

3.0 Introduction

Education as a means of generating income

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KEY MESSAGES

- **Education is a source of personal fulfilment, a signal of labour quality and a means of generating income.** The consumption value of education is difficult to measure, but research suggests that in Estonia it largely functions as a positional good: education pays off when others are less educated. An exception is vocational upper secondary education (four years), whose graduates earn less than those with general upper secondary education (three years).
- **Education yields relatively low returns in Estonia, as an additional year of schooling generates a smaller wage increase than in other European countries.** On average, each additional year of education raises wages by about 6% in Estonia, compared with 8–10% elsewhere. As expected, the so-called ‘winning generation’ born in the 1970s enjoys higher returns. Somewhat unexpectedly, returns to education are higher for women than for men.
- **The teacher labour market, in terms of both wages and employment, offers grounds for cautious optimism.** Incomes are rising, unemployment is virtually absent and flexibility, including gig-type work, is increasing. The core of the workforce consists of 40–60-year-olds working above full-time load and benefiting from the current wage model. This model combines elements of a fixed and a career-stage system: age, education and experience bring salary increments, but performance is not always adequately rewarded.

INTRODUCTION

Learning is enjoyable, though in Estonia this is not universally acknowledged. Education functions largely as a signal to employers and society, indicating personal ability, discipline and social status. As a society, we tend to embrace a meritocratic ideal, viewing education as the

foundation of innovation, competitiveness and social cohesion, while often overlooking the fact that access to education is shaped by place of residence, parental income and special educational needs. The meritocratic view – that outcomes depend solely on individual effort –

is rarely accurate and is most often endorsed by those who have themselves benefited from educational success.

As in other post-socialist countries, returns to education in Estonia are relatively low. This may be seen both as an opportunity and as a challenge. A systemic lack of demand for ‘talent’^a is problematic, as it can create a vicious circle: high achievers are not sufficiently supported because investment in them does not yield economic returns. At the same time, education is inherently selective and reproduces elites, and relatively low returns may also reflect broad accessibility.

At the centre of the education system is the teaching workforce. Teachers’ average income has risen rapidly. However, pay does not increase sufficiently during the first years of teaching, even though this is when professional development is fastest and impact on learners is greatest. Furthermore, teachers who work in more demanding classrooms – for example, with pupils with special educational needs or lower socio-economic backgrounds – or who teach more demanding subjects do not receive higher pay. The current wage model is therefore rigid and not performance-based.

DISCUSSION

In 2025, education researchers began to receive indications from various channels that the European Commission had defined excellence in education as a policy priority. At the presentation of the ‘PISA book’,¹ criticism was voiced that current approaches risk suppressing top performers, and the Commission subsequently asked our research group to prepare an overview of evidence-based practices for achieving excellence.² Learning Lab – a platform established jointly by the European Commission’s Directorate-General for Education and Culture (DG EAC) and the Joint Research Centre (JRC) to promote a culture of evaluation in education policy – increasingly began to address what has been termed the ‘excellence problem’. The summary of the latest PISA study notes that

although average mathematics scores fell by 15 points and reading scores by 10 points in 2022, the decline was greatest among high-performing pupils.³ The excellence problem may therefore also be described as a shortage of high-achieving pupils.

Paradoxically, most education research projects over the past decade have focused, at least in part, on equality and inclusion. This does not change the data or analytical tools available, but it often leads to different research questions and policy recommendations, as few policy approaches are capable of simultaneously improving outcomes at the lower end of the distribution and strengthening performance at the upper end. Average results reflect the shape of the distribution: since educational outcomes generally follow a normal distribution, average PISA scores could in principle be raised either by reducing the lower tail or by thickening the upper tail of high achievers. Ideally, both strategies would be pursued.

The three articles in this chapter examine the relationship between education and the labour market, focusing on the wage premium associated with education and the productivity challenge in Estonia. In the first article, Jaanika Meriküll and Tairi Rõõm show that each additional year of education increases wages in Estonia by an average of 6%, below the international benchmark of 8–10%. Returns are highest among the so-called ‘winning generation’, those born in the 1970s, who were the first to receive education aligned with a market economy.

In the second article, Kaspar Oja shows that, in addition to the below-average return to an additional year of education, individuals with vocational education earn even less than those with general upper secondary education. This relationship is primarily descriptive and does not control for selection effects, as pupils with stronger academic performance are more likely to remain in general upper secondary education.

^a The word ‘talent’ is placed in quotation marks because terminology in this field remains contested. In official discourse, including at the level of the European Commission, the term ‘talented’ has been discouraged on the grounds that it labels those who are not regarded as talented. It has also been argued that the concept is imprecise and that talent depends on effort or ambition.

In the third article, Kaire Pöder and Andre Veski conclude, on the basis of data from the Register of Pedagogical Staff, that switching to a centralised teacher wage model – remunerating all teachers equally based on seniority and education level – is not justified. They also argue that concerns about teacher supply may be less acute than often assumed. Rapid wage growth, opportunities for additional earnings through short-term engagements and the anticipated easing of qualification requirements, which lowers barriers to entry, all point in this direction.

At a broader macro level, one might conclude that modest labour market outcomes are not necessarily linked to a relatively weak average level of education, a shortage of innovative high achievers or a large number of disengaged individuals. The underlying cause may lie in the labour market itself. In a small country, demand for ‘talent’ may be limited: universities may employ academics with relatively low citation counts and modest impact indices; individuals with doctoral degrees seldom move into business or politics; and a degree remains a signal whose value must be demonstrated over time. The system is complex: when demand for ‘talent’ declines, both the supply of talent – measured by the number of high achievers in employment – and wages decrease. This weakens incentives to invest in human capital and further reduces the supply of ‘talent’.

We therefore asked how returns to education might be increased – how excellence could be supported without disadvantaging others.⁴ We did not examine the macro-level labour market dynamics outlined above. Evidence-based research has identified certain best practices (although the promotion of ‘excellence’ has more often been associated with less democratic systems and the evidence base remains limited). These practices are presented below.

HOW DO WE MOVE FORWARD?

Drawing on our previous experience, we divided practices and policy measures into two groups. First, system-level choices, such as extending the school year or school day, raising teacher qualification requirements or introducing

early tracking. Second, pedagogical practices implemented at school or classroom level, including individual learning paths, the use of digital technologies and parental involvement. We examined how these choices affect both high- and low-achieving pupils. We define good policy as one that raises performance at the top without holding back those at the lower end.

First, contrary to intuition, we found that teacher qualifications and salary levels do not affect top-performing pupils. There is only weak evidence that subject-specific qualifications among STEM teachers matter. In the reflection on the third article, Eve Eisenschmidt proposes a two-tier dynamic teacher pay fund for Estonia, combining individual teacher contribution with the complexity of the school environment. At its core is a school value-added index (generated by the ministry) for allocating per-pupil funding, which would make it possible to direct additional resources specifically to schools operating in more challenging contexts. School heads could then use a transparent and differentiated pay system to motivate teachers internally. However, if schools receive additional funding because they perform poorly, they may have less incentive to improve.⁵ Preventing segregation between schools may therefore be more effective than trying to compensate for it through funding.

In vocational education, pupils must complete both upper secondary studies and a vocational qualification. Countries with early tracking recognise that vocational education is considerably more costly than general upper secondary education and is therefore given priority in resource allocation. This is not the case in Estonia, as vocational teachers’ salaries clearly illustrate. In his reflection on the second article, Janno Järve calls for an accountability reform, arguing that the public should be informed about vocational schools’ effectiveness and value added. Evaluation should consider entrants’ prior attainment, teacher resources and labour market outcomes. Without renewal of both substance and reputation, vocational education risks stagnation. This is easier to recommend than to implement. In practice, our system-level recommendations largely end here.

We therefore turn to best practices. Although we are not education scholars, we suggest that these can be grouped into three categories.

- **Elite tracking after basic school^b** (specialised streams). Rather than early selection between schools, the literature tends to favour later selection and flexible grouping, such as subject-based ability grouping. The key is not to assign pupils permanently to elite classes but to group them by level within individual subjects. Evidence on peer tutoring is limited but cautiously positive: stronger pupils mentor weaker or younger peers, and both benefit, with stronger pupils often gaining more.
- **Differentiated instruction** combined with self-regulated learning (SRL) and project-based learning (PBL) can enhance top achievement by promoting deep learning and cognitive self-regulation, for example through research-based or creative projects. Self-regulation and self-efficacy, understood as developable attitudes rather than fixed traits, strongly influence outcomes. However, differentiated instruction – especially when supported by technology – tends to benefit more self-regulated and effective learners, who are often already at the upper end of the achievement (and income) distribution.
- **Smart use of technology** enables individual pacing, real-time feedback and skill development. Applications that provide immediate feedback, guide learners along new learning paths and function as AI mentors are particularly promising, but only when integrated into teaching. Even then, technology integration tends to benefit pupils with higher achievement potential, especially when supported by competent teachers. Teachers' digital competence – a combination of attitudes (such as self-efficacy), knowledge and behaviour (the ability to integrate digital tools into lessons) – is complex. Developing it through training is challenging. Our recent experiments show that when teachers do not

perceive how training builds on and extends their existing knowledge and skills, cognitive overload may result, leaving competence unchanged or even diminished.⁶ Many technology-rich teacher training programmes may therefore have limited impact.

The role of education in the economy, viewed as a complex system, can be interpreted in different ways. The simplest view is that investment in education pays off by increasing productivity. In reality, the relationship is more nuanced. Education also has a consumption dimension: people may value learning for its own sake. In Estonia, however, this effect appears on average to be negative, suggesting that education is not widely experienced as inherently rewarding.⁷ If education functions primarily as a signalling or positional mechanism – enabling individuals not necessarily to be more capable but to appear so – the system risks inefficiency. The picture is not entirely clear-cut, as noted in Janno Järve's reflection on the first article: low returns to education may reflect either a weak labour market or shortcomings in the quality of higher education.

It should also be borne in mind that education is subject to diminishing marginal returns: each additional course of study yields progressively smaller gains and may eventually produce no return or even a negative one. In practice, those who pursue further training are usually individuals with more to gain or better access to such opportunities – often more extroverted and flexible adult learners from middle-class backgrounds.

^b In 2025, a case in Estonia sparked controversy when a school grouped pupils according to their average grades. At the same time, the widespread practice of selecting pupils into schools on the basis of prior grades has not attracted comparable public criticism.

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