

## ANALYSIS OF THE EUROPEAN EXPERIENCE OF THE STRATEGY FOR THE DEVELOPMENT OF SCHOOL EDUCATION IN THE CONTEXT OF DIGITALISATION

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**Annotation.** In the context of digitalisation, without socio-economic transformations and increased competition in human capital, effective strategic planning of school education becomes the basis for developing new national systems. This study is devoted to a comparative analysis of the strategy of school education planning in the leading European countries such as Finland, Great Britain, Germany, Italy and Lithuania, for the formation of indicators in Qazaqstan based on the experience of these countries, taking into account the national characteristics of the state. As an analysis of the territory derived from a European state, high results are achieved in international studies of the quality of education, such as PISA, OECD Education at a Glance, and characteristic policies in decentralisation and digitalisation. The purpose of the study is to identify effective strategies and models of international planning, as well as to develop practical recommendations for ensuring effective educational policy in Qazaqstan. The article analyses the main directions of various countries' educational strategies and regulatory documents. As a result, the author systematises the similarities and develops strategies for school education planning approaches in different European countries and Qazaqstan. The conclusion highlights the need to strengthen decentralisation, develop flexible educational trajectories, enhance the external environment's transparency and adaptability, and increase business participation in the planning process through education in Qazaqstan, taking into account both best world practices and national characteristics. Unlike previous studies, this paper is the first to conduct a comprehensive comparison of the strategies of five leading European countries, taking into account digitalization and applies the results to the context of Kazakhstan.

**Keywords:** public administration, education, decentralisation, planning strategies, school education, comparative analysis, digitalisation, European experience.

**Аңдатпа.** Цифрландыру жағдайында, әлеуметтік-экономикалық өзгерістер мен адами капитал саласындағы бәсекелестіктің күшеюінсіз, мектеп білімін стратегиялық тиімді жоспарлау жаңа ұлттық жүйелер үшін қалыптаса бастайды. Бұл зерттеу Финляндия, Ұлыбритания, Германия, Италия және Литва сияқты жетекші еуропалық елдердегі мектеп білімін жоспарлау стратегиясын салыстырмалы талдауға арналған, сондай-ақ ұлттық мемлекеттердің ерекшеліктерін ескере отырып, осы елдер үшін индикаторларды қалыптастыруды мақсат етеді. Тәжірибені талдау негізінде, PISA, OECD Education at a Glance сияқты халықаралық білім сапасын бағалау зерттеулерінде ең жоғары нәтижелерге қол жеткізген, сондай-ақ децентрализация мен цифрландырудың айқын саясатын жүзеге асыратын еуропалық елдер – дамудың негізгі бағыттары болып табылады. Зерттеудің мақсаты – халықаралық жоспарлаудың тиімді стратегиялары мен модельдерін айқындау, сондай-ақ Қазақстандағы тиімді білім беру саясатын қамтамасыз ету бойынша практикалық ұсынымдар әзірлеу. Мақалада сан алуан елдердің стратегиялары мен нормативтік құжаттарын әзірлеудің негізгі бағыттары талданады. Нәтижесінде автор ортақ ерекшеліктерді жүйелеп, Еуропаның сан алуан елдерінде және Қазақстанда мектеп білімін жоспарлаудың стратегиялық тәсілдерін әзірлейді. Қорытындыда Қазақстанда білім беруді жоспарлау үдерісіне бизнестің қатысуын арттыру, децентрализацияны күшейту, икемді білім беру траекторияларын әзірлеу, сыртқы ортаның ашықтығы мен бейімделгіштігін арттырудың, сондай-ақ үздік әлемдік тәжірибелер мен басқа елдердің тәжірибесін ескеру қажеттілігі атап өтіледі. Бұрынғы зерттеулерден айырмашылығы, Еуропаның бес жетекші еліндегі алғашқы зерттеу нәтижелері Қазақстандағы жиырмасыншы жылдардағы жағдайды көрсетеді.

**Түйінді сөздер:** мемлекеттік басқару, білім беру, орталықсыздандыру, жоспарлау стратегиялары, мектептегі білім, салыстырмалы талдау, цифрландыру, еуропалық тәжірибе.

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**Аннотация.** В условиях цифровизации, без социально-экономических преобразований и усиления конкуренции в сфере человеческого капитала, эффективное стратегическое планирование школьного образования начинает формироваться для новых национальных систем. Настоящее исследование посвящено сравнительному анализу стратегии планирования школьного образования в ведущих европейских странах, таких как Финляндия, Великобритания, Германия, Италия и Литва, с целью формирования индикаторов для этих стран на основе опыта стран с учётом национальных государств. На основе анализа опыта европейских страны, достигшие самых высоких результатов в международных исследованиях качества образования, таких как PISA, OECD Education at a Glance, и реализующие характерную политику децентрализации и цифровизации, являются ключевыми направлениями развития. Цель исследования заключается в выявлении эффективных стратегий и моделей международного планирования, а также в разработке практических рекомендаций по обеспечению эффективной образовательной политики в Казахстане. В статье проанализированы основные направления разработки стратегий и нормативных документов различных стран. В результате автор систематизирует общие черты и разрабатывает стратегические подходы к планированию школьного образования в разных странах Европы и Казахстане. В заключении подчёркивается необходимость усиления децентрализации, разработки гибких образовательных траекторий, повышения прозрачности и адаптивности внешней среды, а также увеличения участия бизнеса в процессе планирования образования в Казахстане с учетом лучших мировых практик, а также стран мира. В отличие от предыдущих исследований, результаты первых исследований пяти ведущих европейских стран показывают результаты в двадцатом Казахстане.

**Ключевые слова:** государственное управление, образование, децентрализация, стратегии планирования, школьное образование, сравнительный анализ, цифровизация, Европейский опыт.

### Introduction

Digitalisation introduces digital technologies and innovations in various spheres of life and business to automate, increase efficiency and reduce costs. Their successful implementation contributes to the development of many industries, including education. In recent years, the Republic of Qazaqstan has adopted policy documents in school education. Still, comparative analysis with successful strategies allows us to identify gaps and opportunities for improvement, such as comparative works, systematic study of European practice, and measurement of their applicability in the Qazaqstan region. In the international system, many organisations evaluate the quality of education. PISA and the World Bank are considered to be crucial international testing systems. According to their criteria, there is a decrease in the quality of school training in Central Asia, including Qazaqstan. This factor may be a reflection of the losses of part of the school year and a negative impact on the economic component of the country. This issue is particularly relevant in the current situation, when education development is part of the country's budget. Still, the results of these decisions remain at a significantly average level. The comparative analysis was based on European countries such as Finland, Great Britain, Germany, Italy, and Lithuania, which have achieved results in studying and planning school education.

### Materials and methods

The selection of countries for comparative analysis-Finland, Great Britain, Germany, Italy, and Lithuania-was guided by three main criteria. First, these countries consistently show high performance in international assessments of education quality, particularly in PISA results for reading, mathematics, and science. Second, each has a comprehensive national strategy for the digitalization of school education, reflecting a systemic approach to integrating information and communication technologies (ICT) into teaching, learning, and governance. Third, they have experience in implementing decentralized models of education management, which combine maintaining national educational standards with school-level autonomy in curriculum design, resource allocation, and pedagogical innovation.

The empirical foundation of the study draws on a wide array of sources. International reports and statistical databases, including OECD Education at a Glance, OECD PISA Reports, the UNESCO Global Education Monitoring Report, and the World Bank SABER platform, supplied comparable data on educational quality, governance, and funding. National strategic documents and legislative acts-such as state programmes for education development, national digital strategies, school modernization plans, and sector-specific laws-provided insights into the policy frameworks of the selected countries. Additionally, peer-reviewed academic publications, analytical policy briefs, and monographs were examined to contextualize reforms and trace their implementation pathways.

The analytical framework incorporated qualitative comparative policy analysis alongside strategic planning evaluation. The initial phase involved constructing a comparative governance matrix that aligned strategic priorities, models, digitalization policies, funding mechanisms, and monitoring systems of the chosen countries. This matrix facilitated the identification of both

commonalities and differences in national approaches. In the subsequent phase, thematic coding was applied to policy documents and reports. Codes, developed inductively, were grouped into key themes such as curriculum flexibility, school autonomy, teacher professional development, ICT integration, and stakeholder participation, ensuring consistency in content interpretation.

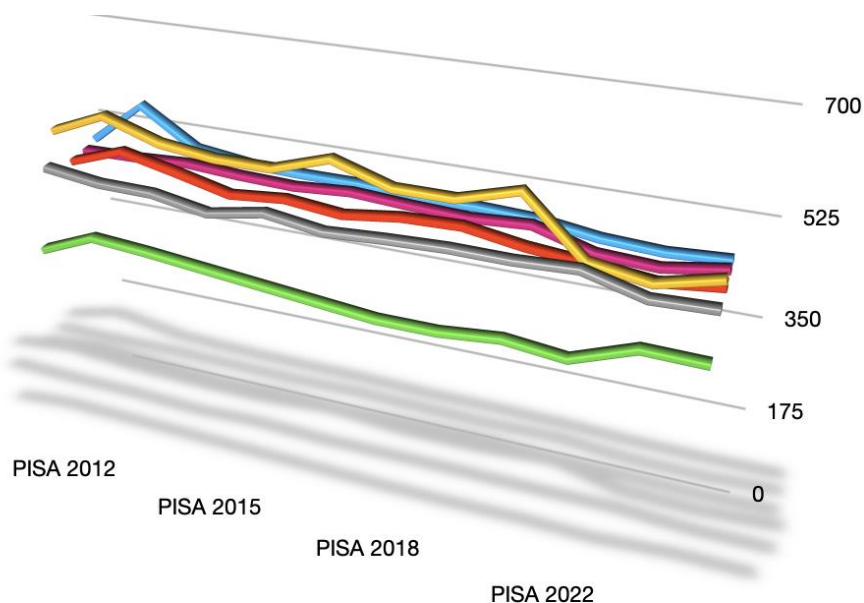
To evaluate the relevance of foreign practices for Qazaqstan, a partial SWOT analysis was carried out. This aimed to identify strengths (practical policy tools), weaknesses (possible mismatches with the national context), opportunities (innovations that could be adopted), and threats (risks of direct policy transfer without modification). Triangulation was used throughout the analysis, cross-referencing data from international datasets, national documents, and academic studies to improve validity and reduce interpretative bias. Finally, the study placed the identified best practices within Qazaqstan's educational priorities, socio-economic realities, and legislative framework. This step ensured that the recommendations from the comparative analysis are both based on evidence and practically achievable, reflecting the interaction between global policy trends and national characteristics.

### Literature review

Such international sources as the Organisation for Economic Co-operation and Development in the series "Perspectives on Education Policy in Countries" (country profiles, Great Britain, Italy, Germany, Qazaqstan) provide an overview of the context, problems and reforms in education in these countries. Work in each country. P. Sahlberg's academic publications on Finnish reforms note the longevity and stability of policies based on equality and trust in teachers [1]. In Great Britain, school education issues are considered in the works of the authors T. Greaney and K. Brown, who believe in transitioning the English education system to an evidence-based model. J. Leski and H. Goldstein, in the article *"Should we make allowance for the origin of students in school value-added models?" published at Cornell University, analyse the system of evaluating schools in England*. In Italy, the law La Buona Scuola, adopted in 2015 – "Good School", focused on quality improvement and digitalisation, as well as the National Plan for Digital Schools 2015. This law proclaimed the central role of the school in society and made recommendations with the corresponding notification. The publications of D. Carbone and C. Calvi in their works analyse the impact of digital education policies on Italian schools and emphasise the need for active participation of members of the educational system in the digitalisation process. Francesco Avvisati, Sarah Hennessy, Robert B. Cosmas and Stéphane Vincent-Lancrin assess the performance of Italy's National Digital School Plan in an OECD report. In Germany, there are conferences of Ministers of Education (KMK), Bildung in der digitalen Welt (Strategy for Educational Directions, 2016), and federal quality programs such as Qualitätsoffensive Lehrerbildung – improving the quality of teacher training. In turn, professors W. Trautwein, L. Wössmann, and M. Schratz studied school performance, the introduction of digital technologies, and the educational process, and they analysed the educational systems of various countries [2]. Studies note a turning point in reforms after the low results of PISA 2000 ("PISA shock") – the introduction of national standards and cardinal. In Lithuania, the National Education Strategy is being implemented as an agreement on education policy for 2021-2030 [3]. According to the National Progress Plan, the goal is to increase the inclusiveness and effectiveness of education. Currently, these are programs for developing education and science (for example, the State Program for 2020–2025), and laws "On Education" [4]. The evolution policy is noted, transitioning from rigid central planning to include elements of school autonomy and a new approach, such as the adoption of updated scientific programs with a competency-based approach. Professors of Vilnius University, R. Zelvy and L. Duobienė, in their works, show a critical analysis of educational policy in the context of globalisation and the influence of international organisations. J. Vaitekatis and A. Jakaitienė are researchers who analyse the impact of school autonomy and management strategies on student achievement.

In Qazaqstan, the issues of improving education quality are studied in A.Kusainov's work "Quality of Education in the World and Qazaqstan". Also, the article by A. Kosherbayev, "Scientific and practical foundations of management development of modern school", analyses the structure of the school, the use of information technologies and the quality of education. A. Omarova and I. Kulbaeva, in their work "The System of Management of the Education Sector in the Republic of Qazaqstan", consider the issues of adapting education content to modern realities of the needs of the labour market. However, despite the large number of works in educational policy, only a small share of works are devoted to a comparative analysis of the academic policies of European countries in the era of digitalisation.

COUNTRY	PISA 2012			PISA 2015			PISA 2018			PISA 2022		
SUBJECTS	READING	MATH	SCIENCE	READING	MATH	SCIENCE	READING	MATH	SCIENCE	READING	MATH	SCIENCE
QAZAQSTAN	393	432	425	427	460	456	387	423	397	386	425	423
FINLAND	524	519	545	526	511	531	520	507	522	490	484	511
UNITED KINGDOM	499	494	514	498	492	509	504	502	505	494	489	500
ITALY	490	485	494	485	490	481	476	487	469	482	471	477
GERMANY	508	514	524	509	506	509	499	500	503	480	475	492
LITHUANIA	477	479	496	472	478	475	476	491	482	472	475	484



## Main part

**Figure 1. Comparative dynamics of results in reading, mathematics, and science: Qazaqstan, Finland, the United Kingdom, Italy, Germany, and Lithuania.**

*Source: Author's own compilation*

Education is the only area of human life that forms the basis for personal, professional and dynamic development. In the modern world, education is directly related to the quality of life, income level and opportunities for social fulfilment. An educated person is more likely to get a well-paid job, access quality services, and participate in public life. In this regard, the demand for quality education is steadily growing, and the attention of parents and support for the continuous improvement of the quality of the school are becoming more and more pronounced. There are different interpretations of



the concept of education in scientific and regulatory literature. According to the UNESCO International Standard Classification of Education [5], education covers all forms of purposeful and systematic activities aimed at meeting the educational needs of a person. The Russian scientist Shishov S.E. considers education as a continuous process of personality development through the organisation of one's mental activity aimed at assimilation, renewal and application of knowledge, as well as the formation of value attitudes and social qualities in interacting with the external environment. In the Law of the Republic of Qazaqstan "On Education" of July 27, 2007, education is defined as "a continuous process of upbringing and training carried out for moral, intellectual, cultural, physical development and the formation of professional competence"[6] [7]., The Law of the Republic of Lithuania "On Education" of 25 June 1991 emphasises that education is an activity that provides a person with the basis for independent life and continuous development of abilities, being the natural right of everyone [8]. It can be concluded that the desire to receive a quality education is recognised as a priority for both individuals and states [9].

Practice shows that a good education can be obtained if you build a proper educational policy, taking into account all the priority factors and capabilities of the state [3]. Planning strategy is setting long-term goals, determining initial resources and developing guidelines for their achievement. The effectiveness of education largely depends on the quality of strategic documents produced by state bodies. In the scientific and practical plane, there are many planning methods, such as SWOT analysis, problem-based planning, PEST analysis, balanced scorecard, goals and key results (OKRs), strategy map, Porter's Five Forces Model, etc the key tool is the PISA program implemented by the Organization for Economic Cooperation and Development (OECD) [10]. The PISA program, which has been in operation since 2000, focuses on assessing the functional literacy of 15-year-old students in reading, mathematics, and science. Qazaqstan joined the PISA project in 2009, and since then, the test results have been actively used to analyse the strengths and weaknesses of the national education system.

According to PISA research (Figure 1), the Finnish education system is recognised as one of the most successful [2], [12],[15], [13]. According to the regulation, strategic planning is based on equality, inclusivity and high trust in schools and teachers [17]. The system is decentralised, and most decisions in education are made at the municipal and school levels under the overall coordinating leadership of the Ministry of Education and Culture. It is essential that the national strategy only sets the framework, and the primary national curriculum is regularly updated, which allows flexible planning and analysis of the current situation [14]. This top-down and bottom-up approach to curriculum renewal combines national priorities and local teacher initiatives. Interestingly, managing all levels – from preschool to higher education – is integrated under one ministry's auspices, ensuring policy coherence. It is noteworthy that in the era of digitalisation, Finland is one of the leaders in implementing information technologies in education [4]. In the 2010s, a national programme, the New Comprehensive School, focused on digital skills, was launched, and in 2019, Finland fully digitalised the final exam in secondary school [8]. Schools are well-equipped, and national portals of digital content are being created. Digital competence is included in the new learning standards as a cross-cutting theme. A key feature is a culture of collaboration. Experts, teachers and municipalities are actively involved in the development of strategies. Schools have councils, including the participation of parents, but the teachers themselves play the leading role in planning educational work. Professionalism and trust are the basis of the Finnish system: teachers are highly qualified (a master's degree is required), have autonomy in the choice of teaching methods, and state control is minimal. In Finland, there are no standard exams at the basic school level; teachers assess.

In the UK, education is a decentralised area consisting of England, Scotland, Wales and Northern Ireland, which means separate education planning and management systems, considering diversity, which creates similarities with Qazaqstan. In England, management is centralised through the Department for Education, with the autonomy of schools increasing since the 1990s. The English strategy of the last decades has focused on raising standards through competition and accountability, namely regular Ofsted inspections, and the publication of exam rankings (GCSE, A-levels), which encourages schools to improve. Planning occurs through national five-year reform plans, such as the Education Reform Act 1988 and the Education White Paper of 2016 [18]. Goals include improving academic performance in core subjects and closing the achievement gap. Scotland has supported a more humanistic, inclusive model, called the Curriculum for Excellence, since 2004, with greater trust in teachers.

England benefits from actively involving external partners, enterprises in public-private initiatives, and charitable organisations in managing academies. Stakeholder consultation forms part of policy: the government conducts public discussions on reform projects. According to the OECD [9], London has a higher level of adult education than other UK regions, prompting strategic investments in lagging areas. The UK was among the first countries to implement ICT (Information and Communication Technology) standards. In the 2000s, the ICT in Schools programme supplied schools with computers. Since 2014, England has introduced a compulsory subject called "Computer Science" in primary schools to prepare students for the digital economy. Notably, strategies vary: for example, Scotland has a Digital Learning and Teaching Strategy (2016), while England runs a programme to expand broadband Internet in schools. The UK leads in technology integration, though infrastructure coverage is better in urban areas. During the COVID-19 pandemic, the government provided laptops to low-income students for remote learning. This experience influences new plans, which face a sharp transition to distance learning. Education planning strategies across the UK are diverse but united by the goal to improve quality through clear standards and accountability. The British approach illustrates both advantages and disadvantages of strict measurement: transparency and societal responsibility of schools, but also the risk of a narrow focus [19]. For Qazaqstan, the English experience of developing school autonomy while maintaining central standards and mechanisms for checking and supporting low-performing schools is valuable. Italy has long had a centralised education system managed by the Ministry of Education, Universities and Research (MISD). The National Ministry sets uniform curricula and standards and is responsible for funding schools. The regions of Italy have limited powers in general education, mainly responsible for vocational training and some services like school transport and benefits. However, since the 2010s, there has been a trend towards greater flexibility at the local level. For instance, schools have been granted autonomy in organisational matters and curriculum development, with the ability to form approximately 20% of the curriculum independently. Thus, management can be characterised as "centralised with elements of decentralisation"[22].

In 2015, the critical law 107/2015 "La Buona Scuola ("Good School") was adopted [20]. This national strategy sets modernisation goals, including improving the quality of education and student skills, combating early dropout—a traditional problem in Italy—strengthening the links between schools and the labour market, implementing large-scale digitalisation (such as equipping "smart classrooms"), and training teachers in ICT. As a result of these reforms, the powers of school principals to select teachers, use the budget and use pilot programs have been expanded. Each school has an Institute Council with the participation of parents, students (in high school) and teachers, but the Ministry sets the strategic direction. The regions are coordinated with the centre through a conference (Conferenza Stato-Regioni). While the system remains centralised, progress lies in the emergence of local ownership and accountability elements. For example, three-year plans for the development of schools (Plans of Teaching Offerings) have been introduced, which each school develops based on common goals, taking into account the characteristics of the contingent. These plans are approved and monitored by school boards.

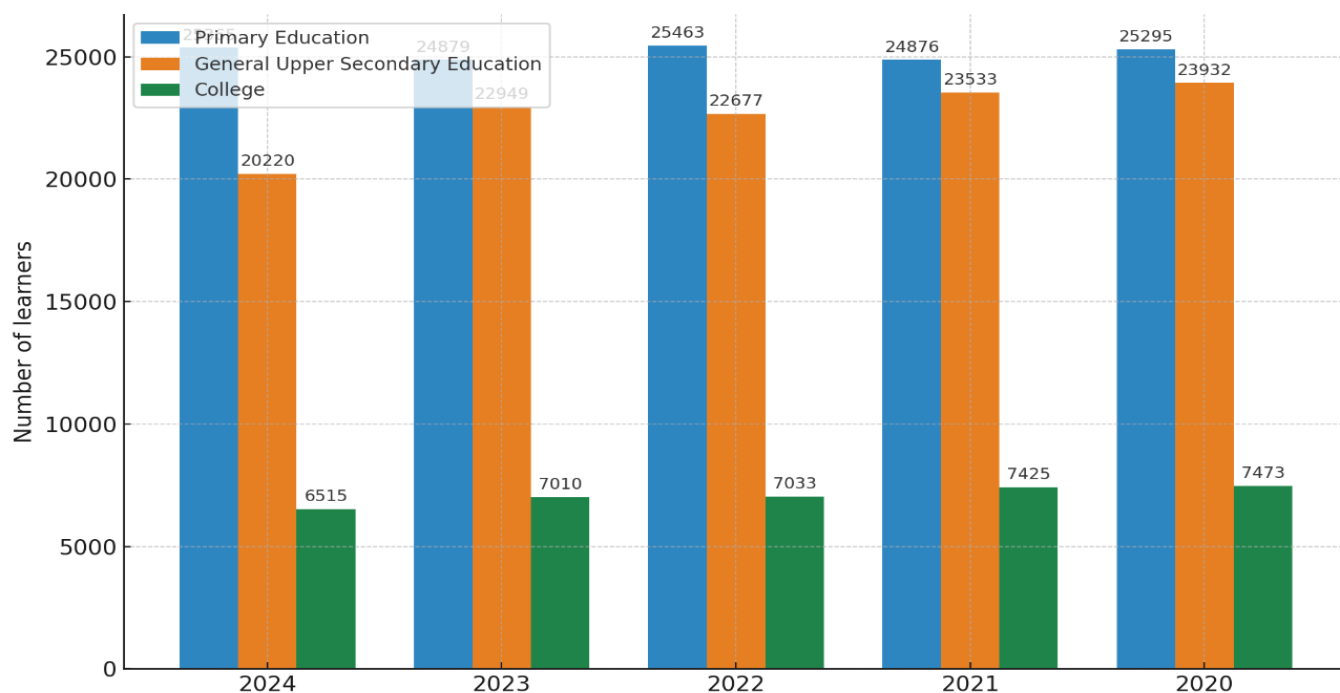
Italy is adopting digital technologies such as the Piano Nazionale Scuola Digitale as part of the Buona Scuola reform [15]. It involves equipping all schools with Wi-Fi, creating digital content and electronic journals, and training 150 thousand teachers in ICT skills. According to the government, by 2020, most schools had internet access, and e-learning platforms were introduced. An important step is integrating Italy into international assessment results, as PISA is now closely analysed and influences policy. For example, poor performance in the South of Italy in PISA has become an argument for targeted investments in these regions. Italy's plan is to modernise a centrally managed system gradually. The trend is towards greater autonomy for schools, more systematic quality assessment, and digital transformation aimed at improving educational effectiveness. Italy aims to combine common national standards, necessary for equality, with local flexibility. Its experience shows that Qazaqstan, even with strong centralisation, can implement innovations as part of a digital strategy, creating new roles for schools in society [16]. Germany is a federation where the responsibility for school education mainly lies with the Länder; there are 16 federal states, each a subject of the federation. Each Land has its own Ministry of Education, which determines curricula and manages and finances schools. In Germany, there is no federal ministry of education overseeing schools; the federation is responsible only for some aspects of higher and vocational education. However, a permanent conference of the Länder Ministers of Education develops common standards

and goals for policy coherence, creating a coordinated approach. The management system is characterised by a significant role for regional authorities, which influences strategic planning: it is decentralised but aligned at the national level through KMK agreements. In 2000, Germany's first PISA results were lower than expected, revealing problems. This prompted some nationally coordinated reforms, although each state formally adopted them. These reforms began with the introduction of national educational standards (Bildungsstandards) in 2003–2004 for core subjects with benchmarks. Although the Länder maintain programmes, the standards are coordinated by KMK and serve as quality benchmarks. In 2006, the Institute for Quality in Education (IQB) was established, which regularly compares the states' competence tests (Vergleichsarbeiten) and national reports on standards achievement.

Traditionally, schools in Germany have been open until lunchtime, but after PISA, a full-day programme (Ganztagsschule) was introduced to enhance student support. Under federalism, planning occurs at the state level, but cooperation exists on many issues. In 2019, the federal-state initiative DigitalPakt Schule was adopted. This is an exception to the rule, since the federal centre generally assigns little funding to schools. Non-state actors, such as employers and chambers of commerce and industry, play a vital role in vocational education planning as a dual system, parents consult with government ministries through parents' councils, and teachers' unions influence policy through social partnerships. Thanks to reforms, Germany consistently performs above the OECD average [9] across the board (20th, on par with the United Kingdom). The system's disadvantage was traditionally seen as inflexibility, but now many innovations have been introduced, such as the concept of standards, and new forms of schools [16]. The main aim is to ensure equal opportunities despite federal fragmentation. This does not imply that differences have disappeared, with southern states like Bavaria and Saxony performing better than some western states such as Bremen and Berlin. This encourages ongoing exchange of best practices between regions. Germany faces a severe shortage of thousands of teachers, particularly in rural and disadvantaged areas. Digital transformation remains an unresolved issue; although equipment has been acquired, a methodological overhaul of teaching is necessary. Länder governments are investing in further training programmes such as the Qualitätsoffensive Lehrerbildung, one of the federal initiatives. Planning strategies involve federal coordination for quality assurance within decentralised systems. The German experience offers valuable insights into how various actors can collaborate to raise education standards. For Qazaqstan, where the system is centralised, the German model shows the importance of engaging regions and non-governmental partners, and highlights the role of national standards and monitoring as tools for quality improvement without direct control from the centre.

Lithuania, as a small state (2.8 million people), has a relatively centralised education planning system, but in recent years it has been integrating the approaches of the European Union. The Department of the Ministry of Education, Science and Sports of Lithuania is developing strategies and programmes to combat the pandemic. After gaining independence in the 1990s, Lithuania implemented some fundamental reforms and introduced a 12-year schooling system with primary, basic and secondary school levels, along with updated technological plans. Strategic planning is formalised through medium- and long-term documents, the National Education Strategy for 2013–2022, and the recently adopted Agreement on Education Policy for 2021–2030 [7]. These strategies set measurable goals for the decade. The system of government in Lithuania combines the national and municipal levels. The ministry determines policies and standards, manages, and holds the authority to oversee schools, as they are the founders of many schools, hire managers, and allocate the budget locally. Thus, decentralisation is carried out regarding the operational management of local authorities closer to the school.

**Figure 2. Dynamics of the Number of Learners in Lithuania by Level of Education (2020–2024)**



Source: Eurostat, 2024.

Nevertheless, key decisions such as reforming the school network and education content are made centrally. Lithuania adopts the practice of community participation: in schools, it respects the advice of parents, teachers, and students; there are public councils under the Ministry of Education. The main goals of the Lithuanian strategy have had several consequences. One is the adoption of average assessment indicators aligned with the OECD level [1]. This is due to the PISA results of 2018, which show a level below the OECD average [9] [11], and the aim is to improve them. The programme highlights the accelerated digital transformation of education, especially considering lessons learned from COVID-19. In 2020, there was an urgent need to switch to online mode. Investments are planned in ICT and teachers' digital skills. Lithuania, with a strong Internet infrastructure, was considered quite advanced in information technology. Digital education became especially relevant: in 2020, the National Centre for Distance Learning launched an initiative on digital educational content resources.

Lithuania has achieved nearly universal secondary education – almost 100% of children attend secondary school, which marks significant progress since the days of the USSR (Figure 2). The number of university students is relatively high compared to the youth population. Lithuania is improving its results in international assessments. In TIMSS 2019, Lithuanian fourth-grade students ranked among the top ten in mathematics. There is room for improvement in PISA, as 15-year-olds in 2018 performed below the OECD average [21] (e.g., reading ~476, maths ~481), but the government noted little progress compared to 2015. In terms of training, the university teacher training system functions successfully, emphasising master's programmes and enhancing prestige. Lithuania's education planning strategy focuses on convergence with EU best practices and on overcoming national constraints, such as demographic indicators and resources. The system is relatively centralised, which helps a small country to quickly implement reforms, such as curriculum updates or new digital initiatives. For Qazaqstan, the Lithuanian experience is beneficial, given the similarity of the starting conditions: the transition from the Soviet to the modern model. Lithuania's success in increasing access to and participation in international comparisons demonstrates the value of external evaluation. The OECD recommendations for Lithuania – to raise expectations for results and build monitoring – align with Qazaqstan's goals [21].

Qazaqstan inherited from the USSR a highly centralised education planning system that persists today, although reforms are underway to make it more flexible. The Ministry of Education of the Republic of Qazaqstan is responsible for developing public policies, standards, curricula, financing, and management of schools, mainly at the central and regional levels. The system is



managed through a network of education departments in the regions (oblast level) and education departments in the districts subordinate to the Ministry [23]. The strategic vision is enshrined in the State Programmes for the Development of Education and Science, such as the programmes for 2011-2020, 2016-2019, and the current State Programme for 2020-2025 [4]. These documents set out goals like improving the quality of education, Qazaqstan's entry into the top 30 developed countries in terms of the quality of human capital, and specific indicators such as rankings, preschool enrolment rates, and school equipment percentages. Qazaqstan is taking steps towards decentralisation: it has expanded the powers of schools; for instance, school principals now have the right to allocate incentive payments to teachers, and some financial autonomy is granted within pilot projects. However, compared to European countries, the independence of schools remains limited. Schools generally follow uniform curricula, and principals are appointed through district education departments. To involve stakeholders, school boards of trustees have been introduced (since 2007, updated in 2018)—these include parents, local community representatives, and employers, who can participate in distributing charitable assistance and advise on school development. While the role of these councils is advisory, their influence mechanisms are not fully defined, and their work is often inconsistent. Nevertheless, there has been a slight increase in participation from parents and society overall. The Ministry of Education also maintains a Public Council, comprising independent experts and parents, which can submit proposals and initiatives directly. Qazaqstan aims to join the ranks of developed countries, with modern education remaining a national priority [24].

Despite the reforms, the quality and fairness of education in Qazaqstan need further enhancement. The divide between urban and rural areas remains considerable: rural schools, which comprise more than half of all schools, suffer from fewer resources and staff, leading to lower student achievement. PISA participation has revealed issues with functional literacy—new teaching methods could offer a solution. It is also noted that students are overloaded with subjects, despite recent standard updates that have somewhat optimised the curriculum. While trilingualism is an ambitious target, the scarcity of English-speaking teachers hampers progress. The average age of teachers is rising, and the profession's prestige must be boosted—recent salary increases are a positive development. The assessment system remains in its early stages; it is crucial to make better use of assessment data for management purposes. The OECD [21] recommended that Qazaqstan adopt evidence-based planning grounded in assessment and monitoring data. The education strategy blends elements of the Soviet centralised model with innovative approaches inspired by global practices. Qazaqstan is carving its own path: testing innovations based on NIS, consulting with the OECD [25] and other organisations, and actively engaging in international rankings. For successful implementation, ongoing reforms are essential to enhance school autonomy and responsibility, improve education quality, and reduce regional disparities. These issues are central to the recommendations outlined in the final section [17].

After careful analysis of each country, a comparative assessment based on several key parameters is advisable. The following is a summary of Figure 3, which presents the comparative indicators and characteristics of education planning strategies in Finland, Great Britain, Italy, Germany, Lithuania, and Qazaqstan.

**Figure 3. Comparative Characteristics of School Education Management, Financing, Digitalisation, and Quality Assessment in European Countries and Qazaqstan.**

Indicator / Country	FINLAND	UNITED KINGDOM	ITALY	GERMANY	LITHUANA	QAZAQ STAN
<b>Management (centralisation)</b>	Decentralisation: decisions in the hands of municipalities, national curriculum.	Decentralisation by region: 4 systems; England - central + school autonomy.	Centralised with partial autonomy of schools (20%).	Federation: decisions on land are coordinated through KMK.	Centre+municipalities: Local school management under national standards.	High centralisation: the Ministry of Education sets norms and plans.

<b>Financing (expenses)</b>	~ 5.5%-6.5% of GDP for education; >90% public funds.	4.1% of GDP; a combination of public and private (in universities) funding.	4% - 4.3% of GDP; central budget, EU project assistance.	4.54% of GDP; higher than the OECD regarding student costs; land is financed.	~4-5% of GDP; formula financing "for a student", equalisation for the village.	~3.5- 4% of GDP; growing, but below the benchmark of 5-6%; currently increasing.
<b>Digitalisation of schools</b>	Full digitalisation of the exam; national ICT program; high equipment.	High equipment; compulsory computer science course (England); national strategies of the regions.	Digital School Plan (Wi-Fi, devices); acceleration after COVID.	Digitalpakt: €5 billion of investment; catches up with leaders, digital competence standards.	Wide Internet access; distance learning projects; the goal is 100% of schools with high-speed Internet by 2025.	>90% of schools with the Internet; e-learning platforms are being implemented, but the city/village gap persists.
<b>Quality assessment</b>	There are no mandatory exams under the age of 18; selective national assessments; emphasis on internal assessment.	Strong external evaluation: GCSE/A-levels, Ofsted inspections (England); different approach in Scotland (softer).	Unified final exams + national tests INVALSI (2,5,8 grades); new inspection system.	Final exams (Abitur) according to general standards; comparative tests between the states; land inspections.	Graduation exams after the 12th grade; participates in PISA/TIMSS; self-assessment of schools, there are no regular inspections of all schools.	Graduation copy + UNT (university); national sampling assessment; there are no regular inspections, but there is school certification; participation in PISA since 2009.
<b>Participation of stakeholders</b>	Strong: teachers, municipalities, experts are involved in policy development; trust in teachers.	Significant: school councils (with the participation of parents), public consultations on reforms; varies by region.	Moderate: councils in schools (parents, teachers); CSPI (Higher Council of Education) under the Ministry gives expertise.	High: participation of employers in dual education, parent councils of the lands; public discourse on education is wide.	Growing: school councils, discussion of the national strategy with society; but traditionally decisions from above.	Elementary: school boards of trustees have been established, general councils under the Ministry of Education; so far, the influence is limited.

Source: StatBase, Statista.

Thus, the comparative analysis revealed that, despite differing conditions, countries agree on key areas for general education development: ensuring quality and equity, adapting to the digital age, implementing assessment systems for improvement, investing in teachers and infrastructure, and fostering engagement with society. These commonalities and differences are crucial to consider when formulating recommendations for Qazaqstan. As a result of a comparative study of the planning strategies for general and secondary education in five European countries and Qazaqstan: all the countries considered recognise education as a priority and possess official strategic documents outlining development goals. It can be said that the main objectives are similar, focusing on improving the quality of education (measured, among other things, through international comparisons), ensuring equal access and inclusiveness, modernising content (according to the requirements of the twenty-

first century-digital skills, competence-based approaches), and enhancing the professionalism of teachers. Therefore, in terms of declared objectives, the strategies are broadly similar. The organisation of education management, however, varies significantly. Decentralised models, such as those in Finland and Germany, demonstrate long-term effectiveness, where local needs are addressed more flexibly, and local authorities and schools are more accountable. Finland's success mainly stems from municipal autonomy and trust, while Germany's is due to competition and the exchange of experience between federal states. Centralised models like Italy and Qazaqstan offer a standardised approach and a level playing field but pose risks of bureaucracy and slow response to local issues. Italy mitigates this challenge through partial autonomy granted to schools, and Qazaqstan through pilot innovative projects (NIS, renovation). Hybrid models, such as the UK-regional decentralisation, while in England there is a strong centralisation of standards; Lithuania-combining national policies with municipal governance-demonstrate that a certain degree of local autonomy is optimal if national guidelines are respected.

Evaluation reforms are central to strategies. Experience shows that "what we measure is what we get." In countries where regular national assessments and external examinations have been introduced (such as Germany and Italy), the quality of education has become more transparent, leading to targeted improvements. Conversely, over-testing can have negative effects – the UK is seeking a balance by introducing a broader range of measures for school performance, not just exams. Finland demonstrates that a strong internal assessment culture, without the intense pressure of external exams, can sustain high results; it even employs soft monitoring tools to adjust policies. For Qazaqstan, enhancing the assessment system is a key priority (including implementing NOOD, participating in PISA, and reforming the Unified National Testing) to gather reliable information for decision-making. There is no substitute for digital transformation. All countries have accelerated their adoption of technology in education. However, it is crucial to note that digitalisation is effective only when complemented by changes in teaching methods and teacher training. Otherwise, technology remains underutilised. Europe (Germany, Italy) is emerging from the pandemic and investing in equipment, software, training programmes, content, and courses for teachers. Qazaqstan should likewise focus on improving teachers' digital skills and developing localisation of electronic content, especially in the Qazaq language. The comparative analysis confirms the idea that there is no universal model for educational planning. Each country has crafted its own approach based on its historical, cultural, and socio-economic context. Nonetheless, successful systems share similar principles, such as a sequence of reforms, a long-term vision supported by resources, community involvement, and a willingness to measure outcomes and make adjustments [26]. These principles can be adapted and applied in Qazaqstan. Based on the analysis, recommendations for Qazaqstan's education system are formulated. These suggestions focus on introducing and adapting effective elements of European experience while considering the Qazaq context. Increased school autonomy and community participation are key. Inspired by Finland and Germany, some powers should be gradually transferred to schools and regional authorities-for example, granting schools greater flexibility in curriculum decisions, such as introducing optional subjects and additional hours for local components, similar to Italy. Developing the functions of school boards to make them active participants in strategic planning at the school level is crucial, including empowering them to participate in the assessment of the school and the principal. European experience demonstrates that school boards enhance transparency and accountability, which drives improvements, promotes broader dissemination of information, and ensures equal access [17].

Usually, the same people decide important issues without notifying the other parents. This procedure should be clearly outlined and implemented through a revision of the codes of practice or school statutes. Consider the possibility of creating pilot decentralisation projects in specific regions or cities, for example, by giving them more budgetary and administrative rights, and test how this will affect performance (similar to charter schools or independent academies in the UK, but in the Qazaq context). Strengthen the quality monitoring and evaluation system. Focus on OECD approaches [21] and the experiences of the UK and Germany. Develop an independent national system for assessing the quality of education. It is advisable to establish a national agency (similar to INVALSI in Italy or IQB in Germany) to coordinate all assessment procedures – including national testing, PISA results analysis, and learning environment studies [27-29]. Such an agency, with sufficient autonomy from the Ministry of Education, will ensure objective, evidence-based data and recommendations. It is essential to remember that evaluation should aim to improve approaches and the quality of education,

not merely to meet "imaginary" and "achievable" indicators. Introduce regular external assessment of schools gently, not punitive inspections, but through audits and support for underperforming schools. The models of Scotland or the Netherlands can serve as examples, where inspectors visit schools, provide conclusions and recommendations for improvement, and schools are supported in implementing these suggestions. This approach combines supervision and mentorship. For example, Germany's low PISA reading results prompted the launch of a national reading programme. Likewise, Qazaqstan could initiate a national project to develop reading skills, train teachers in critical reading techniques, and implement initiatives to foster young people's interest in reading. These efforts could be carried out by international organisations such as PIRLS, aimed at reducing the population's reading level, and are supported by deputy requests in Qazaqstan [31].

Publish annual reports, such as the UK White Paper or Finnish Reviews, analysing progress on key indicators (PISA, Reach, Funding, Inequality). This will ensure transparency and enable the public and experts to monitor the implementation of the strategy. Additionally, it will raise awareness and help focus on finding new recommendations to improve the situation. Investing in teachers is crucial for quality [32]. European and international practice clearly demonstrates that the success of reforms depends on teachers. It is recommended that the profession continues to increase its attractiveness and that wages are raised to levels competitive with other industries (in Finland, teaching is a prestigious profession with a good salary). Consider introducing non-material incentives, such as social packages and housing benefits, in rural areas. Such measures are used, for example, in Lithuania and Poland to attract staff to rural areas. To revise the training system and selection of candidates for teaching professions based on the Finnish model: set high requirements for applicants to pedagogical universities, emphasise practical experience, mandate internships, and provide mentoring for young teachers. It is possible to introduce elements of residency (similar to medicine), where graduates work for a year under the supervision of an experienced teacher with a reduced workload. The German model of dual education can also be applied here. To establish a national programme similar to the British National Professional Qualification, covering all levels - from early-career teachers to prospective school principals.

Consider Germany's experience with the *Qualitätsoffensive Lehrerbildung*, which aims to modernise professional development courses by including more digital didactics, inclusive practices, and new assessment methods. Promote the exchange of experiences both nationally and internationally. Send top teachers and administrators on internships in Finland, Germany, or other countries to learn from their best practices. Similar programmes are available in several Eastern European countries and are funded by the European Union. Locally, support the development of "teachers' labs" where educators share methodologies, especially between cities and rural areas (for example, the Finnish Tutor-Teacher Network has facilitated the exchange of ideas between schools since 2016).

The current era underscores the need for further digitalisation, especially in methodology, as technological progress continues annually, exemplified by the rise of artificial intelligence [5]. Drawing from Germany and Italy's experiences, it is clear that targeted funding for digital infrastructure (e.g., DigitalPakt) is essential, particularly in rural schools [30]. National projects should track not only the availability of technology but also its actual utilisation, the percentage of teachers using ICT in classrooms, teachers' competencies in this area, and indicators of student achievement [4]. Efforts should also focus on developing digital content in Qazaq and Russian languages. This can be achieved through public-private partnerships to create electronic textbooks, interactive manuals, and online laboratories for natural sciences. The Oak National Academy platform in the UK was established during the pandemic and offers ready-made online lessons for schools. Qazaqstan could centrally gather the best lessons from skilled teachers and digitise them to support others, alleviating issues like lagging among children and reducing the burden on parents working with their children and paying for tutoring services. Additionally, digital literacy should be integrated into teacher training standards and professional development courses [30].

Continue international integration and exchange of best practices. Qazaqstan already benefits from OECD consultations [21] – it is worth maintaining participation in reviews of initiatives (for example, to request a review of the OECD education policy [21] for Qazaqstan, as Lithuania has done). Engage more actively in networks such as the World Bank's SABER [26] or UNESCO's GEM [5] to align policies with global trends. Adopt successful niche practices: for example, the German system of dual career guidance in senior secondary school – Qazaqstan has already incorporated



some elements of this system (college + school classes), which should be expanded to involve employers in training. Implement innovations in individual schools or regions with scientific support, as is done, for example, in Estonia (projects in educational innovation are first tested). Qazaqstan already has experience with pilot projects based on NIS – it can be expanded (for example, a pilot project on autonomy for 50 schools across different regions with a control group).

All proposed measures require systematic, phased implementation and political will. The European experience shows that reforms in education do not produce instant results but demand 5-10 years of diligent effort. Therefore, it is crucial to maintain the strategic course regardless of personnel changes. It would be beneficial to follow Lithuania's example and establish a non-partisan agreement on education development for the next decade to set long-term benchmarks. This would enable Qazaqstan to deliberately progress towards building a modern education system based on the best international models while considering national characteristics and needs. Implementing these recommendations should facilitate bringing the quality of general education in Qazaqstan closer to that of developed countries, enhance the competitiveness of young people, and strengthen education's contribution to society's sustainable development. The foundations for this are already in place; all that remains is consistent implementation of the strategy, complemented by proven solutions from international practice.

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## ЕУРОПАЛЫҚ ТӘЖІРІБЕ НЕГІЗІНДЕ ЦИФРЛАНДЫРУ ЖАҒДАЙЫНДА МЕКТЕП БІЛІМІН ДАМУ СТРАТЕГИЯСЫН ТАЛДАУ

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## АНАЛИЗ ЕВРОПЕЙСКОГО ОПЫТА СТРАТЕГИИ РАЗВИТИЯ ШКОЛЬНОГО ОБРАЗОВАНИЯ В УСЛОВИЯХ ЦИФРОВИЗАЦИИ

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