and 2003. Transition to the new degree system was quick due to institutions' interest in these changes. Legalising the basis for recognition of foreign qualifications started in 2005.

Institutions providing higher education

At the beginning of 1990s the economical situation in Estonia changed drastically: the Soviet state-controlled system was replaced by the market-based economy. It also meant that private institutions entered the tertiary education field. Most of the higher education institutions were small, with the enrollment below one thousand. The main focus was on teaching and research came second. The establishment of the Estonian Science Foundation in 1990 and the research audit by Academy of Sweden in 1992 led to the rise of stronger research institutions and universities and closure of the weaker ones.

As a result of the liberal policy of 1990s the higher education system became too fragmented: in 2005 there were 44 higher education institutions in Estonia. By 2016 the number has decreased to 21:

- 6 state universities,
- 1 private university,
- 8 state professional higher education institutions,
- 6 private professional higher education institutions.

The external accreditation of the study programmes started in 1997, when the Higher Education Accreditation Centre was established. A positive accreditation decision on a study programme was mandatory for the higher education institution to issue nationally recognised graduation documents. Accreditation committees were comprised of experienced foreign experts. The full accreditation was given for seven years, conditional accreditation for three years and the decision of negative accreditation resulted in the closure of the study programme. Institutional accreditation was voluntary during that period. A total of more than 1400 study programmes and six institutions were accredited during 1997-2009. Since 2009 the accreditation of higher education institution is mandatory and is conducted for the period of seven years. Study programmes are assessed in a specific study programme group and in a specific academic field (e.g. professional higher education, bachelor studies, masters studies, doctoral studies).

Enrollment in higher education

In the schoolyear of 1993/1994 there were about 25 000 students altogether in Estonian higher education system. The number increased year by year and reached its peak at 2005/2006, when there were about 68 000 students. During the last decade the number has decreased and in the last schoolyear (2015/2016) there were about 51 000 students enrolled. The decrease was caused by the demographical situation as the number of young people in society was lower than before.

Higher education reform 2012

In 2007 OECD analysis concluded that Estonian higher education funding system did not match the needs of labour market. The labor market needed more specialists in some fields than universities could provide, e.g. teachers, engineers. The other problem was that the system distorted the possible free choice of students. About 50% of students paid tuition fees. The number of free study positions in some fields drew the talented students to study in the fields they did not like, because it enabled them to study for free. This system was inefficient, the

completion rate in some fields was below 30%. The responsibilities of the state and universities were unclear.

In 2008 the University Act was changed. The funding system was changed to more goal-oriented (activity support). In March 2011 at national elections one of the main topics was the higher education system. After the elections the first drafts were worked out and presented in the Parliament. The new University Act was adopted in 2012. Quality became the overarching goal in the higher education system. The aim of that reform was also to increase the fairness of the system, the efficiency of studies and to reduce the gap between the various fields of higher education. From 2013 all full-time students do not have to pay tuition fee. The number of study positions is determined by universities' teaching capacity and performance agreement. New type of activity contracts were introduced, the additional funding depended on the new contract. Performance contracts made possible open discussions about quality issues, cooperation and focus areas of universities and set the goal for improvement.

In the academic year of 2013/2014 need-based study allowances were introduced. The aim of new measures was to support higher education studies of students with economical difficulties. In 2014 new type of scholarships were added to motivate students to work in STEM (Science, Technology, Engineering and Math) areas.

Funding

In 1995-2012 higher education institutions were funded from the state budget for the provision of graduates (i.e. state-commissioned study positions, about 80% of the funding), capital investment and other expenditure (library costs etc). Cost of study positions varied across fields of study (different funding coefficients). In 2010/2011 51% of study positions were state-commissioned (free).

In 2013 higher education reform in Estonia came into force and higher education funding principles were changed; input oriented funding formula was replaced by performance agreement based funding model.

70-75% of the activity support for higher education institutions is based on activities connected to the extent, quality and efficiency of provision of instruction.

- **Indicators for extent:** the number of students admitted, the number of students studying in educational institutions in foreign countries, the number of foreign students

studying in the university, the number of external teaching staff employed as regular staff and the number of full-time students as the extent of provision of instruction.

- **Indicators for quality:** goals reached that were established in the previous performance agreements, results of matriculated students, continuation of studies at the next academic level and the employment of graduates as the quality of provision of instruction.
- **Indicators for efficiency:** number of graduates from the university and number of graduates in broad groups of studies of national importance as the efficiency of provision of instruction.

25-30% of the activity support is aimed to the provision of instruction of national importance (professorships of national importance, targeted funding for certain colleges or university libraries etc) .

From January 1st 2017 Estonia plans to correct the funding model, because the existing model can induce sudden unreasonable fluctuations in funding.

Higher education institution funds in the budget will be distributed:

1. activity support for higher education institutions
2. targeted funding.

Activity support will consist of baseline funding (at least 80%), based on the average activity support received during last 3 years;

- performance funding based on performance indicators (up to 17%)
- performance funding based on performance agreement (up to 3%)

Objectives are negotiated and agreed (also for targeted funding) in 3-year performance agreements.

3. Challenges in the future

1. **Ageing staff causes the need to make teaching a more attractive profession for youth to avoid future shortage of qualified teachers.**

There are 14 329 teachers in Estonia, with an average age of 47.4 years. There are only 9% of teachers who are younger than 30, the goal for 2020 is 12.5%. Proportion of female teachers is 86%, the goal for 2020 is 75%.

Possible solutions:

- Higher salary. The goal for 2019 is teachers' salary to be 120% of Estonian average salary.
- More rights for the teachers.

2. Further incorporation of IT into learning process.

The importance of information technology has considerably increased in daily life. Improved availability of internet via various digital devices and data communications packages has provided access to a huge amount of information and possibilities. Better skills to use technology and innovations would support the increase in productivity in economy.

Possible solutions:

- Better integration of IT into curricula.
- Encouraging teachers to use IT technologies in teaching.
- Implementing e-assessment methodology and tools.
- Supporting digital learning resources in schools.
- Producing interoperable software solutions, commercial and non-commercial study materials.
- Increasing the use of personal digital devices (BYOD) for studying.

3. Estonian education system needs to adapt to decreasing number of school-age children.

Due to demographic changes, the number of students has decreased about 40% in last 15 years. Estonia is currently reviewing its school system to help maintain basic schools that are close to students' homes, while ensuring the quality and diversity of upper-secondary education study choices in county centers.

Possible solutions:

School Network Programme 2015 – 2020 (241 million EUR investments).

- The responsibility for basic education lies with local governments, the responsibility for secondary education with the state.
- Establishment of state run secondary schools in county centers (at least 15 schools).

- Optimising and updating the basic school network.
- Reorganising the school network for students with special educational needs (reducing the number of schools by third).
- Ensuring adequate conditions in basic schools to integrate students with less serious special needs.

Conclusions

There is a long history of schooling in Estonia, education is highly valued. Social and educational systems help students from different socio-economic backgrounds get equally good education. Teachers have very high qualification standards in Estonia, school system is decentralised, tasks are clearly separated between local and state governments. As an IT-country, Estonia is working on better integration of IT into curricula. Our challenges are related to demographic changes, changes in school network and making teaching a more attractive profession.

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