



## Education Staff Indicators for Slovenia

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**Purpose:** The paper deals with identifying available indicators to predict future education staff needs in Slovenia.

**Study design/methodology/approach:** We used SORS's secondary data to analyse and provide an overview of indicators that can be used to forecast the education staff numbers in the future. We focused on the current number of education staff at different levels of education, the number of enrolled in formal education, the number of enrolled students and graduates of educational sciences and teacher education, the number of vacancies for education, and future population projections in certain age groups that education management must consider when planning staffing needs in the future.

**Findings:** Our findings show that the enrolled generation in primary (basic) education is expanding in number, which will further increase the demand for upper secondary and tertiary education in the future 3 to 5 years. The number of education staff has followed this trend and has increased by 5 % in the last 5 years, mainly in the primary education sector. Therefore, the need for education staff will increase in the near future in Slovenia. Furthermore, the demography outlook indicates that several changes must be implemented in the education and labour market sectors.

**Originality/value:** Education staff needs were not yet addressed by the researchers for the case of Slovenia; however, the future trends indicate that it is worth exploring for the purpose of efficient and effective educational planning at the system management level.

### Introduction

The field of education is constantly changing due to several factors: the number of compulsory school children and youth, available education staff, changes in curricula, methods and approaches to education, digitalisation of education, distance education, etc. According to SORS (Statistical Office of the Republic of Slovenia) forecasts, the number and the structure of the population will change in the next 20 years as a result of demographic fluctuations, population ageing and longer life expectancy; however, the teaching profession is less and less attractive to young candidates who may be a cause of concern in the future.

Piedrafita Tremosa and Crosier (2016) have unfolded that »the (future) challenge is about providing the conditions for a high-quality working environment that enable teachers to grow and fulfil themselves, and thus to excel in their profession.« They argue that the intrinsic desire of young to become a teacher will not be enough; thus, they would need competitive salaries for first-time teachers to make the entry into the profession, and once recruited, »the possibility to reach higher pay levels and/or to receive more performance-related pay that can act as an incentive for teachers to improve their pupils' educational outcomes«. (Piedrafita Tremosa and Crosier, 2016). The focus on teachers and their well-being in the workplace will play an important part in the future of education in any country. In Slovenia, the covid-19 pandemic had heavy consequences on teachers, who were forced to change their teaching methods overnight. Many of them encountered high-stress levels as the infrastructure was not ready or was missing (internet connection, lack of computers etc.), and several other factors contributed to deteriorating the position of teachers (media, governments, parents, increased workload etc.) (Thompson, 2021). In response, Government Office for Development and European Cohesion Policy (GODECP, 2020) has prepared a plan for recovery, where digital transformation in the educational sector is planned. Supporting education staff, higher education teachers and other

staff is expected for quality teaching and learning with clean/green and digital tools and technologies (GODECP, 2020, p. 18).

In this paper, we used SORS's secondary data to analyse and provide an overview of indicators that can be used to forecast the education staff numbers in the future. We know that the decisions of individuals in the teaching profession are affected by many other indicators; however, we only focus on some indicators that we find essential from the general perspective and are available in the databases. We focus on the current number of education staff at different levels of education, the number of enrolled in formal education (candidates), the number of enrolled students and graduates of educational sciences and teacher education, the number of vacancies for education, and future population projections in certain age groups that education management must consider when planning staffing needs in the future.

## Education Staff

The exponential growth of information, technologies and the development of the economy require continuous lifelong education and learning (Jug and Miglič, 2020), which is especially true for education staff, who must meet not only the requirements of the economic and social environment but also prepare society for the changes we have witnessed in recent times. For example, the covid-19 pandemic period highlighted the importance and role of the digital transformation of society as a whole and a new interactive approach to teaching and learning across the school vertical, with education staff bringing about change in education. This makes them the catalyst of change, but they alone encountered several setbacks, taking the pressure from media, governments, management and parents (Thompson, 2021). Therefore, it is not surprising that the teaching profession is no longer appealing for young candidates to enter or decide on becoming a future profession.

We all have heard the saying, » Good teachers know how to bring out the best in students«; however, do governments and public authorities know how to bring out the best in teachers and how to support young people to enter the teaching profession in doing the best job possible, and encourage them to stay? (Piedrafita Tremosa and Crosier, 2016). These questions are more and more critical when we look into the future and how the education setting may change.

Current legislation in the field of higher education in Slovenia and thus educational sciences and teacher education programs do not consider the actual needs of education staff. The number of enrolment places for education study programmes is determined based on a proposal of higher education institutions, to which the Government of the Republic of Slovenia issues a consent to the scope of enrolment (Eurydice, 2022). The planning of staffing needs in education can only be partial, as the number of vacancies also depends on the number of retirements and compulsory school generations. However, retirements depend not only on age but also on the length of service, personal circumstances and the employee's will. In addition, the process of amending pension legislation gives employees a degree of uncertainty, and they themselves do not know precisely when they will be able to retire. So far, there has been no major shortage of teachers in Slovenia, as the trend has been reversed in the past, and we have witnessed fewer generations of school-aged children, leading to problems of teacher redundancies because of oversupply (Eurydice, 2022).

Education staff in preschools and schools are educators, assistant educators, teachers, counsellors, librarians and other professionals and managers. Staff in higher education institutions are lecturers, instructors, laboratory assistants and librarians, and in higher education institutions, higher education teachers, researchers and higher education associates (Taštanoska et al., 2020; MESS, 2020).

Preschools, primary and upper secondary schools or higher education institutions have their own autonomy in hiring education staff. The management of schools, preschools and higher education institutions decide on tenders, enrolment of children, pupils, and students, design of the size of departments and classes, systematisation of jobs and distribution of staff according to legislation (Eurydice, 2022). In doing so, they must comply with the laws, ministerial regulations and the will of the founder or financier. These two approve the final number of departments and the proposed systematisation of job positions. For preschools, these are municipalities; for primary schools, the state (for the standard program) and the municipality (for the above-standard program) co-decide, and for upper secondary schools, only the state. Based on the systematisation of jobs and obtained consent, the principal can advertise vacancies for the next school year. (Eurydice, 2022). The director/dean or rector in higher education must approve the newly hired candidates.

In Slovenia, the teaching profession is less attractive than in most other European countries. International research shows that education staff in Slovenia are older than their counterparts in Europe. There can be several reasons, among others due to the high workload of education staff, exhaustion and the increased number of sick leave. Therefore, it is necessary to ensure the attractiveness of educational study programs for future education staff and the teaching profession itself. (Taštanoska et al., 2020, p. 57).

The research of the authors Lesjak and Marjetič (2012) states that in 2012 graduates of educational sciences and teacher education recorded the third-highest unemployment rate (13.0%) of all higher education graduates, with the highest number of vacancies (of all vacancies), the average number of months of searching for the first job was 13.3 months, while the number of first-time students in the 1st year of study exceeded the number of places in the field of educational sciences and teacher education. Interest in the study programs of educational sciences has been high in the past, but less favourable from the employment point of view, which indicates that graduates were looking for alternative employment paths.

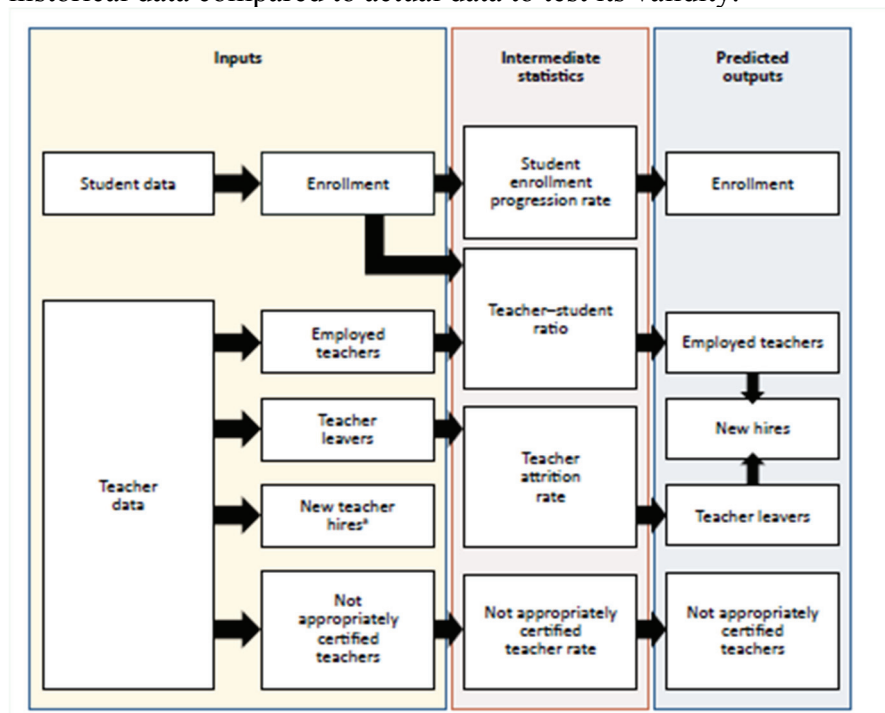
In the United States, for many years after the Great Recession (from 2008 onwards), the problem of staff shortages in education has been tackled, identifying four main factors causing the growing shortage of education staff: declining interest in the teaching profession, the inability of restoring the student-teacher ratio to pre-recession levels when drastic action was needed due to the recession, increased student enrolment, and teacher exhaustion leading to the abandonment of the profession (Sutcher, 2016).

Across Europe, education systems are facing a crisis in the teaching profession. Most countries face a general shortage of teachers, sometimes exacerbated by workload imbalances by subject and geographical area, an ageing teacher population, redundancies and low enrolment rates in pedagogical study programs (European Commission/EACEA/Eurydice, 2021). Almost half of the education staff deal with high-stress levels in the workplace (European Commission/EACEA/Eurydice, 2021). Many education systems face challenges in restoring the attractiveness of the teaching profession, and the same can happen soon in Slovenia.

### ***Modelling the future education staff needs***

When creating a model of future needs for certain staff, it is necessary to define input and output variables. Reichardt provides a simple example of modelling and forecasting staffing needs; Klute, Stewart, and Meyer (2020), who followed the Missouri model and included variables such as the number of teachers employed, laid-off teachers, new teacher hires, and not appropriately certified teachers for each region and number of participants in education (student data) (Reichardt et al., 2020). Predicted output variables are enrolled students, employed

teachers, new hires, teacher leaves, and not appropriately certified teachers. This model uses historical data compared to actual data to test its validity.



**Figure 1: An example of a teacher model predictor**

Source: Reichardt, Klute, Stewart and Meyer, 2020, p. 3.

## Methodology

With the secondary data analysis from the SORS and literature review with descriptive and comparative methods, we could identify general indicators that can be used in the models for predicting education staff in the future. We only focused on the indicators that were available in the database:

- the current number of education staff at different levels of education,
- the number of enrolled in formal education (candidates),
- number of enrolled students and graduates of educational sciences and teacher education,
- number of vacancies for education, and
- future population projections in certain age groups.

## Limitations and future research

In this paper, we do not propose a predictive model but instead, focus on indicators that can be used in such models. First, we state some indicators from the SORS database for input variables in the predictive model.

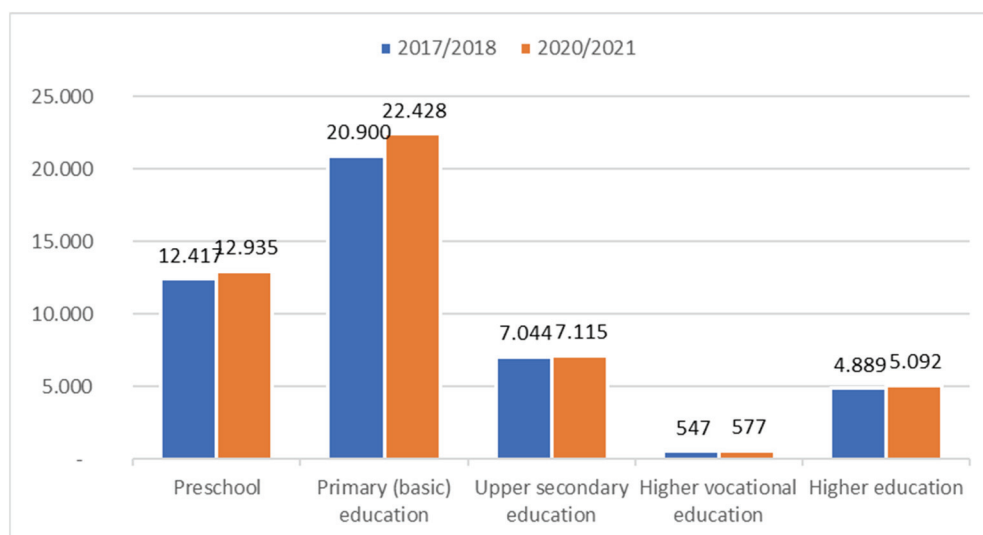
We did not distinguish other segments of educational staff, for, e.g. special education (e.g. slow learners) and adult education. Therefore, other segments of educational staff can be included in future research with separate indicators.

## Results

Results are presented in figures for each identified indicator.

### Number of education staff

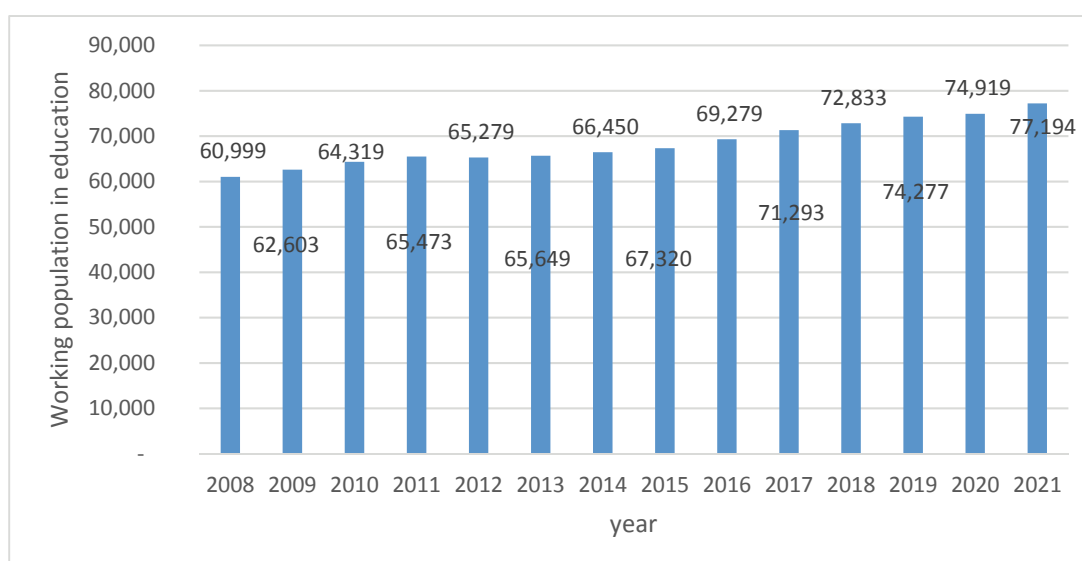
Education is one of Slovenia's most significant social subsystems, as one-fifth of the Slovenian population is regularly involved in formal and preschool education. The sector employed more than 48,000 highly educated professionals in 2020/2021. It grew by 5% since 2017/2018 (A look at the challenges of Slovenian education, 2020, p. 71, SORS, 2022), making it necessary to constantly monitor and organise the needs for education at all levels and levels of education. Most staff are in primary (basic) education (22,400), followed by preschool (12,900), upper secondary education (7,100), higher education (5,100) and higher vocational education (577) (Figure 2). The highest increases in hiring new staff were in primary education (an increase of more than 7%), which is the largest education segment.



**Figure 2: Number of education staff in 2017/2018, 2020/2021**

Source: Taštanoska, Kuščer, and Svetlik, 2020.

If we consider all working population in education (SKD 2008 code P85), not only formal education, we get a 30.000 workforce increase. In 2021, the number of employees in education had already increased significantly to over 77,000 (Figure 3), which also shows a trend of future growth in their needs.

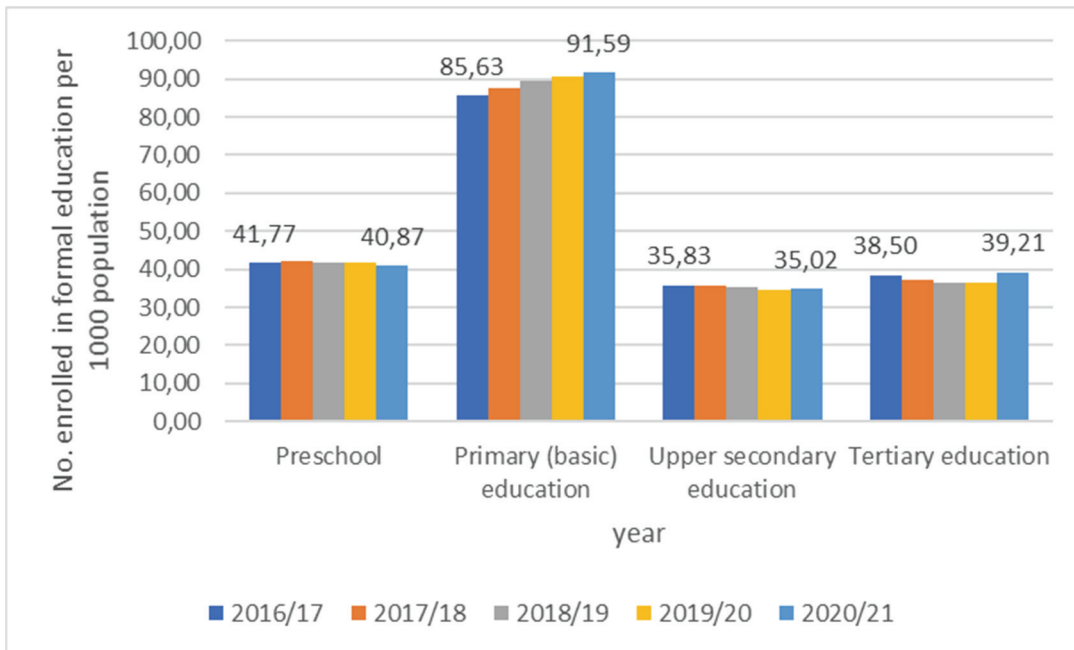


**Figure 3: Number of working populations in education, 2008-2021.**

Source: SORS, 2022.

**Enrolled in formal education**

Along with increases in education staff in primary education, the data shows that in the last 5 years, the generation studying at the primary level increased by almost 7 %. The number of enrolled in formal education (per 1000 population) has started to rise in primary education in particular, which employs the most teaching staff. Still, we can also observe an increase in the numbers of tertiary education in 2020/2021, as more generations are about to enter higher education in the next 3-5 years. This may be due to the poor economic outlook because of the Covid-19 pandemic, and people often spend their time learning new skills.

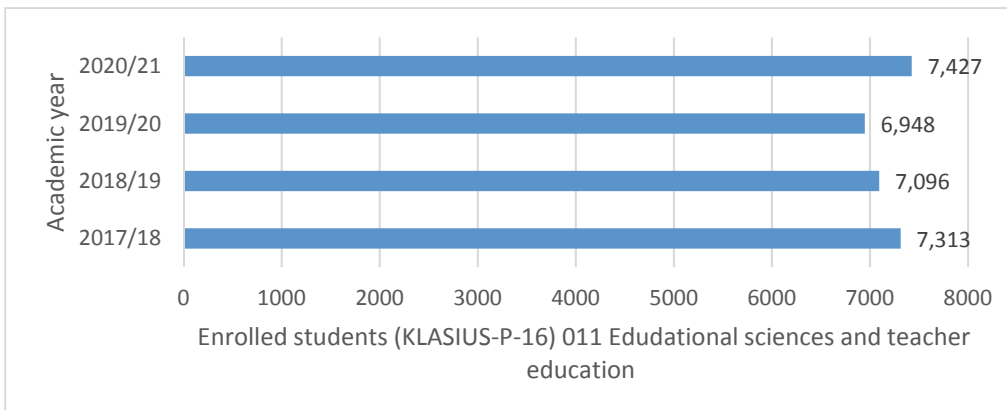


**Figure 4: Enrolled in formal education, 2016/17-2020/21.**

Source SORS, 2022.

**Enrolled students in educational sciences and teacher education**

From 2017/18 to 2019/20, we can observe a slight decrease in the number of students enrolled in educational sciences and teacher education and a sharp increase in 2020/21. This increase may be due to an overall increase in the student population studying at the tertiary level. Interestingly, the share of women students is the highest in the field of education (88%) among all fields of education.



**Figure 5: Enrolled students in educational sciences and teacher education, 2017/18-2020/21.**

Source: SORS, 2022.

### Graduates of educational sciences and teacher education

Graduates that finished educational sciences and teacher education have been in decline since 2016, when there was a peak, doubling the numbers of graduates. This anomaly was due to the ending pre-bologna study programs, and 2016 was the last year for completion before all unfinished studies were about to perish. Therefore, many graduates from the academic undergraduate and master of science programmes finished their studies, thus doubling the number of graduates in 2016.

In 2020 1,730 graduates finished their studies, an almost 8 % decrease since 2015. The trend indicates a slight decrease in the number of graduates (Figure 6). The reasons can be many; among more apparent is a decrease in the number of enrolled students.

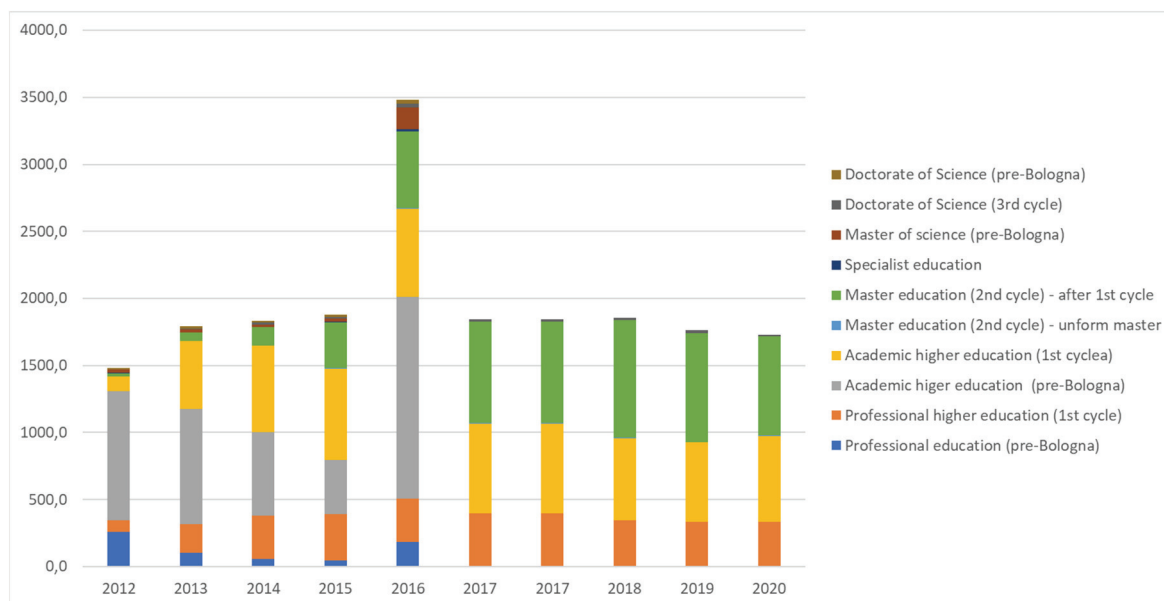


Figure 6: Graduates of educational sciences and teacher education, 2012-2020.

Source: SORS, 2022.

### Vacancies for education

On the other hand, the vacancies for education were in demand since 2015, after the recession had ended and until 2020, when the pandemic hit the labour market and caused another disruption. In 2021 there was a sharp 17 % decline in the education profession vacancies due to uncertainties (Figure 7).

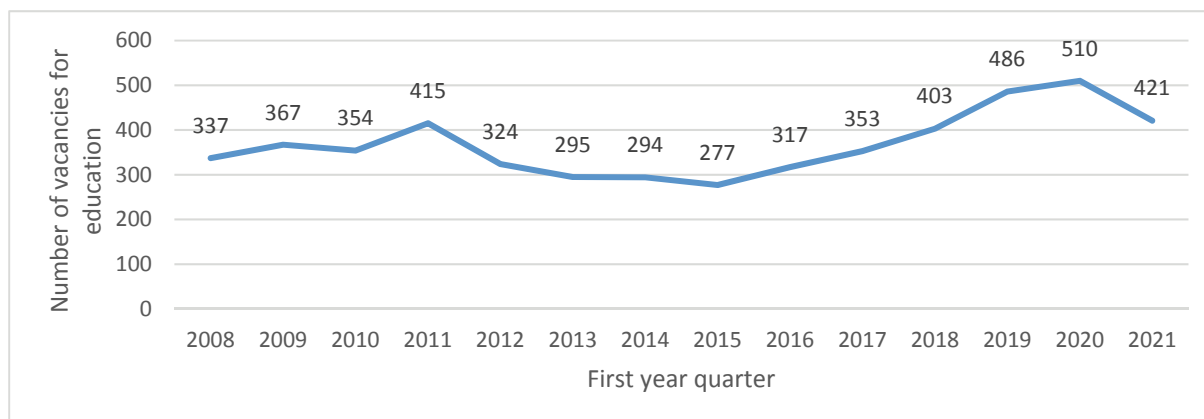


Figure 7: Number of vacancies for education, 2008-2021.

Source: SORS, 2022.

### Population projection

Based on SORS (EUROPOP2019) population projection, the number of compulsory school children (0-14 years old) will increase over the next 5–10-year period and then start to decline (Figure 8). Moreover, Slovenia will soon transition into an ageing society, having less and less population aged 20-64 years and an expansion of the 65+ population, from 18,4 % in 2016 to 24,8% in 2030 and 29,5% in 2060 (IMAD, 2018). This means that the labour market should make significant changes to reshape conditions for all populations in all stages of life (IMAD, 2018).

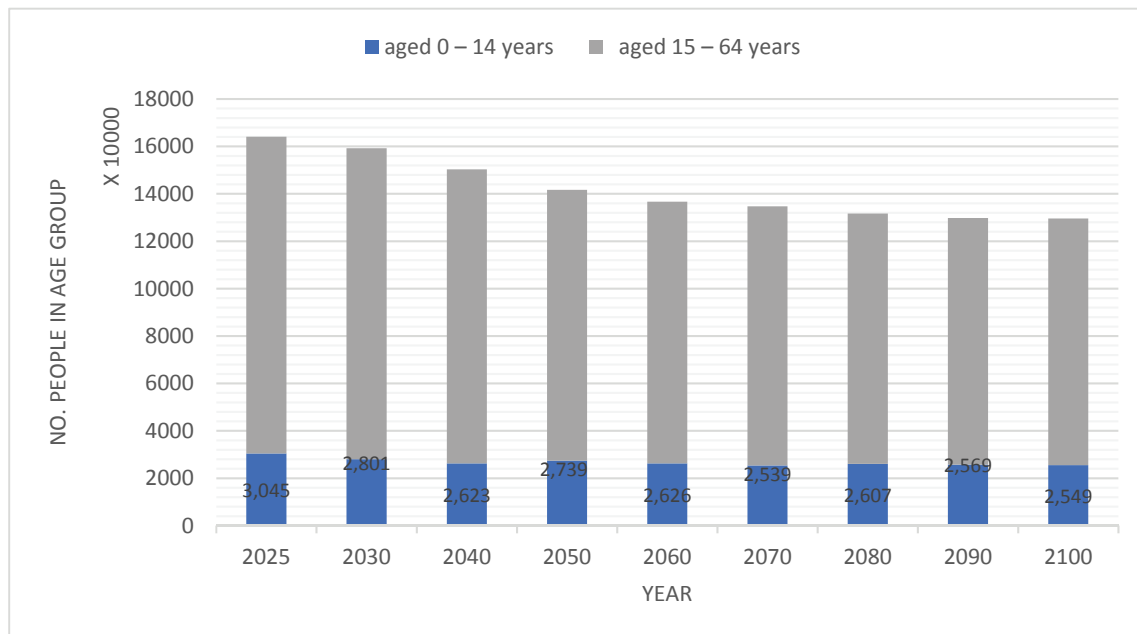


Figure 8: Slovenia's population according to age in selected years between 2025 and 2100.

Source: SORS, 2022.

### Conclusion

In this paper, we have identified indicators that can predict future needs for education staff: the number of education staff according to education level, enrolled in formal education, enrolled students and graduates of educational sciences and teacher education, vacancies for education, population projections. We find that enrolled generations in primary (basic) education are expanding in number, which will further increase the demand for upper secondary and tertiary education in the future 3-5 years. The number of education staff has followed this trend and has increased by 5 % in the last 5 years, the most in the primary education sector. The number of young generations aged 0-14 years will be high for the next 20 years before it starts to decline, while Slovenia will enter the ageing society as soon as 2030. The trend in the numbers of enrolled students of educational sciences and teacher education was in decline until 2019/2020. Also, the number of graduates of educational sciences and teacher education indicates a slight decrease in the past 5 years. Therefore, the need for education staff will increase in the future, while the future demography outlook indicates that several changes must be implemented in the education and labour market sectors.

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