

# **Policy research on the expansion of compulsory education: a systematic review (2015-2024)**

## **Investigación sobre políticas de ampliación de la educación obligatoria: revisión sistemática (2015-2024)**

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**Carmen Álvarez-Álvarez**

<https://orcid.org/0000-0002-8160-2286>

*University of Cantabria*

**Edwin José Triana-Teherán**

<https://orcid.org/0000-0002-4928-285X>

*Autonomous University of Barcelona*

### **Abstract:**

Different countries worldwide are considering changes to compulsory education policies to extend the duration of basic schooling due to its benefits for individuals, societal progress, and economic development. However, such reforms imply significant challenges and far-reaching implications that must be carefully addressed. This study presents a systematic review of scientific literature published between 2015 and 2024. The articles were identified through two academic databases (WOS and Scopus) and two artificial intelligence tools (Consensus and Perplexity). After a rigorous screening process, a total of 22 relevant articles focusing on the expansion of pre-primary, primary, and secondary education stages were analyzed. This review explores the challenges, implications, benefits, and potential negative impacts of such reforms. The findings highlight the inherent complexity of policies aimed at expanding compulsory education. Key considerations include investment in infrastructure, teacher training and recruitment, opportunity costs, curriculum updates, and the importance of deliberate planning and coordination to mitigate the pressures on the

education system. Notably, the review emphasizes that expanding compulsory education particularly benefits vulnerable groups, including girls and female adolescents, students from rural areas, and individuals from lower socioeconomic backgrounds. Nevertheless, the expansion of compulsory schooling does not automatically guarantee quality or equity. The study underscores the need for targeted measures to address these issues, given that education systems are diverse, unequal, and often inadequately equipped to accommodate diversity or provide alternatives for individuals who wish to leave formal education to pursue work opportunities.

**Key words:** compulsory education; educational policy; access to education; educational reform; equity.

### **Resumen:**

Los diferentes países del mundo se plantean realizar cambios en las políticas de educación obligatoria para ampliar los años de escolarización básica por los beneficios que producen para los ciudadanos, el avance de las sociedades y la economía. Sin embargo, estos procesos de cambio conllevan numerosos desafíos y tienen considerables repercusiones que deben considerarse. En este artículo se realiza una revisión sistemática de la literatura científica publicada durante el periodo de 2015 a 2024. Los artículos se localizaron a través de dos bases de datos (WOS y Scopus) y dos herramientas de inteligencia artificial (Consensus y Perplexity). Tras realizar un proceso de filtraje se trabajó con un total de veintidós artículos válidos que abordan la ampliación de las etapas de Educación Infantil, Primaria y Secundaria. Se exploran los desafíos, las implicaciones, los beneficios y otros impactos negativos. Los resultados muestran la gran complejidad inherente de las políticas de ampliación de la educación obligatoria y focalizan en aspectos de interés que todos los estados deben sopesar sosegadamente: la inversión en infraestructura, la formación y contratación de profesorado, el coste de oportunidad, la necesaria actualización curricular, y la conveniencia de planificar y coordinar intencionadamente todos los esfuerzos para aminorar la carga de presión que sufrirá el sistema escolar. La revisión realizada pone de relieve que la ampliación de la educación obligatoria beneficia muy especialmente al alumnado más vulnerable: las niñas y las adolescentes, los estudiantes de zonas rurales y las clases sociales más bajas. No obstante, la ampliación de la escolarización obligatoria no es sinónimo automático de calidad y equidad, haciendo visible también la necesidad de medidas que aborden ambas cuestiones decididamente, ya que los sistemas educativos son plurales, desiguales y tienen deficiencias para atender a la diversidad y ofrecer alternativas a las personas que desean trabajar y abandonar el sistema educativo.

**Palabras clave:** educación obligatoria; política educativa; acceso a la educación; reforma educativa; equidad.

## Introduction

Compulsory education is a key component in the development of modern education systems, as it ensures a more equal access to knowledge and promotes both individual and social benefits (Baltagi et al., 2019; Gluz et al, 2018; Grenet, 2013). Increasing the duration of compulsory education has a significant impact on the reduction of education inequalities, especially among the most vulnerable groups (Osorio, 2019), such as when early childhood education (Correa, 2011; Mesomo and Souza, 2019), or Primary Education is extended (Maeda et al., 2024), and even Secondary Education (Afonso and Aubyn, 2006).

In addition, it is important to point out that the impact of education policies is not homogenous, as it can considerably vary as a function of the social, economic, cultural, and institutional context into which they are implemented (Lewis and Nguyen, 2020). In this sense, Besche-Truthe (2022) has proposed a comparative classification of countries according to the duration of compulsory education, establishing eight differentiated groups. The analysis performed by the author reveals that there is no clear geographical pattern in this distribution, which evidences the influence of political and structural factors specific to each country. Within this framework, Spain is found among the countries with a prolonged compulsory education, including Early Childhood, Primary, and Secondary Education, with an expansive trend towards posterior stages such as Post-Compulsory Secondary Education and Higher Education. This group, composed of 35 countries, is mostly characterized by having high levels of human development, according to the Index of Human Development of the United Nations Development Program (United Nations Development Programme, 2025), which suggests a good correlation between a sustained investment in education and the degree of socioeconomic development.

The decisions related with increasing the duration of compulsory education are inherently complex due to their impact on diverse aspects of the social and educational fabric (Correa, 2011; Mesomo and Souza, 2019; Gluz et al, 2018; Osorio, 2019). In first place, students are the first group that is most affected and benefitted, as the intention is to extend their stay in the

education system to guarantee basic skills and better prepare them for their future insertion into the workforce (Besche-Truthe, 2022; Brunello et al., 2009). However, these policies must consider the pre-existing inequalities that could make difficult the permanence of vulnerable students, as well as those coming from families with limited resources or unfavorable socioeconomic contexts (Bernstein, 1971; Gluz et al, 2018).

Therefore, it is important to not only provide opportunities for attending school, but also make students feel comfortable and even part of the education system (Maeda et al., 2024). Nevertheless, prolonging compulsory education tends to reduce education gaps, as it offers more opportunities to groups that are more at-risk, thus creating a more equitable society (OECD, 2012; Osorio, 2019). Nevertheless, if the expansion of the existing compulsory schooling is lengthened to an age in which the basic skills are already established (by creating compulsory post-secondary schooling), additional education may be less effective (Tominey, 2010).

As for the teaching staff, prolonging compulsory education tends to imply greater demands on educators, who must adapt to a more diverse student body with more heterogeneous education needs (Correa, 2011). This underlines the importance of investing in continued teacher training, in pedagogic resources that facilitate inclusive education, in teacher support policies, as their preparation is essential for achieving the successful implementation, and in financial measures (Correa, 2011; UNESCO, 2019). In addition, given the demands and the regulatory and curricular changes that frequently occur in Spain, it is possible to highlight the tension that this measure could produce in some of the teaching staff, specifically the Secondary Education teachers (Sanz Ponce et al., 2023).

The changes also greatly affect the business fabric, as an increase in the minimum schooling age could alter the availability of young workers, especially in sectors that traditionally depend on them, thereby implying readjustments between the labor market and the school system (Grenet, 2013). However, these policies can benefit business in the long term when provided with staff that is better qualified for the demands of the current market. As the human capital model argues, increasing the duration of compulsory education improves work productivity and contributes to general economic growth

(Harmon, 2017). In the labor market and the economy, a positive impact on employability and income has been observed when increasing the duration of compulsory education, particularly in those with a lower level of initial education (Brunello et al., 2009). For example, some studies on reforms in the United Kingdom and other European countries have shown that the additional years of training improve the basic skills needed in different work sectors, which contributes to a higher economic mobility and a reduction in salary inequalities. Comparative studies have shown that education systems that efficiently optimize their resources to obtain the maximum benefits from these policies, such as Finland and the Netherlands, achieve high levels of academic performance and equity with lower relative costs, while other countries face challenges to maximize the return of these policies (Afonso and Aubyn, 2006).

Reforms such as those implemented in Sweden in the 20th century, which introduced comprehensive education lasting 9 years, helped reduce class barriers when providing more equal education opportunities. However, these policies also faced opposition, especially from those who argued for the early selection by academic level, which highlights the complexity of balancing social and political demands (Erikson and Jonsson, 1996). In the Spanish context, Viñao (2004) and Escolano (2010) have indicated that increasing the duration of compulsory education has played an essential role in the modernization of the education system and the promotion of social equity.

Likewise, it is fundamental to underline that the benefits transcend the individual and positively affect society in general. A citizenry with higher levels of education tends to become involved in civil and political life with a greater commitment, exerting their rights and duties in an informed and critical manner. This increase in democratic participation contributes to the strengthening of the institutions, the consolidation of a more inclusive and deliberative political culture, and the creation of a more cohesive and equal society. As a result, a more stable and resilient social setting is created, against modern challenges, such as inequalities, polarization, or exclusion (UNESCO, 2019). In this way, increasing the duration of schooling is an essential pillar for progress and the sustainability of modern democracies.

As a whole, these policies are a magnificent tool for promoting social cohesion and economic development, although they require specific adjustments to maximize their impact in different European contexts. It is important, necessary, and relevant, for these decisions to be based on solid, research-based evidence. For this, the guideline changes must be founded on rigorous and relevant information, which promotes more transparent and efficient decisions, aligned with the public interests (Imlig and Ruoss, 2015).

The present article presents a systematic review of the publications found in the Web of Science and Scopus databases in the last ten years. The systematic review of compulsory education expansion policies is essential, as these directly affect different areas, such as the reduction of education inequalities, health improvement, the development of work skills, and long-term economic growth (Baltagi et al., 2019). However, their success depends on contextual factors, such as socioeconomic conditions, the educational infrastructure, and the support system for vulnerable students (Correa, 2011; Mesomo and Souza, 2019; Osorio, 2019). A systematic review allows for the identification of good practices, the assessment of results from different regions, and the adaptation of strategies to local needs. In addition, it provides a solid basis of evidence that provides information for those responsible for decision making, to reduce the application of inefficient or counterproductive measures (OECD, 2012; UNESCO, 2019).

## Method

The general aim of the present study is to perform an exhaustive study of the scientific articles on the expansion of compulsory education published in the last decade. The objective was not only to compile and summarize the knowledge created in this area, but also to develop a current diagnosis that allows us to comprehensively understand the most relevant variables underlined in previous studies: (1) the challenges faced by the different countries, (2) implications of the changes, (3) the benefits obtained, and (4) other negative impacts observed.

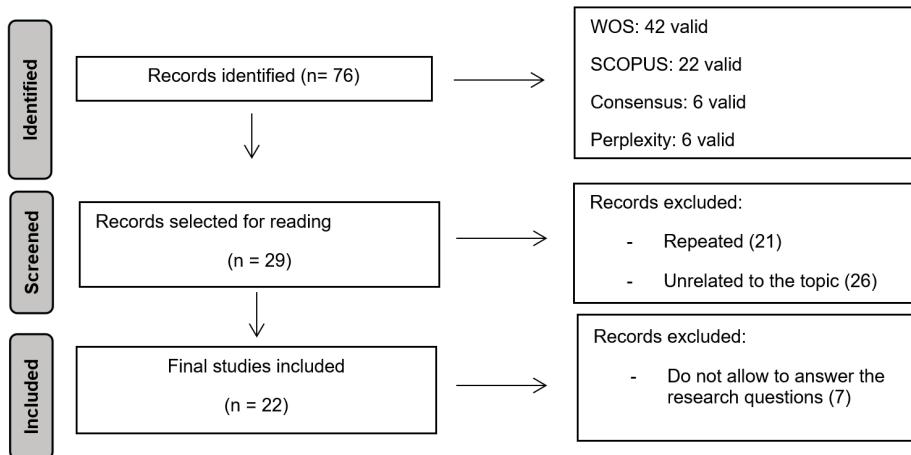
For this, searches were performed in two relevant databases: the Web

of Sciences (WOS) and Scopus, given their international importance. The method followed, in line with the PRISMA guidelines (Page et al., 2021), started with the design of a search equation common to both databases, with the search performed in the “title” field: (extension OR expansion OR lengthening OR prolongation OR increase OR enhancement OR widening OR broadening OR augmentation OR advancement) AND (compulsory OR mandatory OR required OR obligatory OR attendance OR basic) AND (school OR education). A total of 64 articles were found, 42 in WOS and 22 in Scopus.

To complete the search, two artificial intelligence tools that are gaining importance in the scientific field were used: consensus and perplexity, increasing the records found to 76. The search equation was provided, and the tools were asked to find articles in both databases, with 12 more different articles found that had not been found in the WOS and Scopus databases, and which fit the topic (6 in Consensus and 6 in Perplexity). The prompt used was: “You are an education researcher and want to find scientific articles between 2015 and 2024. The search equation was: (extension OR expansion OR lengthening OR prolongation OR increase OR enhancement OR widening OR broadening OR augmentation OR advancement) AND (compulsory OR mandatory OR required OR obligatory OR attendance OR basic) AND (school OR education)”.

When reviewing the title, keywords, and abstract, 47 articles were discarded, because: they were duplicates (21) or were not related to the topic (26). Finally, 26 articles successfully passed the screening phase. In addition, 7 articles were eliminated as they could not provide an answer to the research questions. A total of 22 articles were included in the study. The search process is found in the following flow diagram (see Figure 1).

**Figure I.** Flow diagram: Seventy-six texts were identified (42 in WOS, 22 in Scopus, 6 in Consensus, and 6 in Perplexity). During screening, 21 duplicates and 26 texts unrelated to the topic were excluded, leaving 29 articles to be read. During reading, 7 articles that did not answer the research questions were excluded, leaving a final total of 22 studies.



Source: Author created

The variables object of study were structured around four main categories that allowed for a detailed and exhaustive analysis. In first place, an analysis was performed of the challenges associated to the policies analyzed, which included the main challenges, difficulties, and barriers identified in diverse studies. In second place, the repercussion from these policies are analyzed, underlining the changes needed in the practical, theoretical, and strategic areas that different countries must address to guarantee the expansion of compulsory education. In third place, the benefits obtained are considered, understood as the opportunities, advantages, and achievements obtained by the different countries thanks to the implementation of these policies. Lastly, other impacts generated are addressed, a category that encompasses additional effects, both positive and negative, which are not exclusively limited to the benefits expected, but which are still relevant. This classification allows us to perform a comprehensive analysis of the variables studied, which provides a

balanced and critical view of the policies examined.

The selected articles were obtained in full, which allowed for an exhaustive and detailed analysis of each of them. Relevant information related with the four previously-described key variables was extracted from the 22 articles included in the study. This information was used to construct a highly complex table-matrix that served as the core tool for the analysis. This table-matrix organized the data systematically, which facilitated the qualitative treatment of the information. The categorization implied developing successive phases of coding, thematic grouping, and review, to guarantee the consistency of the results obtained.

## Results

The 22 articles analyzed address the expansion of compulsory education in different stages of education and contexts. The focus, centered on very varied topics, analyzed significant changes in the lengthening of the schooling period. The following table, organized according to stages of education and alphabetical order of the authors, presents a summary of the articles (see Table 1).

**Table I.** The 22 studies analysed are summarised, with indications of authors and date of publication, countries, human development index, educational stages, changes in educational policies and focus of the study.

Authors and date	Countries	Human development index	Stages of education	Changes in the education policies	Focus of the study
da Cruz, 2017	Brazil	High	Early Childhood	Extend compulsory education to 9 years, between Preschool and Primary	Articulation between Early Childhood and Primary Education
Akboga, 2016	Turkey	Very high	Primary	Extension of primary education from 5 to 8 years.	Shift from a broad religious-led education system to a “modern” secular system
Bamidele et al., 2024	Nigeria	Medio	Primary	Universal Basic Education Program	Analyze school drop-outs

Dursun and Cesur, 2016	Turkey	Very high	Primary	Compulsory schooling from 5 to 8 years	Impact of compulsory education on hope and happiness
Elsayed, 2019	Egypt	High	Primary	Extension of Primary Education from 5 to 6 years	Educational reform of Primary Education
Fischer et al., 2020	Sweden	Very high	Primary	Expansion of Primary Education through reform	Educational reform of Primary Education
Gulesci et al., 2020	Turkey	Very high	Primary	Extension of Primary Education from 5 to 8 years	Effect of compulsory schooling on the rejection of domestic violence
Kunt Šimunović, 2024	Turkey	Very high	Primary	Increase in compulsory schooling from 5 to 8 years	Impact of increased compulsory schooling on patience
Kırdar et al., 2018	Turkey	Very high	Primary	Compulsory schooling from 5 to 8 years	Increase in the age of schooling
Valente, 2019	Tanzania	Medio	Primary	Elimination of tuition fees	Impact of the elimination of tuition fees
Avendano et al., 2020	Great Britain	Very high	Secondary	Reform of the Compulsory School Leaving Age	Raise the minimum school leaving age to 16
Brilli and Tonello, 2018	Italy	Very high	Secondary	Increase compulsory education by one year (from 14 to 15)	Crimes committed by adolescents
da Silva, 2019	Brazil	High	Secondary	Increasing the duration of basic education	Access to basic education
Erten and Keskin, 2019	Turkey	Very high	Secondary	Extend education from 8 to 12 years	Extending education to 12 years
Iñigo and Río, 2016	Argentina	Very high	Secondary	Expansion of Secondary Education	Universalization of reading and writing
Juusola, 2023	Finland	Very high	Secondary	Extension of Secondary Education to age 18	Students' thoughts on expanding compulsory education
Oppong-Nkrumah et al., 2019	Burkina Faso, Colombia, Malawi	Low, high and low	Secondary	Schooling between 12 and 17 years	Comparison of basic education in three low-income countries
Rauscher, 2016	United States	Very high	Secondary	Compulsory schooling laws (1850-1930)	School mobility
Rauscher, 2015	United States	Very high	Secondary	Compulsory schooling laws (1850-1930)	School mobility
Rolleston and Iyer, 2019	Vietnam	High	Secondary	Enrollment in tenth grade (upper secondary school)	Factors influencing enrollment
Valero-Gil and Valero, 2022	Mexico	High	Secondary	Schooling between 12 and 14 years	Increase in school attendance
Peng and Wang, 2024	China	High	Secondary	Reform of Compulsory and Free Education	Impact of free compulsory education in rural China

Source: Author created

As Table I shows, one of the articles was framed within Early Childhood Education, nine in Primary Education, and twelve in Secondary Education. All of them were published between 2015 and 2024. According to the country, a great variety was found, although 6 studies were conducted in Turkey. Given that the level of development of the participating countries may be of interest to the reader to better understand the studies, their ranking in the classification of the United Nations Development Programme (United Nations Development Programme, 2025) has been indicated in the Human Development Index (HDI) column. The study included 13 countries with a very high HDI, 7 countries with a high HDI, 2 with a medium HDI, and 2 with a low HDI. Most of the studies analyzed had a very high or high HDI (20), such as the current ranking of Spain. Only 2 studies were far from the most common profile: one performed in Burkina Faso, Colombia, and Malawi, with a low, high, and low HDI, respectively (Oppong-Nkrumah et al., 2019), and another conducted in Nigeria (Bamidele et al., 2024) and Tanzania, with a medium HDI level (Valente, 2019).

To account for the results of the study, these have been organized into four main axes that allow for a comprehensive understanding of the findings, following the four previously-described categories: (1) challenges, which encompass the main difficulties and barriers faced in the process analyzed; (2) implications, underlining the practical, theoretical, and strategic consequences derived from these challenges; (3) benefits, which reflect the opportunities and advantages associated with the practices or decisions studied; and (4) other impacts, incorporating negative collateral effects that are not strictly framed within the previous categories, although they are relevant for the overall understanding of the results. Given that the articles reviewed addressed the growth of Early Childhood Education, Primary Education, and Secondary Education, the results will be shown organized by axes and stages.

## Challenges

The challenges described by the articles reviewed were related with structural limitations, social resistance, and problems in the implementation that were identified in different contexts in the different countries. Knowing about them can help in better planning the process of change.

In the Early Childhood Education stage, the only article that addressed it posed three challenges (da Cruz, 2017): (1) Investments in Early Childhood Education in Brazil are insufficient. (2) It is necessary to improve the quality of schools in Early Childhood Education. (3) Educational segmentation between stages must be avoided.

In the Primary Education stage, the nine studies reviewed posed several challenges, organized according to frequency, from higher to lower:

- Investment: (1) in creating and improving infrastructure; (2) in building or improving school facilities; (3) for teachers' salaries (Bamidele et al., 2024; Elsayed, 2019; Fischer et al., 2020; Gulesci et al., 2020; Kirdar et al., 2018; Kunt Šimunović, 2024; Valente, 2019). Availability and/or teacher training (Bamidele et al., 2024; Elsayed, 2019; Kirdar et al., 2018; Kunt Šimunović, 2024).
- Transportation in rural areas, the establishment of boarding schools and consolidation of rural schools (Gulesci et al., 2020; Kunt Šimunović, 2024).
- Create teaching materials to be used when teaching during the new academic years to be implemented (Bamidele et al., 2024).
- Encourage family participation and take into account the socio-economic barriers that prevent them from becoming involved in the educational process of children (Bamidele et al., 2024).
- Cultural resistance to increasing the time devoted by children or young people to schooling (Kirdar et al., 2018).
- Reduction in the time devoted to Secondary Education by increasing the time devoted to Primary Education (Akboga, 2016).
- Increase in the student-teacher ratio (Valente, 2019).
- Tensions in the educational offerings of religious and secular schools (Akboga, 2016).

- Parents decide when their children start primary school, which is lax (Dursun and Cesur, 2016).
- A rapid increase in enrollment in many developing countries could worsen the quality of education (Valente, 2019).

In the Secondary Education stage, the twelve studies reviewed posed many challenges, some of which were similar to those described previously in Primary Education. These are ordered according to their frequency of appearance in the studies, from the most mentioned to the least.

- Significant investment in infrastructure, teaching staff and pedagogical resources (da Silva, 2019; Erten and Keskin, 2019; Oppong-Nkrumah et al., 2019; Peng and Wang, 2024); Rolleston and Iyer, 2019; Valero-Gil and Valero, 2022).
- Opportunity cost. For low academic performance students, the decision to continue formal schooling for another year may mean losing immediate job opportunities (Avendano et al., 2020; Erten and Keskin, 2019; Juusola, 2023; Valero-Gil and Valero, 2022).
- Discomfort among low-performing students who want to leave secondary school to work (Avendano et al., 2020; Brilli and Tonello, 2018; Juusola, 2023).
- Poverty and lack of economic opportunities that generate resistance because low-income families require all members to survive (Oppong-Nkrumah et al., 2019; Valero-Gil and Valero, 2022; Peng and Wang, 2024).
- Implement security measures in educational centers to prevent violence and bullying (Brilli and Tonello, 2018).
- Increase in enrollment (Brilli and Tonello, 2018).
- High rates of educational dropout and exclusion (da Silva, 2019).
- Segmentation between general preparatory training and technical and vocational training, which reflects the different educational and professional paths available (da Silva, 2019).
- Outdated resume (da Silva, 2019).
- Educational segmentation in different, very marked stages (Iñigo and Río, 2016).
- Difficulty taking a year off (Juusola, 2023).

- Achieve free education (Oppong-Nkrumah et al., 2019).
- Existence of child labor prior to the legal working age (Oppong-Nkrumah et al., 2019).
- Elites seeking to maintain their educational and social advantage in education by taking actions that keep them in a privileged position (Rauscher, 2015, 2016).
- State expenditure favors the attendance of more students (Rolleston and Iyer, 2019).
- Restricted access by exam-based selection (Rolleston and Iyer, 2019).
- Regional inequalities that exacerbate the educational gap between areas with greater and lesser financial capacity (Peng and Wang, 2024).
- Migrations make the continuation of education difficult (Peng and Wang, 2024).

## Implications

Taking on a process of changing the duration of the schooling period logically has many implications, such as reforms, pedagogic transformations, and guideline adaptations. Knowing the implications of this change can help visualize the viability of extending the schooling time of children and youth in any country.

In the Early Childhood stage, the only article that addressed it described an implication that must be considered: Early Childhood Education must not only become a preparatory stage for Primary Education. This means that it must not only be centered on learning how to read and write, as it hinders age-appropriate play and interactions (da Cruz, 2017).

In the Primary Education stage, the nine studies reviewed posed numerous implications when extending the basic schooling period, such as:

- Highly trained teachers are required to teach at higher levels (Bamidele et al., 2024; Elsayed, 2019; Valente, 2019).
- A review of the curricula and study plans is necessary (Elsayed, 2019; Fischer et al., 2020).

- Adequate funding is important to cover expenses. A lack of funding can undermine the potential benefits of increasing access to education (Valente, 2019).
- The freedom to choose a vocation is restricted at earlier ages (Akboga, 2016).
- Education must respond to the needs of the labor market (Bamidele et al., 2024).
- Expanding schooling must be part of a broader quality improvement strategy that addresses disparities in educational outcomes (Fischer et al., 2020).
- Students who are most likely to be excluded from the educational system must be taken into account in order to provide them with the additional support they require (Valente, 2019).
- If the quality of education is low, it discourages enrolling in Secondary Education (Elsayed, 2019).
- Expanding children's schooling can have positive and negative impacts on their families' attitudes toward education (Gulesci et al., 2020).
- Taking into account both global and local culture and understanding the complex interaction between them in a reform process (Akboga, 2016).
- It may involve the closure of secondary schools and different types of centers (religious centers, for example) (Akboga, 2016).
- More patient people choose to further their education. However, an increase in the schooling age does not automatically guarantee an increase in patience (Kunt Šimunović, 2024).
- Socio-cultural change: Increased education can alter women's preferences and aspirations, leading to a delay in marriage and childbearing (Kırdar et al., 2018).
- It is necessary to continuously monitor and evaluate the educational change process (Valente, 2019).

In the Secondary Education stage, the twelve studies reviewed posed varied implications, with some of them coinciding with those previously found in Primary Education.

- Demand for higher quality education at all schools to achieve desirable capabilities in the population. However, as schooling increases, differences in quality increase (da Silva, 2019; Iñigo and Río, 2016; Rauscher, 2015, 2016).
- Need to offer alternative routes to low-performing students who want to work or work because they need to (Avendano et al., 2020; Oppong-Nkrumah et al., 2019; Valero-Gil and Valero, 2022).
- Education system preparation, policy review, coordination between different levels of government, and the mobilization of financial resources are required to ensure the system's sustainability. This includes having enough time for teaching staff availability (Brilli and Tonello, 2018; da Silva, 2019; Peng and Wang, 2024).
- Increasing schooling in the Secondary stage implies a reaffirmation of the right to education, an increase in the rate of access to the education system and a greater capacity to include the more vulnerable social sector (da Silva, 2019).
- In Secondary Education, the crime rate among 14-year-olds can be reduced by 11.5% (Brilli and Tonello, 2018).
- There may be a mismatch between supply and demand in the labor market (Erten and Keskin, 2019).
- Grades influence the perspective of the future: pressure to succeed at school (Juusola, 2023).
- Equity should imply that secondary school does not entail additional costs (Juusola, 2023).
- Access to the centers should be provided through a merit system in order to act fairly in the allocation of places (Rolleston and Iyer, 2019).

## Benefits

The articles reviewed referred to many benefits from the expansion of schooling in the contexts of the different countries analyzed. In summary, the following are described:

In the Early Childhood Education stage, the sole article analyzed

described the increase in the opportunity to access education of the 0-6 years-old population as a benefit of expanding schooling (da Cruz, 2017).

In the Primary Education stage, the nine studies reviewed provided six benefits from extending the period of schooling in this stage, related with a greater access of the population to education and improvement in knowledge, skills, and competences.

- Increasing the educational opportunities of women. This leads to a delay in the age of marriage and maternity. This also results in improvements in the mother's and children's health, the education of the children, and general well-being (Kırdar et al., 2018). Prolonged primary education significantly increases the happiness and empowerment of young women (Dursun and Cesur, 2016) and a longer compulsory education reduces the probability of considering domestic violence justifiable by 12 percentage points, which represents a 43 percent decrease (Gulesci et al., 2020).
- The equality of opportunities is promoted for children in rural contexts and from more disadvantaged communities, aside from reducing child labor (Akboga, 2016; Bamidele et al., 2024; Elsayed, 2019). In this way, individual and social empowerment, a higher access to education, and a reduction in inequalities is achieved (Valente, 2019).
- A reduction in poverty and health improvements (Bamidele et al., 2024; Elsayed, 2019).
- Better preparation for Secondary Education, Higher Education, and work, which requires a good development of basic skills (Elsayed, 2019; Fischer et al., 2020).
- Greater access to secular education and universal values such as democracy and human rights (Akboga, 2016).
- A longer period of schooling can help contribute to a cultural change that highly values planning and the future. When increasing the schooling age, people can be helped to make more rational decisions, planning for the future, and resist immediate gratification (Kunt Šimunović, 2024).

In the Secondary Education stage, the twelve studies reviewed mentioned five great benefits, with a high coincidence between them.

- Increase in the educational level of boys and girls: a higher proportion of students complete secondary school, and lower dropout rates (Avendano et al., 2020; da Silva, 2019; Erten and Keskin, 2019; Juusola, 2023; Peng and Wang, 2024; Rauscher, 2016; Valero-Gil and Valero, 2022).
- Improvements in training that facilitate access to the labor market (Avendano et al., 2020; Brilli and Tonello, 2018; da Silva, 2019; Iñigo and Río, 2016; Rauscher, 2016; Rolleston and Iyer, 2019; Peng and Wang, 2024) and the university (Juusola, 2023).
- Marginalization is prevented, health levels are improved and crimes are reduced (Brilli and Tonello, 2018; Juusola, 2023; Valero-Gil and Valero, 2022; Peng and Wang, 2024).
- Young people have more time to decide about the future (Juusola, 2023) and become more critical and academically competent citizens (da Silva, 2019; Rauscher, 2015; Peng and Wang, 2024).
- Child labor, child trafficking, and poverty are reduced, and further education for girls is encouraged (Oppong-Nkrumah et al., 2019; Valero-Gil and Valero, 2022; Peng and Wang, 2024).

## Other impacts

The articles reviewed also mentioned other impacts that were not so positive for Primary and Secondary Education that must be considered in the process of changing the duration of schooling of children and youth.

In the Primary Education stage, the nine studies reviewed posed eight negative aspects that must be considered.

- Not all education will be of quality, given the intrinsic disparities of educational systems (Bamidele et al., 2024; Elsayed, 2019; Fischer et al., 2020; Valente, 2019).
- Opportunity cost: loss of income due to a family member not working (Akboga, 2016; Elsayed, 2019; Fischer et al., 2020; Valente, 2019).
- High economic cost for countries (Bamidele et al., 2024; Kirdar et al., 2018).

- Increased costs for families (school supplies, transportation, or uniforms) (Elsayed, 2019; Fischer et al., 2020).
- Saturation or pressure exerted on all resources (human, economic, and intangible) of educational systems (Bamidele et al., 2024; Kirdar et al., 2018).
- In countries where religion plays an important role in education, even in public education, social polarization can occur between the (secular) and religious sectors. This can lead to demonstrations and debate about the role of religion in education (Akboga, 2016).
- Boys' literacy and schooling rates increase as compared to girls'. This creates a widening gender gap (Elsayed, 2019).
- Once women leave school, marriage and fertility rates increase, suggesting that education alone is not enough to change deeply rooted cultural norms (Kirdar et al., 2018).

In the Secondary Education stage, the 12 studies reviewed identify various negative impacts, with some of them coinciding with those found in Primary Education.

- Opportunity cost: families lose the possibility of having one more member contribute to their income through work (Valero-Gil and Valero, 2022 Erten and Keskin, 2019; Iñigo and Río, 2016; Oppong-Nkrumah et al., 2019; Peng and Wang, 2024).
- Pressure on the education system: A sudden increase in demand for education can put pressure on the infrastructure and available resources, which affects the quality of education (da Silva, 2019; Erten and Keskin, 2019; Peng and Wang, 2024).
- Not all education will be of quality, due to the intrinsic disparities of the different educational systems (da Silva, 2019; Erten and Keskin, 2019; Oppong-Nkrumah et al., 2019).
- Difficulty in addressing diversity by teachers (da Silva, 2019; Juusola, 2023).
- It worsens the mental health of low-performing students who want to work (Avendano et al., 2020).
- Crimes in schools increase (although they decrease outside of schools) (Brilli and Tonello, 2018).

- The number of students per teacher increases, given the increase in the influx of students, especially in vocational training schools (Brilli and Tonello, 2018).
- If the education system fails to respond to the needs and interests of young people, compulsory schooling can lead to an increase in school dropouts (da Silva, 2019).
- Pressure for success in students (Juusola, 2023).
- Possible credential inflation at the social level (Rauscher, 2016).
- Cost and test-based selection can exacerbate existing inequalities and limit access to education for low-income students (Rolleston and Iyer, 2019).
- Mismatch between supply and demand: If the labor market does not offer enough opportunities for people with higher educational levels, it can lead to frustration and unemployment (Peng and Wang, 2024).

## Discussion and conclusions

The results presented indicate that the expansion of compulsory education at all levels of education not only encompasses the school system, but also has effects on the economy and the labor market, which reinforces the inherent complexity of these decisions (Afonso and Aubyn, 2006; Correa, 2011; Maeda et al., 2024; Mesomo and Souza, 2019).

The twenty-two articles analyzed allowed us to identify challenges, implications, benefits, and other impacts on the policies to expand compulsory schooling. In all the studies analyzed, it was observed that the expansion of compulsory schooling increases access to education, providing options to become educated, to increase knowledge and skills, and to have more opportunities in the job market, which coincides with the previously consulted works (Baltagi et al., 2019; Gluz et al., 2018; Grenet, 2013; OECD, 2012; Osorio, 2019).

However, this systematic review of the literature showed that the expansion of compulsory schooling particularly benefits girls and female adolescents (Dursun and Cesur, 2016; Gulesci et al., 2020; New et al.,

2021; Kirdar et al., 2018), rural area inhabitants (Gulesci et al., 2020; Kunt Šimunović, 2024) and the most vulnerable (Akboga, 2016; Bamidele et al., 2024; Elsayed, 2019). Likewise, it was observed that compulsory schooling has indirect effects on health, co-habiting, the decrease in child labor, and the reduction of poverty (Oppong-Nkrumah et al., 2019; Valero-Gil and Valero, 2022; Peng and Wang, 2024).

Nevertheless, the expansion of schooling, although it seeks to promote social equality, has an opportunity cost for students from lower social classes and their families, as the students renounce the potential income from work when remaining at school (Lewis and Nguyen, 2020). This can lead to abandonment or resistance against these policies (Akboga, 2016; Elsayed, 2019; Fischer et al., 2020; Valente, 2019). Likewise, it brings with it a large cost for the different countries, when trying it to make it free or for families, in case that it is not offered as completely free (Bamidele et al., 2024; Correa, 2011; Kirdar et al., 2018; Mesomo and Souza, 2019; Osorio, 2019).

Education systems require a great coordination between the different levels of government, as well as large investments in infrastructures, installations, and resources, initial and permanent training of the professors, and the expansion of contracts of teachers, among other aspects (Brilli and Tonello, 2018; da Silva, 2019; Peng and Wang, 2024). A review and update of the curricula and study plans is also needed. All of this creates a great pressure on the education system of various countries (Bamidele et al., 2024; da Silva, 2019; Erten and Keskin, 2019; Kirdar et al., 2018; Peng and Wang, 2024).

On the other hand, the previous studies highlighted that the expansion of compulsory schooling is not automatically synonymous with quality and equity. It is necessary to adopt measures that address both matters in parallel, as the education systems are plural, unequal, and have deficiencies to tend to diversity and offer alternatives to people to do not desire a long period of schooling without preparing themselves to work in the job market (Correa, 2011; UNESCO, 2019). In addition, it is fundamental to consider that as the schooling time increases, quality gaps may appear within it (da Silva, 2019; Iñigo and Río, 2016; Rauscher, 2015, 2016).

The studies analyzed are mainly centered on economic aspects, such

as the impact on salaries and productivity. Nevertheless, this limited view does not completely address the importance of said policies. It is necessary to include a more humanistic and pedagogical perspective that takes into account aspects such as personal and social development, that lead to a complete analysis of the impact (Harmon, 2017).

In general, and as expected, the articles analyzed present a complex view of the expansion of compulsory education, demonstrating both its benefits and its implications and challenges for any country that plans to analyze the change in basic education policies (Correa, 2011; Mesomo and Souza, 2019; Gluz et al, 2018; Osorio, 2019).

Spain currently has a long and expanding compulsory education system (Besche-Truthe, 2022), just as another 34 countries, so that it is important to decide if expanding basic schooling is opportune, considering all the benefits and inconveniences evidenced in the present review: the possibilities in the local contexts, the investment, the equity, the quality of education, the job market, and the comprehensive development of students, among others. The expansion of the compulsory schooling age in Spain could create an increase in the demand for enrollment and resources, which would require a significant investment in infrastructure and teaching staff. Likewise, the teachers would face the challenge of managing a more heterogeneous student body that is less motivated. This would require the state to provide more resources and opportunities for professional development to prevent a possible increase in the rates of school dropout (OECD, 2012).

As for the limitations of the study, the heterogeneity of the duration of compulsory education in the contexts analyzed stands out, as it made the direct comparison of the results difficult, and the use of artificial intelligence, which, although it broadened the scope of the review, can affect the precision of the selection of articles. Delving into comparative studies that review the impact of the expansion of compulsory schooling in different contexts and that analyze its effects on the equity and quality of education of the most vulnerable groups is recommended. In future systematic reviews, other categories of analysis are recommended, such as the perspective of families, accessibility, or specific stages, such as Early Childhood Education (which is under-studied in the area of schooling expansion), as well as future studies

based on other publications that are not only articles, such as reports and regulations.

All changes seek benefits, but imply different challenges and impacts. Each country must carefully assess these implications to determine if they can face them. This means considering the multiple facets of the process of change and ensuring the successful implementation of the reform.

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