

## Pre-Primary Education in Slovakia over the Last Three Decades: Temporal and Spatial Analysis

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### Abstract

*The contribution focuses on an assessment of development trends of the network of pre-primary education facilities in Slovakia, using the example of kindergartens, through a comparative analysis of selected indicators from a temporal and spatial point of view over the last 30 years. The results indicate considerable heterogeneity in the development of kindergartens over time, with the initial decline followed by the current increase in the number of kindergartens, classes and children. The liberalization of the pre-primary education market resulted in an increase in the number of private and church kindergartens, predominantly in the cities and towns of Slovakia. The spatial distribution of kindergartens is significantly uneven, with up to one-third of Slovak municipalities not having a local kindergarten at all. This creates pressure to solve the problem of spatial availability for compulsory pre-school attendance. Studying the spatial distribution of preschool facilities is essential for ensuring that all children have equitable access to quality early childhood education. By examining how preschools are spread out geographically, policymakers can address disparities in access, allocate resources more effectively, plan for community needs, and promote long-term positive outcomes for children's development. This research is fundamental for creating a more equitable, efficient, and accessible early education system.*

**Key words:**  
kindergartens,  
development trends,  
growth index,  
transformation,  
Slovakia

### 1 INTRODUCTION

Early childhood education plays an irreplaceable role in a society's educational system. Investing in preschool education is essential for a child's development and contributes significantly to the overall well-being of society (OECD, 2021). The participation of children in preschool education generally improves their school readiness and success at school (Barnett, 1995; Berlinski et al., 2009; Mistry et al., 2010). The availability of early childhood education for selected groups of children, e.g. from a socially disadvantaged background, for children with disabilities or at-risk development, is exceptionally important, as it significantly increases not only their chance for school success but also a better quality of life (Hall et al., 2019; Hahn et al., 2023; Navarro-Varas et al., 2023).

Aside from educational importance, pre-primary education also has considerable economic importance (Kaščák & Pupala, 2013; Bailey et al., 2021). The economic benefits of investing in pre-primary education are greater than those in primary, secondary or tertiary education (Barnett, 2005; Temple & Reynolds, 2007; Hahn et al., 2023). The highest social return on investment comes from early childhood education (Penn, 2009). In addition to the economic and career benefits, the significant social-compensatory benefits of early childhood education and care have been empirically documented, especially in the case of targeted educational interventions in specific locations and for selected social groups of

the population (Ramey et al., 2000; Reynolds, 2000; Garcia et al., 2023; Bar et al., 2022; Blau, 2021; Munir et al., 2023).

The preschool education system in Slovakia has undergone a significant transformation, shifting from a centralized, ideologically driven model to a more diverse, child-centered approach. During the communist era, preschool education primarily served as a tool for instilling socialist values and ideologies, fostering loyalty to the state and adherence to communist principles (Gabzilová, 2021; Tesar, 2018). The system emphasized collective activities, discipline, and early preparation for a standardized education model. The curriculum was highly uniform, prioritizing basic skills, social norms, and physical development while simultaneously promoting state propaganda. Although ideological objectives were paramount, early childhood education also sought to enhance children's emotional and social skills within group settings (Kudláčová, 2023; Kaščák et al., 2013). With minimal parental involvement, the state exerted full control over the curriculum and pedagogical methods. Government policies prioritized expanding the number of state-funded kindergartens to support working parents, particularly women. By the late 1980s, the preschool enrollment rate had reached approximately 93% (CVTI, 2023a). The fall of communism in 1989 led to the democratization and decentralization of the education system. The removal of ideological components from the curriculum was accompanied by a modernization of educational methodologies (Pajdlhauserová, 2009). The focus

shifted towards fostering individual development, creativity, and critical thinking, emphasizing the unique potential of each child. A holistic approach to education was adopted, addressing cognitive, emotional, social, and physical development. Educational objectives were redefined to equip children with the skills necessary for success in a rapidly evolving, globalized society (Kaščák et al., 2013). The management of kindergartens was transferred to local governments, granting greater autonomy in curriculum development. This period also witnessed the emergence of non-state preschool institutions, offering alternative educational models. Despite these advancements, challenges remain, including regional disparities in preschool accessibility, unequal opportunities, funding shortages, capacity constraints, and persistently low enrollment rates in certain areas.

In the context of the European Union, Slovakia ranks among the countries with the lowest participation of children aged three and over in preschool education. In 2021, this was 77.4%, which put Slovakia in the third lowest place among the European Union Member States in the monitored indicator (Eurostat, 2022). The reasons for the low participation of children in early education are mainly the lack of regional capacity of preschool facilities and the low participation rate of children from socially disadvantaged backgrounds (Sládeková Madajová et al., 2021; Rigová et al., 2020; Hellebrandt et al., 2020; Polačková et al., 2023; Hulík et al., 2008).

The system of preschool education in Slovakia is divided into two separate levels: care for children up to the age of 3, which is provided as a social service, and the education of children from the age of 3 until starting compulsory school attendance, the so-called pre-primary education carried out in kindergartens. Kindergarten is a pre-school facility that provides education and training for children in pre-school age. It supports the personal development of children in the areas of social-emotional, intellectual, physical, moral, and aesthetic, develops abilities and skills, and creates conditions for further education.

From September 2021, Slovakia joined the list of countries with compulsory pre-primary education for children aged five, which is set to last one full school year. Among other things, the amendment to the Education Act introduced in September 2025, the legal right to a place in a kindergarten for children aged three and over. (Act No. 209/2019) This should facilitate and ensure equal access to pre-primary education for all children, including those from marginalised communities and socially disadvantaged backgrounds, while also contributing to the fulfilment of the so-called Barcelona goals, which Slovakia committed to by joining the European Union in 2004 (Polačková et al., 2023).

The aim of the paper is to assess the state and development of the network of pre-primary education facilities in Slovakia using the example of kindergartens from a temporal and spatial perspective over the past 30 years. Emphasis is placed on the analysis of quantitative changes, and the identification of development trends, which result in an uneven and spatially unfair distribution of preschool facilities and a changing structure of pre-primary education providers. The identified changes and processes in pre-primary education in Slovakia are evaluated in the context of achieving quantitative goals in the field of pre-primary education in line with EU goals.

## 2 FACTORS AFFECTING THE ORGANISATION OF A PRESCHOOL NETWORK

After the fall of the totalitarian regime in 1989, the establishment of democracy and the introduction of a market economy, the provision and state of pre-primary education (networks of kindergartens) are shaped by several factors (Kučerová et al., 2015; Meyer et al., 2023).

The principal factors affecting the provision and organisation of education are demographic changes and the associated lower overall fertility of women and birth. Changes in reproductive behaviour led to a decrease in the number of children starting preschool attendance. The resulting number of children attending preschool in a region is also conditioned by migration or the possibility of attending schools, which leads to significant regional differences in the capacity of kindergartens. It is also the national structure of the population that can affect children's participation in pre-primary education and, thus, indirectly affect the network of preschool facilities.

Another factor is the government school policy and the legislative setting of (pre-primary) education (Matlovič & Matlovičová, 2017).

A factor influencing the spatial organisation of preschool education is also the possibility of parental choice (Parsons et al., 2000; Küçükütüran et al., 2017; Bernard et al., 2022), which leads to "market" behaviour not only of the parents of children but also of preschool institutions themselves (Hernández & Carrasco, 2020). In recent periods, the influence of non-state subjects and alternative forms of education is increasing in education systems (van de Werfhorst, 2014), as is the diversity of the school network (e.g. private schools, alternative kindergartens, home education, etc.). Economic factors, which are significantly manifested in tendencies towards the optimisation of the school network, the closing of "unprofitable" schools and their controlled mergers, are also an integral aspect that leads to pressure on the efficiency of public education and stimulates a competitive environment between schools.

Finally, schools (including kindergartens) play a significant role in education and upbringing; however, they also have other roles to play in society, especially in rural regions. The presence of a (kindergarten) school can be a symbol of the village's development, as the village becomes a more attractive place for permanent residence, especially for the young population, which can also lead to the development of other economic activities in the village (Bernard et al., 2022). On the other hand, education and its financing increase demands on local governments (founders) and, similarly, the implementation of personnel policy and the provision of qualified employees (Kučerová et al., 2015; Križan et al., 2022).

## 3 METHODS AND DATA

The paper is focused on an assessment of the development of the network of kindergartens in time (1996 – 2022) and space (national, regional and municipal levels). Two group methods were used in the study. In the case of the first, this concerns descriptive statistics, data processing and evaluation using the basic indicators of the analysis of the development of the school network (Gurňák et al., 2019; Kučerová & Kučera, 2012). For an analysis of the development of the number of selected indicators

of the network of kindergartens (number of schools, classes, children aged 3 – 6), a growth index given by the following equation was used:

$$I_G = \left( \frac{S_1 - S_0}{S_0} \right) \cdot 100 \quad (1)$$

where  $I_G$  is the growth index,  $S_1$  presents the number of schools (classes, children) at the end of the analysed period, and  $S_0$  represents the number of schools (classes, children) at the beginning of the analysed period.

The second group of methods is represented by interpretation and visualisation methods. Geographical information systems (ArcMap 10.1) were used to interpret the indicators that were analysed in terms of the temporal and spatial aspects of the kindergarten network. Among cartographic techniques, cartogram methods and the method of figural symbols were used.

The basis for the analysis was data provided by the Centre for Scientific and Technical Information (CVTI) of the Slovak Republic, which handles data for individual schools and school facilities in Slovakia. In our case, these are kindergartens registered and included in the so-called network of schools and school facilities of the Slovak Republic (hereinafter referred to only as the Network)<sup>1</sup>. As Sládeková Madajová et al. (2021) reported, in addition to kindergartens, there are other private facilities providing childcare services that are not included in the Network. Such facilities, however, do not have to meet several conditions regarding the qualifications of the staff or the educational programme. In terms of currently valid legal provisions, these are not official kindergartens and are not authorised to provide pre-primary education. Data on these facilities are not statistically monitored. Official data on their number, capacity, or the number of children attending such facilities are therefore not available. Another data source for the research was population data from the Statistical Office of the Slovak Republic and data on children's participation in pre-primary education in EU countries from Eurostat and the OECD.

#### 4 DEVELOPMENT OF THE NUMBER OF KINDERGARTENS: ANALYSIS OVER TIME

The current network of kindergartens has its roots in the socialist era, which was characterized by rapid population growth and a high reproduction rate (Bleha & Vaňo, 2008). The central planning of society aimed at the even development of regions and the pro-family social state policy caused the spatial distribution of kindergartens to be relatively uniform throughout the territory (Nestorová-Dická, 2011; Tesar, 2018). The possibility of personal choice was significantly limited, and the network of kindergartens consisted exclusively of state schools.

The population development after World War II up to the end of the 1980s was characterised by rapid population growth, which was influenced by massive state support for young families with children, which created favourable conditions for high population reproduction (Bleha & Vaňo, 2008). The number of children grew, and a basic network of school facilities was gradually created in Slovakia. The maximum number of kindergartens (4,052) with the highest number of classes (9,360) was recorded in 1989. The average number of children in a class was 28, and 241,458 children attended kindergarten (Fig. 1). Children's enrollment was almost 93% (CVTI, 2023a).

Transformation processes in society and the transition to a market economy after 1989 were also reflected in the demographic behaviour of the population, which was associated with the decline in the birth rate and the number of schools, including kindergartens (Nestorová-Dická, 2011). The network of kindergartens responded to the decreasing number of children up to 2010. Since 1990, the number of kindergartens has been optimised in Slovakia. The most significant changes occurred in the first half of the 1990s, when the number of kindergartens fell by nearly one-fifth (730), and the number of children decreased by a quarter (almost 55,000 children). The network of kindergartens reacted not only to demographic developments but also to the overall transformation of education in Slovakia (Gurňák et al., 2019). With the adoption of Act No. 279/1993

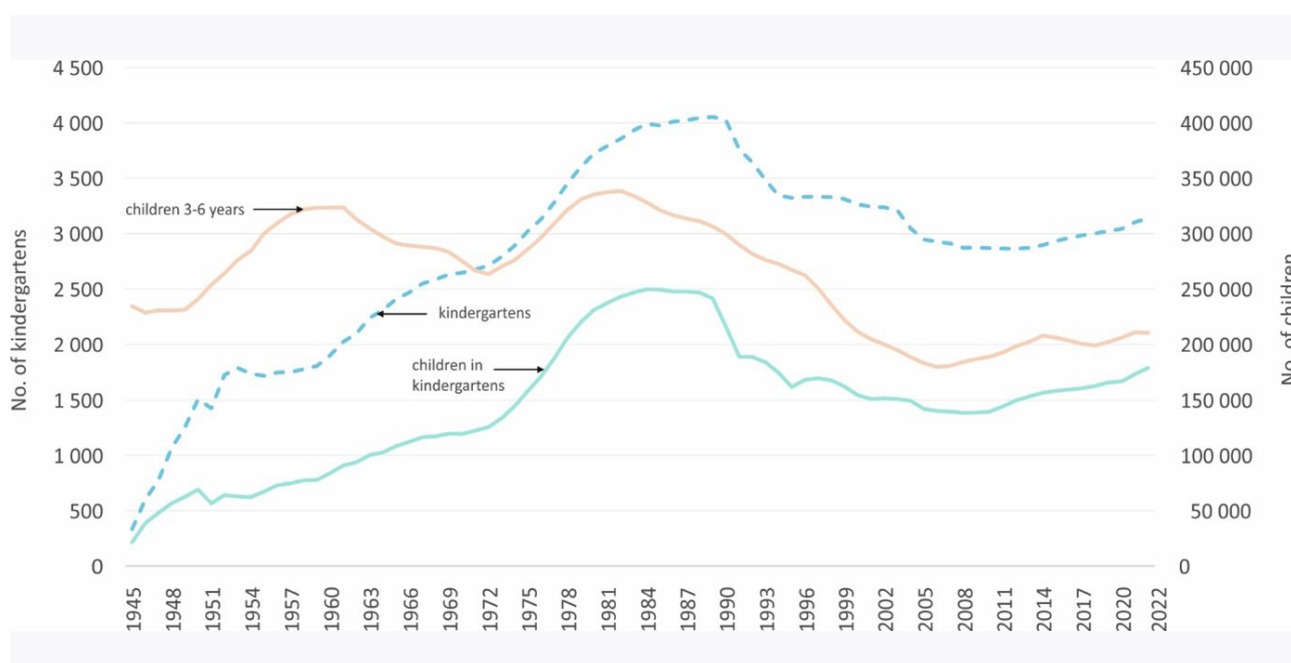


Fig. 1. Development of the number of kindergartens and children in Slovakia in the years 1945 – 2022

Source: CVTI (2023), own processing



Coll. on School Facilities, kindergartens were removed from the school system and transferred to the system of educational facilities, and in line with Act No. 416/2001 Coll. competencies in the field of elementary schools and kindergartens were transferred to municipalities and cities together with the relevant property and the obligation to preserve its purpose. The change was brought only by Act No. 596/2004 Coll., which cancelled the obligation to preserve the original purpose of the transferred property in school facilities. This made it easier for municipalities and cities to proceed to the rationalisation of school facilities and, together with the ongoing decrease in the number of children aged 3 – 6, started a further reduction of kindergartens. While there were 3,262 kindergartens with 7,576 classes in the network of schools and school facilities in 2000, by 2012, there were only 2,861 kindergartens with 7,395 classes.

The rise in the number of children due to the implementation of delayed births (Šprocha et al., 2018), the reintroduction of kindergartens into the education system and the adoption of pre-primary education in 2008 (Act No. 245/2008 Coll. on education and training) had a major impact on the development of the network of kindergartens in the second decade of the 21st century. Founders resolve this increasing interest in kindergartens places on the one hand and the unfavourable situation when accepting children on the other by expanding the capacities of already existing kindergartens or by adapting suitable spaces for kindergarten classes. Interest in admitting children to kindergartens grew continually. Kindergartens, due to their capacities and the maximum number of children in a class<sup>2</sup>, were not able to meet all the demands. The lowest number of pending applications for admission to kindergarten due to lack of places occurred in 2006 – when there were only 1,074 (while in 2000, there were 4,184) – but by 2012, this number had increased 7.6-fold, which amounted to 8,144 pending applications.

The reaction to the situation was, from 2012, a gradual growth in the number of kindergartens, on average by two dozen new facilities per year (Križan et al., 2022). The number of children in kindergartens grew at a level of more than 2,000 children annually, and from 2012 to 2020, there was an increase of 1,182 classes, with a growth rate of almost 150 classes per

year. Still, the number of pending applications more than doubled.

The introduction of compulsory pre-primary education for 5-year-old children in 2021 was also reflected in the growth of the number of kindergartens (95 facilities) and classes (877). However, this was mainly by expanding the capacities of existing schools. The number of children in kindergartens increased by nearly 12,000, and pending applications reached 21,091 in 2022 (Fig. 2).

Along with the number, the structure of kindergarten ownership also changed. Up to the early 1990s, preschool education was provided exclusively in state-run facilities. With the establishment of democracy and the socio-economic transformation of society after 1989, the education market opened to new operators, which led to the founding of the church and private kindergartens, which gave parents the option of choosing a preschool according to their preferences (Walaszek & Bakovska, 2016). The first private kindergarten was registered in the network in 1993, and the first church-run kindergarten two years later (Križan et al., 2022).

According to the form of ownership, state kindergartens operated by municipalities dominate in Slovakia (89%), followed by private (7.4%) and church kindergartens (3.6%). Upon evaluating their development over time, we identified several trends (Fig. 3). The development of the number of church kindergartens remained relatively stable and continuously increased by an average of 4 schools per year with small deviations. In 2022, a total of 112 church schools attended by 6,407 (3.6% of the total number of children attending kindergarten) children in 314 classes offered pre-primary education in Slovakia. In the case of private kindergartens, we observe an even more dynamic nature of development (Fig. 4). Their market share has increased, especially over the past decade. Between 2012 – 2022, their number grew more than three-fold. In 2022, there were 232 private kindergartens in Slovakia, with 10,169 children (5.7%) in 645 classes.

State kindergartens, which were attended by 91% of children, showed a different development trajectory compared to previously presented types of kindergartens. The number of schools decreased from 3,312 to 2,793 in the period 1996 – 2022 (Fig. 4).

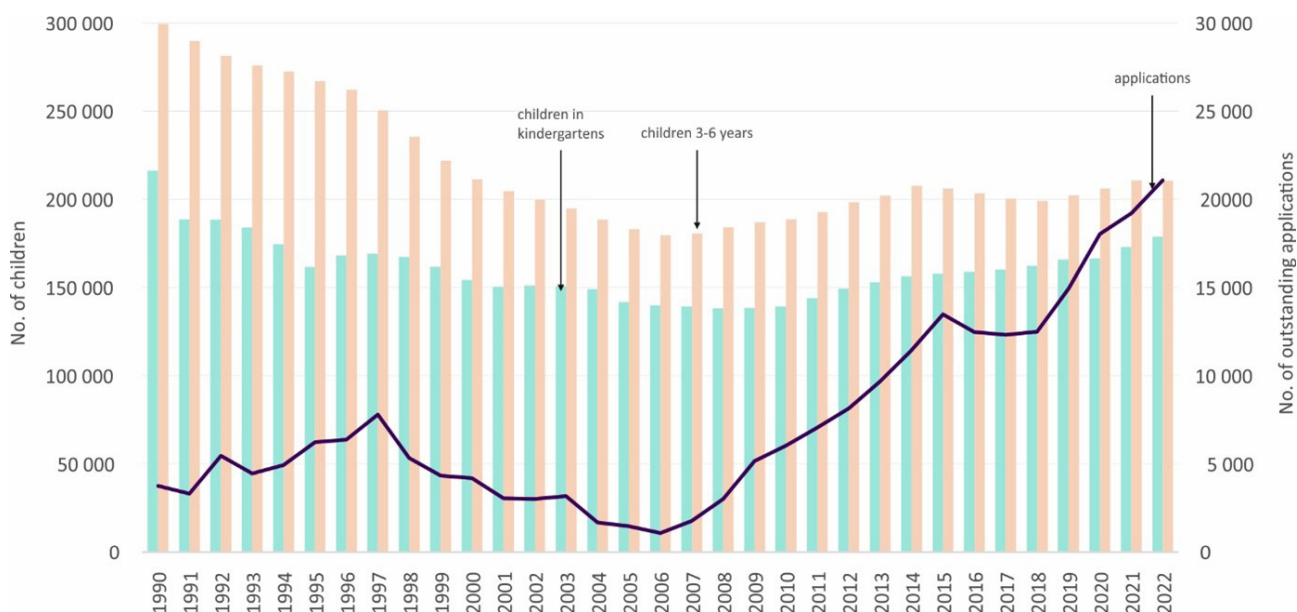


Fig. 2. Development of the number of children in kindergartens in Slovakia in the years 1990 – 2022

Source: CVTI (2023a), own processing

The decline in state preschools continued until 2013, when it reached a minimum of 2,719 kindergartens. Development in the number of classes followed the same trend as the number of schools until 2007 when it reached its minimum of 6,539. From 2014, a relative revival of growth occurred, and the number of kindergartens increased to 2,793 facilities by 2022, and the number of classes reached 8,267 (Fig. 4).

## 5 DEVELOPMENT OF THE NUMBER OF KINDERGARTENS: SPATIAL ANALYSIS

The spatial distribution of kindergartens in Slovakia must be seen in the context of the settlement structure and the number of inhabitants. In 2022, almost two-thirds of municipalities (64%) had fewer than 1,000 inhabitants (the median was 668 inhabitants). According to valid legislation, a kindergarten is usually established when the number of children is 10 or more (Act No. 245/2008 Coll., as amended). The number of children aged 3 – 6 in 2022

was below 10 in 665 municipalities in Slovakia. A real problem arises in these municipalities with securing compulsory preschool attendance for its residents or inhabitants from the catchment region. The analysis of the spatial distribution of kindergartens indicates that there were no kindergartens in 898 municipalities in Slovakia in 2022 (Fig. 5). In association with the character of the settlement, most municipalities without a kindergarten were in the Banská Bystrica (46%), Prešov (42%) and Košice (35%) regions.

The kindergarten network had a heterogeneous character from a spatial point of view. In Slovakia, municipalities with one kindergarten predominated (60%), while 31% of municipalities did not have a single kindergarten. We identified more than one kindergarten in municipalities located in the hinterland of large cities affected by suburbanisation processes (Sládeková Madajová et al., 2021), in ethnically mixed areas with a kindergarten where a language of instruction other than Slovak (southern and south-western Slovakia, PREGI & NOVOTNÝ, 2023)

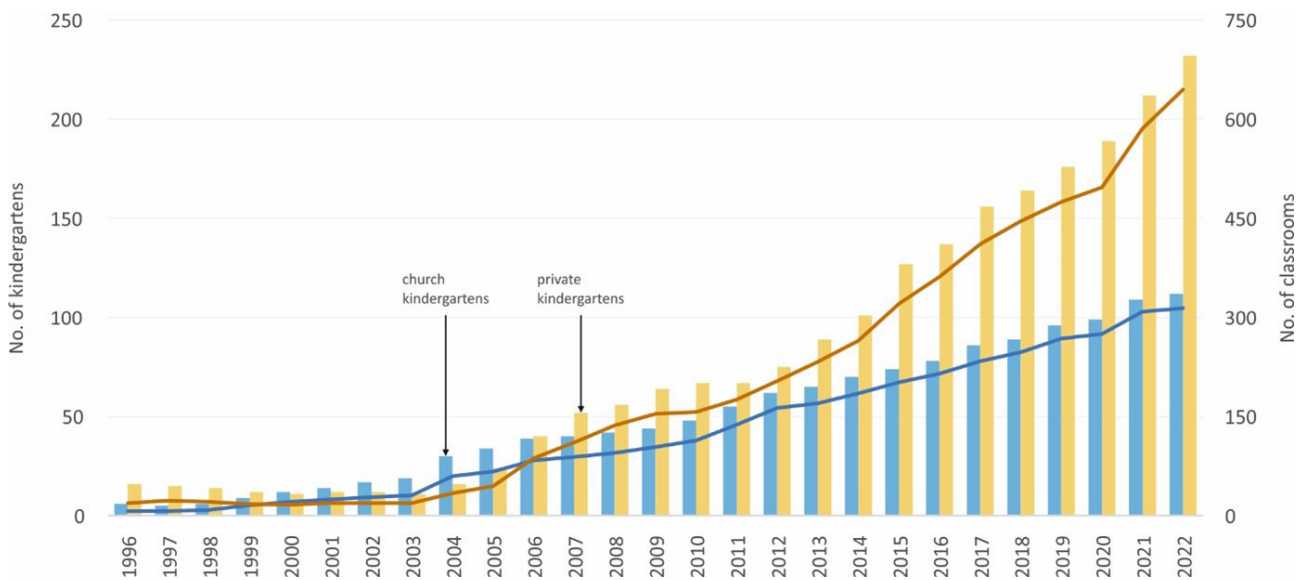


Fig. 3. Development of the number of private and church kindergartens and their classes in Slovakia in the years 1990 – 2022  
Source: Statistical Office of the Slovak Republic (2022), own processing

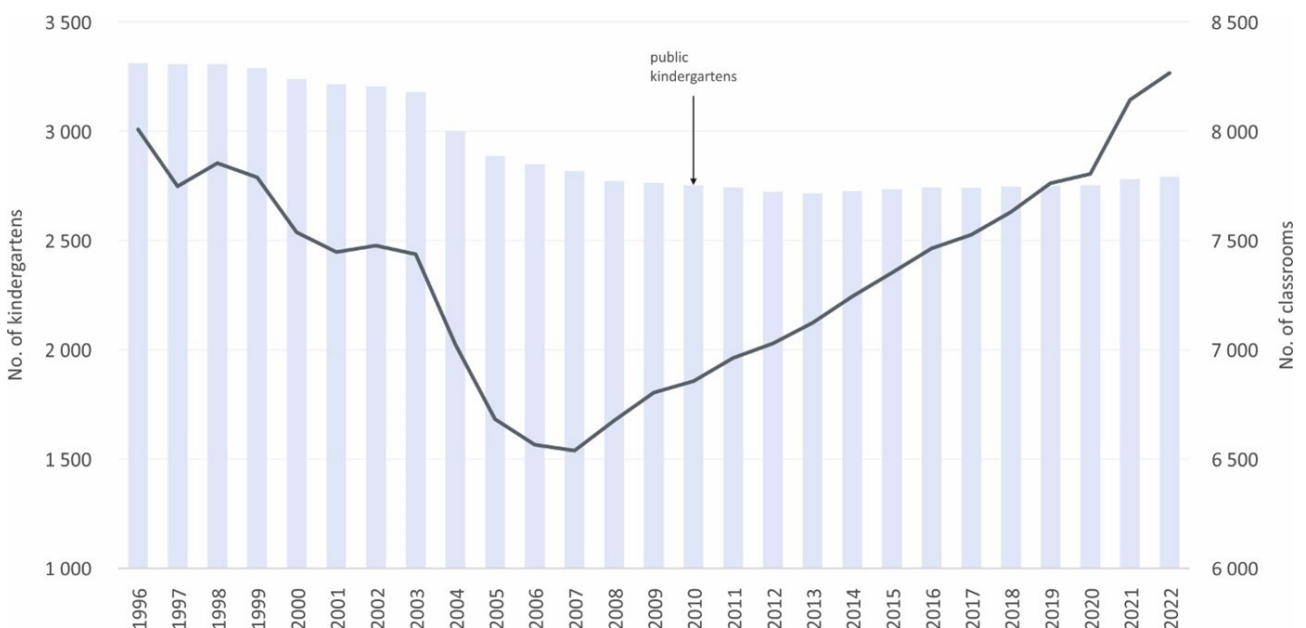


Fig. 4. Development of the number of state kindergartens and their classes in Slovakia in the years 1990 – 2022  
Source: Statistical Office of the Slovak Republic (2022), own processing

and in municipalities with above-average birth rates (municipalities in north-western and northern Slovakia). We recorded 36% of all kindergartens within cities, and they were attended by 51% of children from the total number of children in kindergartens.

The spatial distribution of kindergartens classified by ownership type is also characterized as heterogeneous. More than half (57%) of state kindergartens are in municipalities with fewer than 2,000 inhabitants (Fig. 6). The trend of locating church and private kindergartens is occurring in more populous cities with a higher concentration of inhabitants. More than one-quarter of all private kindergartens are in Bratislava, and more than two-thirds (67%) are in cities with more than 50,000 inhabitants. Less than 10% of private and less than 15% of church kindergartens are in rural regions.

Bratislava (39%) and Košice, together with the Prešov region (27%), have the dominant position in the number of private kindergartens. On the contrary, only 34 (15%) kindergartens were established in western Slovakia. Church kindergartens are most widespread in Eastern Slovakia (38%), followed by Western Slovakia (30%). The smallest number of church kindergartens (13%) is in the Bratislava Region.

During the analysed period, an overall decrease in the number of kindergartens by 6 % took place, explained by the decrease in rural municipalities (Fig. 7). At the same time. However, the share of children attending preschool in Slovakia's regions has increased. The founders of preschool facilities increased their capacity mainly for economic reasons by expanding them, evidenced by the increase in classes (Fig. 8), which was more pronounced in cities (21%).

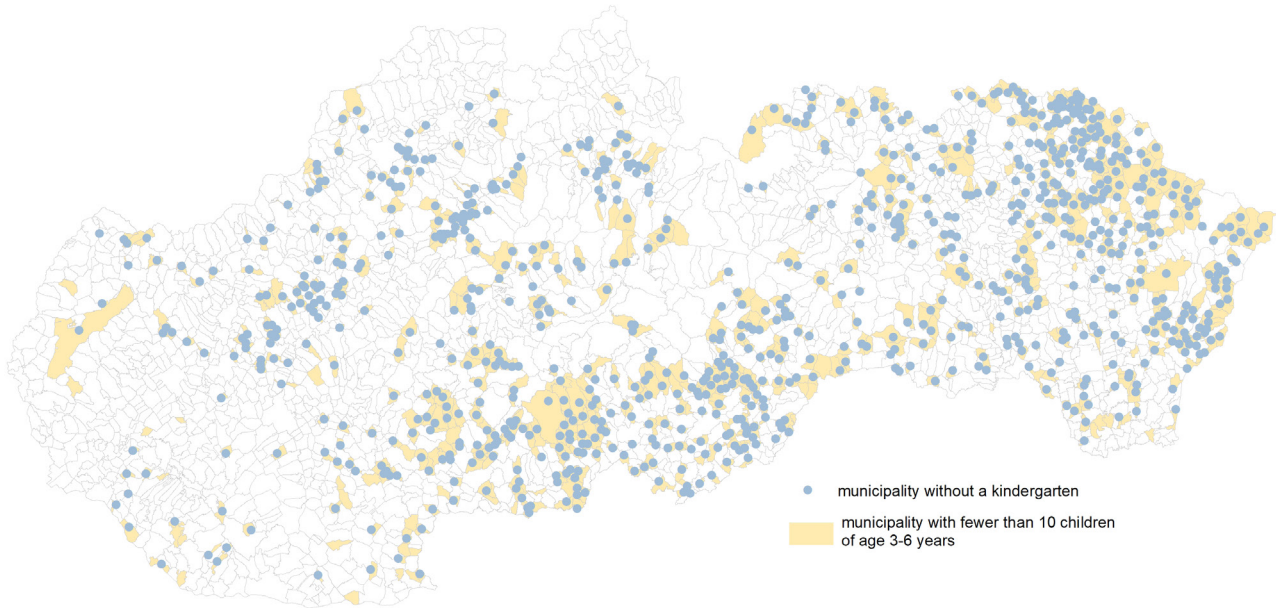


Fig. 5. Municipalities in Slovakia without a kindergarten in 2022  
Source: Statistical Office of the Slovak Republic (2022)

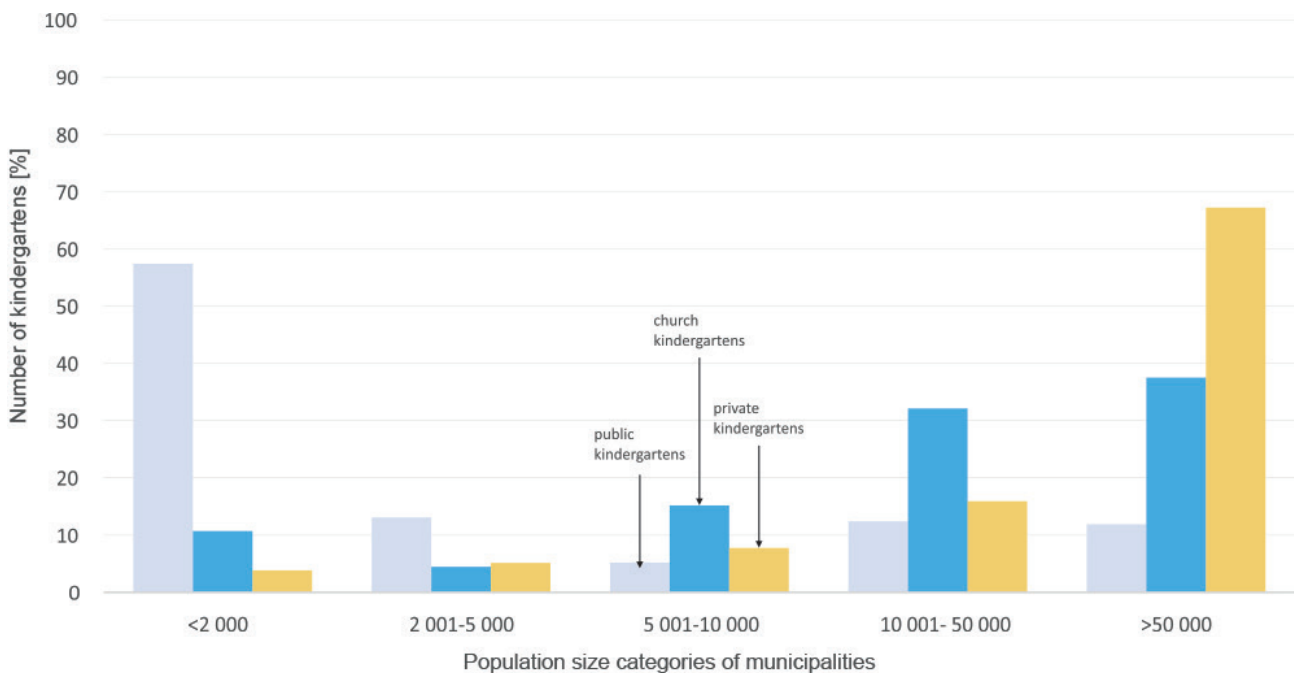


Fig. 6. Kindergartens in Slovakia by type of ownership and size category of municipality in 2022  
Source: Statistical Office of the Slovak Republic (2022), own processing



## 6 DISCUSSION AND CONCLUSIONS

The article identified trends in the development and spatial distribution of kindergartens in Slovakia, which can be summarised in several main results:

- The development of kindergartens was not uniform over the other three decades, and the initial decrease was replaced by the current increase in the number of kindergartens, classes and children.
- Over the past three decades, the pre-primary education market has been significantly liberalised, and private and church kindergartens (especially in cities) have an increasingly important share of the market.
- The spatial distribution of kindergartens is notably uneven. Nearly one-third of municipalities in Slovakia (31%) have no kindergarten, and in some

regions, this is more than half of the municipalities. Preschool education facilities are, therefore, more difficult to access in terms of space and time for the residents of these municipalities and the school-age child cohort due to compulsory school attendance. Migration changes have caused an imbalance in the supply and demand of preschool places (Sládeková Madajová et al., 2021).

The identified trends in pre-primary education in Slovakia are mainly the result of three interacting factors. The first factor we relate mainly to changes in the demographic development of the population. Demographic processes in the last decade of the 20th century were characterised by a change in the behaviour of the population accompanied by a fall in fertility or the birth rate (Šprocha et al., 2022) and the associated reduction of the cohort of children aged 3 – 6

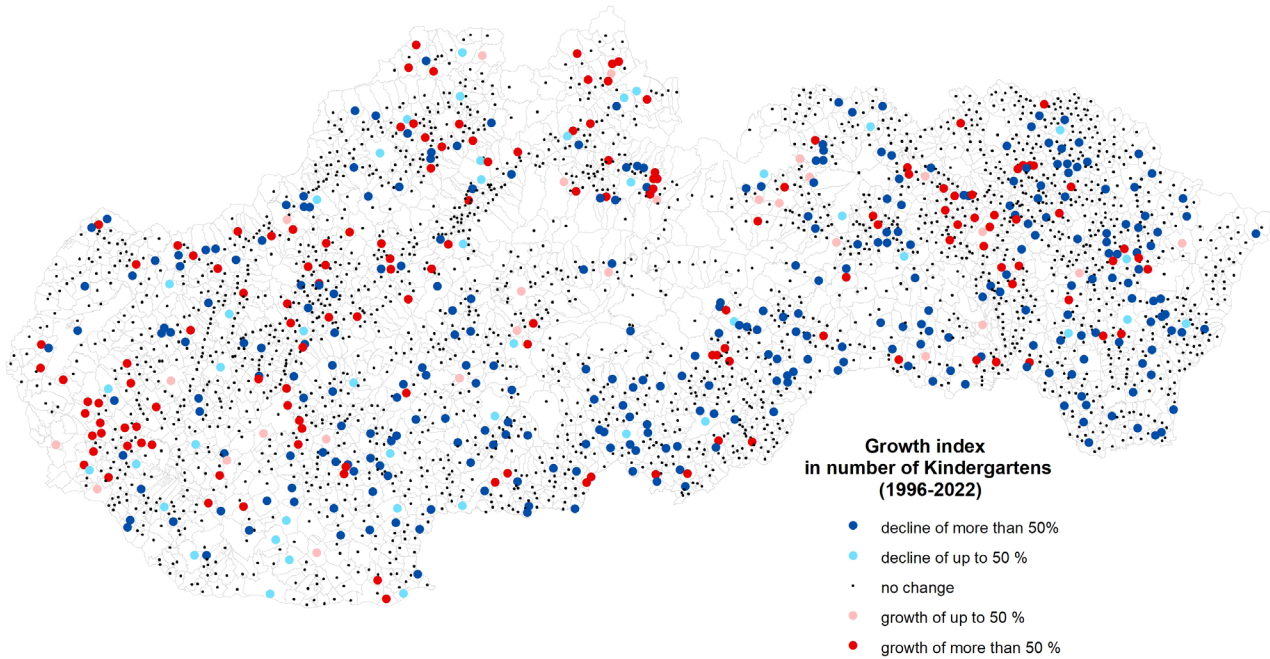


Fig. 7. Growth index of the number of kindergartens in Slovakia between 1996 – 2022

Source: Statistical Office of the Slovak Republic (2022)

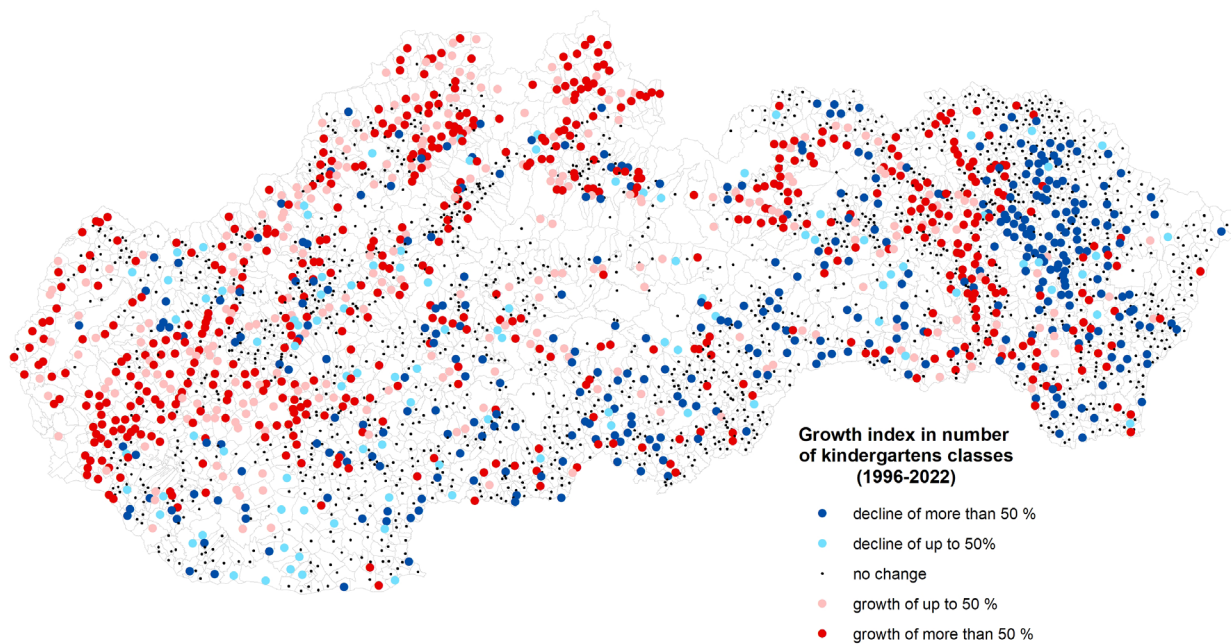


Fig. 8. Index of growth in the number of classes in kindergartens in Slovakia between 1996 and 2022

Source: Statistical Office of the Slovak Republic (2022)

years. These changes were expressed in the reduction of the number of schools in the preschool network. Migration changes have caused an imbalance in the supply and demand for places in preschool facilities, reflected in the number of available spots contrasting with the number of unprocessed applications. In 2022, despite 17,431 rejected applications, 12,354 spots remained available in kindergartens (CVTI, 2023b). While capacities exceed demand in many rural, especially peripheral municipalities, in cities and their immediate surroundings, there is a shortage of places in kindergartens (Sládeková Madajová et al., 2021; Bernard et al., 2022).

The second factor is associated with changes in Slovak legislation. In 1993, a legislative change removed kindergartens from the network of school facilities. In 2001, competencies around kindergartens and primary schools were transferred to municipalities and cities, with subsequent optimisation of the network of kindergartens after 2004 (Sládeková Madajová et al., 2021). By joining the European Union in 2004, Slovakia committed itself to meeting goals in children's participation in pre-primary education. Another milestone in the legislative process is associated with reforms in the field of pre-primary education, which were again introduced to the education system in 2008. These changes were expressed in the increased demand for placing children in kindergartens, in which the necessary capacity was lacking. The following period was characterised by the creation of new, mainly private and church preschools and an expansion of the capacity of state kindergartens. Despite the gradual increase in the enrolment of children aged 3 – 6 years, Slovakia has long been one of the countries with the lowest participation rate of children in pre-primary education within the European Union (Polačková et al., 2023). In reaction to the needs of society and the commitment to increasing schooling, an amendment to the Act on Compulsory Pre-Primary Education of Children from 5 years of age with effect from the 2021/2022 school year was adopted in 2019 and 2023 on the legal right of children from three years of age to a place in preschool with effect from the school year 2024/2025 or 2025/2026. This brings several challenges to ensuring the capacity of the educational process in preschool institutions. Based on data from the statistical survey on schools and school facilities, more than 35,000 children aged 3 – 6 were not being schooled in Slovakia in 2022 (CVTI, 2023b). With the current free capacity of 12,354 places, it will be necessary to add more than 20,000 new places in 2025 to fully achieve the legal right of children from the age of 3 to a place in preschool. One of the main reasons for low enrolment is the lack of and regionally significantly differentiated capacity of places in kindergartens (Sládeková Madajová, 2021).

The third factor influencing the identified trends relates to parents' strategies. The expansion of private schools is closely related to parental demand, insufficient local capacity, dissatisfaction with the quality of education in public schools, differences in teaching approaches, and class sizes (Kučerová et al., 2019; Križan et al., 2025). This demand-driven expansion has also led to a notable increase in private kindergartens, particularly during periods of decline in state kindergarten. As stated by Kučerová et al. (2020), the location of church-affiliated schools is often influenced by their relationship to the church infrastructure. In contrast, private school founders tend to exhibit market-oriented behaviour, responding to sufficient demand and prioritizing prestigious locations. In contrast, geographical placement remains

the most significant determinant for state-owned kindergartens, as confirmed by empirical findings from selected regions in Slovakia.

Furthermore, in recent years, homeschooling has emerged as a gaining in importance parental strategy. This trend involves children receiving pre-primary education within the family environment, reflecting both a shift towards a "new normal" in education and the ideological or pedagogical preferences of parents, as well as general dissatisfaction with the existing education system (Kostecká et al., 2023).

Therefore, we are convinced that future geographical research on pre-primary facilities will need to increasingly consider the individual strategies of parents, which will have a significant impact on the spatial organization of the preschool network and the altered catchment regions.

Slovakia's preschool education system has evolved from a centralized, ideologically driven model to a more diverse and child-centred approach. While significant progress has been made, ongoing reforms are needed to ensure equal access, quality, and modernization in line with European educational standards.

A significant challenge and, simultaneously, a limiting factor in addressing the issue of access to pre-primary education and compulsory preschool attendance is the development of a comprehensive database of such facilities. A primary obstacle in research and planning is the absence of systematic records on preschool institutions and the registration, oversight, and support of providers offering diverse pre-primary education programs (children's groups, community and corporate kindergartens, forest clubs, and others). Additionally, there is a lack of data concerning children whose parents have permanent residency in Slovakia but who live and work abroad (Škvarenina et al., 2023). These factors collectively influence the overall quality and accessibility of early childhood education.

Low enrollment rates and the high number of pending kindergarten applications highlight issues of inadequate capacity. A problem in this regard is the inefficiency of the registration process, which allows parents to submit multiple applications for a single child. This practice artificially inflates the number of pending applications, thereby distorting the actual demand for kindergarten placement.

Another crucial aspect pertains to the economic sustainability of kindergarten operations, particularly in small municipalities with populations of up to 1,000 inhabitants and a limited number of preschool-aged children. The minimum threshold for establishing a kindergarten is generally considered to be 20 children (Polačková et al., 2023).

Examining the spatial distribution of preschool facilities is essential to ensuring equitable access to quality early childhood education. Addressing these challenges, particularly within geographical communities, can lead to more effective resource management and an overall improvement in societal well-being. Enhancing access to early education benefits not only parents but, most importantly, contributes to the educational development and long-term success of children. This research is essential for the creation of a more equitable, efficient, and accessible early childhood education system.

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## Footnotes

<sup>1</sup> The network is a list of schools and school facilities that are authorised to provide education and training according to Act No. 245/2008 Coll. on Upbringing and Education, and on the amendment of certain acts, as amended.

<sup>2</sup> The maximum number of children in a class ranged from 18 to 22 children, depending on the age (Act No. 245/2008).

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## Legislative documents:

- Act No 279/1993 Coll. on School Establishments
- Act No 416/2001 Coll. on transfer of certain competencies from the state administration to municipalities and higher territorial units
- Act No 596/2004 Coll. on state administration in education and school self-government
- Act No 245/2008 Coll. on education and training (Education Act)
- Act No 209/2019 Coll. amending Act No. 245/2008 on education and training (Education Act)



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