

Enhancing labour market relevance and outcomes of higher education: Country note Slovenia

Employment outcomes for higher education graduates in Slovenia are good, on average, but the system faces challenges aligning labour market relevant supply and demand:

- While access to higher education has improved, participation and completion could be increased, particularly for men, first-generation students and learners with a migrant background.
- Completing a degree can be lengthy due to field of study changes, attrition and student work.
- Current graduate numbers in information and communications technology (ICT) and other sought-after fields are insufficient to meet labour market demand.
- Higher education institutions currently play a limited role in upskilling and reskilling, and graduates rarely return to higher education after entering the labour market.

Analysis undertaken by the OECD project team, within the Labour Market Relevance and Outcomes of Higher Education Partnership Initiative between March 2020 and December 2021, identified four priority areas for development: i) strengthening the capacity of HEIs to collect, analyse and use labour market information; ii) guiding student choice; iii) supporting students to succeed in their studies and future work; iv) upskilling and reskilling in higher education. For each priority area, this country note reviews the system context, highlights challenges faced by institutions, lessons learned from current practice, and presents policy options for improvement. Annex B presents a self-reflection questionnaire for use by higher education institutions to identify strengths and weaknesses of current practice.

This country note was prepared by Andrea-Rosalinde Hofer with contributions from Nora Brüning, Shizuka Kato, Dušan Lesjak (external consultant) and Chloé Michaud (external consultant). Duša Marjetič with colleagues from Higher Education Division in the Slovenian Ministry of Education, Science and Sport provided comments on the report, and the Slovenian National Advisory Group of the project helpfully collaborated in the study. The Labour Market Relevance and Outcomes Partnership Initiative project was advised by Joerg Niehoff, Monika Weymann and Paul Tzimas in the European Commission (DG-EAC).

Aligning higher education with the labour market in Slovenia

Brief overview of higher education in Slovenia

Higher education attainment has increased

In Slovenia, higher education attainment (at International Standard Classification of Education (ISCED) levels 6-8) among the adult population has increased in recent years. The share of the population of 25-34 year-olds with a bachelor's degree or higher rose from 32.2% in 2014 to 38.9% in 2020, nearly reaching the EU 22 average¹ of 39.1% in 2020 (OECD, 2021^[1]).

HEIs vary significantly in size and enrolment in higher education is declining

HEIs in Slovenia vary significantly in size. The number of students in the three public universities ranges from around 1 700 to 64 000 students covering 85% of total enrolment in 2019. The 51 independent higher education institutions (one of which is public) are typically small, with student numbers ranging from less than 100 up to a maximum of 2 700 enrolled students.

Enrolment in higher education has been declining: the proportion of 15-24 year-olds that enrolled in a tertiary education programme, either part-time or full-time, decreased between 2013 and 2018 from 86% to 77%. One of the main reasons is the country's ageing population (OECD, 2021^[1]). In the same period, the number of 15-24 year-olds in the population decreased by 9%, while the number of individuals aged 65 and above rose by 14% (OECD, 2021^[1]). The number of enrolled students has dropped by 23% from around 86 500 in 2013 to 66 000 in 2018. Since 2008, the number of study places available for new entrants to higher education has exceeded the number of applications.

Slovenian higher education offers academic and professional programmes at the bachelor's level

A characteristic of Slovenian higher education is the binary distinction between academic and professional programmes at the bachelor's level, offered at both universities and independent higher education institutions.

Graduates from academic and technical secondary schools can enrol in professional bachelor's programmes. Students from upper secondary technical education need to complete an additional subject in their final exams in order to enter academic bachelor's programmes. Interviewed secondary school career advisors mentioned that interest in attending higher education increases among parents and students over the course of schooling in technical secondary education. The share of graduates from technical upper secondary education enrolling in universities has been steadily increasing, and was at 79.6% in 2020/21 (Ministry of Education, Science and Sport, 2022^[2]).

Growing international orientation of higher education study programmes

The international orientation of higher education study programmes in Slovenia is growing. This has also been reflected in an increased alignment of student support services to the needs of international students.

In the academic year 2020/21, Slovenia achieved its target for 10% of all enrolled students to be international students, with international students making up 11% of the total student population. More than

¹The EU 22 average includes European Union member states that were also members of OECD in 2022, namely Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

half of international students in Slovenia are from the countries of the former Yugoslavia (around 50%), and around one-third is from other EU member states (Statistical Office of the Republic of Slovenia, 2021^[3]).

Doctoral degree programmes, in particular, attract students from abroad. The number of international doctoral students increased more than three-fold from 225 in 2014/15 to 731 in 2020/21. Professional bachelor's programmes have also seen a recent sharp increase in the number of international students, from 902 in 2019/20 to 1 518 in 2020/21 (Statistical Office of the Republic of Slovenia, 2021^[3]).

Developing an attractive upskilling and reskilling offer in higher education is a policy priority

Around one-quarter of jobs in Slovenia are considered at risk of automation, while another quarter of jobs face a risk of significant change to the way they are carried out (Nedelkoska and Quintini, 2018^[4]). The government is seeking to strengthen the role of higher education in upskilling and reskilling, partly funded by EU Resilience and Recovery Facility funds. In the Resolution on the National Higher Education Programme 2030, the government calls upon HEIs to expand their offer with study programmes offering both basic and applied knowledge, and flexible and student-centred teaching and learning.

HEIs in Slovenia have been critical of the lack of financial support. The main policy lever for building organisational capacity is the "development pillar" of the public financing envelope for each accredited HEI. This is awarded every four years as part of performance negotiations and accounts for a maximum of 5% of the total budget awarded for the HEI's educational offer. For the period 2021-24, this stimulus funding could help HEIs to build synergies with research collaborations and third mission activities to introduce or expand their educational offer in upskilling and reskilling.

Key challenges in aligning the supply of and demand for higher education graduates in Slovenia

Employment outcomes for higher education graduates in the Slovenian labour market are good, overall: in 2020, the employment rate of 25-34 year-olds with tertiary education was 89.9%, above the average of EU 22 countries (83.2%). In Slovenia, graduates from master's degrees experience a smaller employment premium compared to their counterparts from bachelor's degrees (86.5% versus 89.9%) than in the EU 22 countries (80.2% versus 86%) (OECD, 2021^[1]). However, considerable variation exists by field of study: in 2018, the employment premium for master's or doctoral graduates compared to bachelor's graduates was lowest in the field of education (-6.6 percentage points), but substantial employment gains were observed in information and communications technology (ICT) (+8.5 percentage points) and the arts and humanities (+13.7 percentage points) in the same year (OECD, 2021^[1]).

There are signs of skills mismatches. Labour force data in Slovenia suggest that an increasing share of graduates have taken non-graduate jobs. The share of graduates employed in occupations that are considered to not require higher education doubled from 7% in 2008 to 16% in 2018, rising to a level slightly lower than the EU average of 22% (European Commission, 2020^[5]). In addition, the wage premium for workers with higher education relative to those with upper secondary education fell by more than 15 percentage points between 2006 and 2016, largely due to differences in occupational wage growth (OECD, 2019^[6]). This was one of the largest decreases among the EU 23 countries², along with Hungary and

² The EU 22 countries include European Union member states that were also members of OECD in 2020, namely Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

Portugal. Moreover, the Ministry of Education, Science and Sport points to the decrease of the average duration of first-time employment after graduation to six months.

The Bank of Slovenia reported a negative net migration rate among higher education degree holders, influenced also by the structure of the Slovenian economy, with its large proportion of sectors with relatively low value-added per employee. The Bank has recommended taking direct action to retain skilled workers who could contribute to increasing productivity and promoting the development of the Slovenian economy (Bank of Slovenia, 2019^[7]).

In Phase 1 of the project, an analysis of the labour market outcomes of higher education graduates in Slovenia was conducted. Five key challenges were identified:

- While access to higher education has widened, participation and completion remain uneven, particularly for men, first-generation students and learners with a migrant background.
- Transition into the labour market with a higher education degree can be lengthy due to field of study changes, high attrition rates, and student work.
- Graduate numbers in ICT and other sought-after fields are insufficient to meet labour market demand.
- Differences in higher education and employers' expectations and understanding of graduate skills affect the labour market outcomes of higher education graduates.
- HEIs currently play a limited role in upskilling and reskilling, and graduates rarely return to higher education after entering the labour market.

These challenges are discussed in the following section.

While access to higher education has widened, participation and completion remain uneven, particularly for men, first-generation students and learners with a migrant background

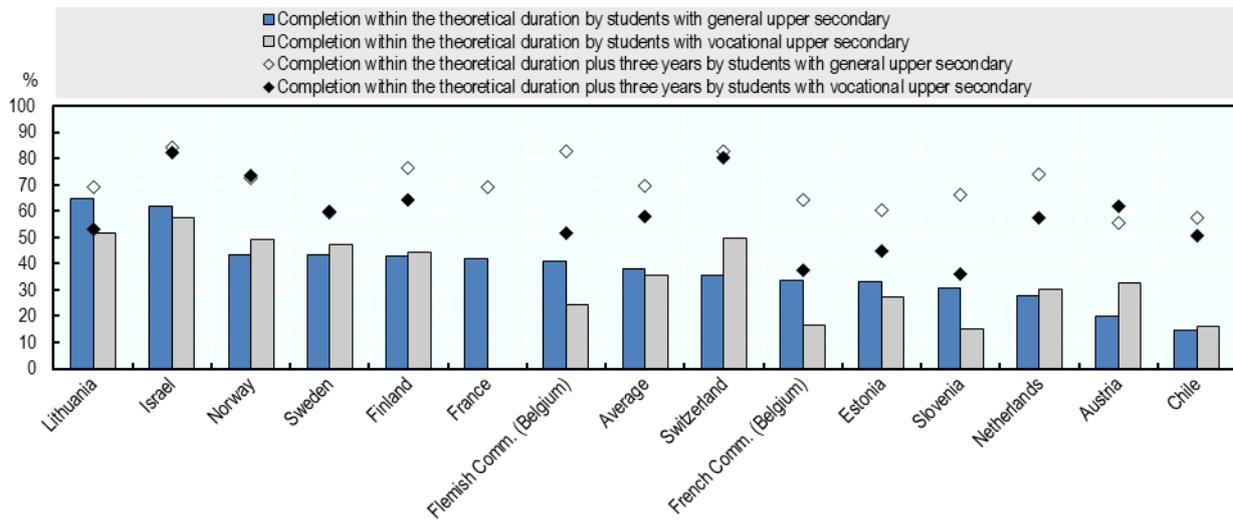
In 2019, the share of men among first-time entrants to higher education in Slovenia was 44% for bachelor's programmes. The gender gap in educational attainment increases for master's programmes, where 37% of new entrants were men. Doctoral studies are more gender balanced on average, where 48% of new entrants were men (OECD, 2021^[11]). Women tend to complete their studies more swiftly. In 2017, 28% of female students had completed their bachelor's degree within the theoretical duration, compared to 18% of male students (OECD, 2021^[11]).

One factor contributing to the low average entry and completion rates of men in bachelor's programmes is aspiration. According to the Ministry of Education, Science and Sport,³ male students tend to have lower academic expectations for themselves, despite similar grades in the Matura, the secondary school leaving exam.

Another explanation stems from the gender divide in upper secondary school. In 2017, 56% of students enrolled in technical (vocational) secondary schools were men, compared to 39% in academic secondary education schools. In Slovenia, students with a technical (vocational) upper secondary school background have lower completion rates in higher education than students with an academic (general) upper secondary school background (Figure 1).

³ The analysis was prepared by Ministry of Education, Science and Sport from national data collected in connection to the OECD's Programme for International Student Assessment (PISA) study.

Figure 1. Completion rate of full-time students who entered a bachelor's or equivalent programme, by students' upper secondary programme orientation (2017)



Note: The data are shown for OECD countries that track completion rates using true cohorts.

Source: OECD (2019_[8]), Education at a Glance 2019: OECD Indicators, OECD Publishing, Paris, <https://dx.doi.org/10.1787/f8d7880d-en>.

First-generation students, whose parents have no higher education degree (ISCED 5-8), are under-represented in Slovenian higher education, at 2.9% of new entrants (European Commission, 2019_[9]). These students tend to complete their studies less frequently compared to students whose parents have a higher level of education: in 2017, around 19% of full-time bachelor's students whose parents obtained a maximum of lower secondary education finished their degree within the theoretical duration, compared to 27% of students with at least one parent who has a higher education degree. The completion rates diverge further by the theoretical duration plus three years. While 49% of students whose parents obtained a maximum of lower secondary education completed their degree, this share increases to 61% for students with at least one parent who has a higher education degree (OECD, 2019_[8]).

Learners with a migrant background are also under-represented in Slovenian higher education. In 2017, the higher education attainment rate of young adults (25-34 year-olds) born in the country was, at 57%, more than double the rate of foreign-born individuals who arrived in Slovenia by the age of 15 (25%) (OECD, 2021_[1]). This is in part due to progression in higher education: completion rates of full-time bachelor's students within the theoretical duration are lower for first- and second-generation immigrants (19% and 16%, respectively) than for students born in Slovenia (24%). Similarly, by the theoretical duration plus three years, 44% of first-generation immigrant and 43% of second-generation immigrant full-time bachelor's students completed their degree, compared to 54% of students born in Slovenia (OECD, 2019_[8]).

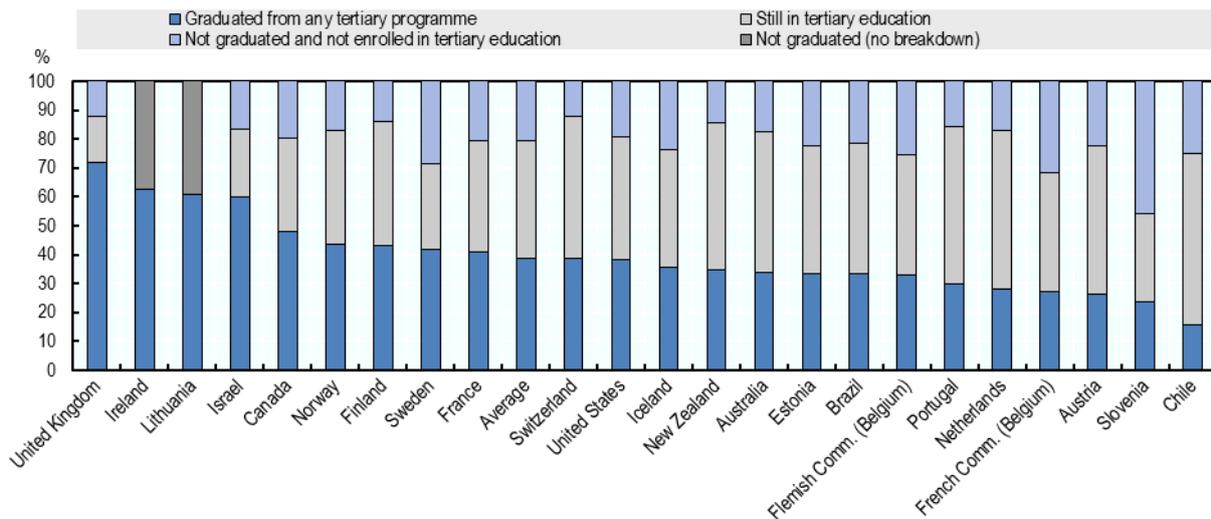
Transition into the labour market with a higher education degree can be lengthy due to field of study changes, high attrition rates and student work

The transition into the labour market with a higher education degree can be lengthy. In Slovenia, full-time bachelor's programmes are designed to be completed in either three or four years, but only 24% of students actually complete their programme within that time (the "theoretical duration"). This is the lowest completion rate among European jurisdictions with available true cohort data (Figure 2).

Slovenia's completion rate for full-time bachelor's students increases to 53% by the theoretical duration plus three years, although remains the lowest completion rate among European jurisdictions (OECD, 2021_[11]).

Higher education students in Slovenia are permitted to extend their studies for one year and can change their field of study once without losing their student status. This regulation may account for some of the long study durations. According to the Ministry of Education, Science and Sport, around 10% of bachelor's students repeat their first year of studies.

Figure 2. Status of full-time bachelor's students within the theoretical duration (2017)



Note: Data from Ireland, Canada, France and the United States are from earlier years.

Source: OECD (2021_[11]), Educational attainment and labour-force status: Trends in employment, unemployment and inactivity rates, by educational attainment and age group, OECD.Stat (database), <http://dotstat.oecd.org/Index.aspx?QueryId=113637> (accessed on 20 April 2022).

Another factor contributing to long study durations may be the high share of students working while studying. So-called student work represents about 3% of the total labour market in Slovenia. Although student work is typically well organised and may facilitate students' labour market entry upon graduation, it is usually not integrated into study programmes and can therefore increase study times. This is particularly problematic when the work is unrelated to the student's study programme or career aspirations. The study relevance of student work varies largely by field of study. A recent survey of student work among students at the University of Ljubljana, the largest HEI in the country, showed that study relevance is highest for ICT (73%) and mechanical engineering (70%), and much lower for social sciences (42%) and arts (20%) (E-študentski servis, 2020_[10]).

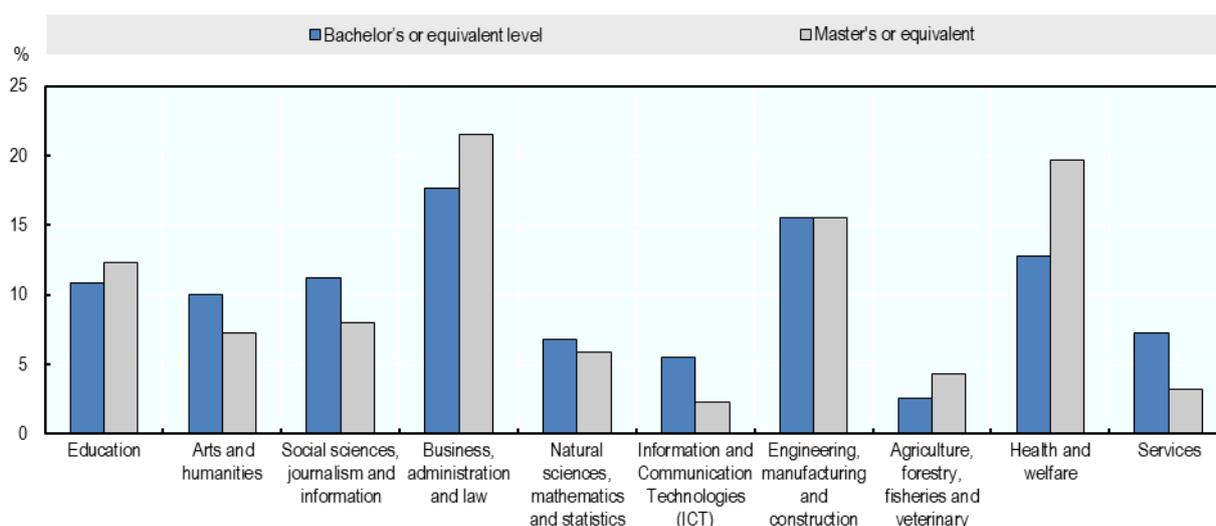
Graduate numbers in ICT and other sought-after fields are insufficient to meet labour market demand

Slovenian employers report difficulty in finding sufficient numbers of graduates from certain fields of study, mainly ICT, health, and engineering (CEDEFOP, 2016_[11]). This is reflected in high employment rates of recent higher education graduates in these fields. Among graduates aged 25 to 34 with master's or doctoral degrees, those from ICT fields of study had the highest employment rate (99%) in 2018, followed by health (95%) and engineering (both 93%). In comparison, the average employment rate for master's or doctoral degrees across all fields of study was 86% (OECD, 2021_[11]).

Attracting more students to ICT, health, and engineering has been an important policy objective for some time. Current enrolment patterns show that programmes in business, administration and law remain the preferred study options with 18% of new entrants to bachelor’s degrees choosing these fields in 2018 and 22% at master’s levels (Figure 3).

In terms of sought-after fields, the take-up of bachelor’s studies in engineering, manufacturing and construction programmes is also relatively high: 17% of new entrants started in one of these fields in 2018. Similarly, the share of new entrants enrolling in health and welfare programmes was 12%. On the other hand, new entrants to ICT programmes made up around 6% of all new entrants at the bachelor’s level and less than 3% at the master’s level.

Figure 3. New entrants by field of study, 2018



Source: OECD (2021^[1]), Educational attainment and labour-force status: Trends in employment, unemployment and inactivity rates, by educational attainment and age group, OECD.Stat (database), <http://dotstat.oecd.org/Index.aspx?QueryId=113637> (accessed on 20 April 2022).

Besides the relatively small share of students entering ICT study programmes, strong labour market demand for ICT skills contributes to high rates of attrition. Many talented ICT students enter the labour market before graduation, as their immediate labour market prospects are very lucrative. Interviewees referred to these drop-outs as “job-outs”, indicating that students leave their studies prematurely to start working.

In-demand ICT skills tend to become outdated very quickly, however, only few “job-outs” return to their studies at a later point, which has led interviewees to suggest that the current higher education system needs more pathways back into higher education and greater flexibility.

Differences in higher education and employers’ expectations and understanding of graduate skills outcomes affect the labour market outcomes of higher education graduates

A broad stakeholder consultation undertaken as part of a OECD project in 2016 indicated that employers do not only look for subject-specific technical knowledge and skills when hiring, but also for a range of transversal skills. The latter include digital skills, leadership, inter-professional teamwork, resourcefulness, system thinking, a capacity for learning at work and adapting to changing demands, and entrepreneurial

and innovation skills. The consultation suggested an overall dissatisfaction with the extent to which higher education graduates possess these skills and are ready to apply them at work (OECD, 2017^[12]).

Furthermore, stakeholders interviewed for this project highlighted that the growing range of programmes makes it difficult for employers to keep up to date with developments and stay informed about the knowledge and skills mix of different programmes and levels of degrees. In addition, employers and HEIs might use different language to describe sought-after transversal skills and the proficiency levels expected to be reached in higher education.

HEIs currently play a limited role in upskilling and reskilling, and graduates rarely return to higher education after entering the labour market

In 2022, the Slovenian government developed a new digitalisation strategy, which sets a target for the country to be among the top five most digitalised nations in the European Union. Meeting this target will require an acceleration of digital transformation in the economy by introducing advanced technologies and new business models, catalysing the need for more graduates with advanced digital skills, and a greater upskilling and reskilling offer in higher education.

HEIs in Slovenia currently play a limited role in the upskilling and reskilling of the workforce. Stakeholders commented that both learner demand and the labour market value of non-degree programmes are low, contributing to the limited further education offer at HEIs. Higher education graduates rarely return to higher education for further education outside of traditional degree programmes once they have entered the labour market, and few older students enter a traditional degree programme. In 2018, the share of new entrants aged 30 or over to bachelor's or equivalent programmes was 5%. This compares to an average of 9% across OECD countries. The difference is even more marked for entrants to master's or equivalent programmes. In Slovenia, only 11% of entrants were aged 30 or over, whereas the average in OECD countries was 25% (OECD, 2021^[11]).

In Slovenia, existing financial instruments to stimulate adult learning include grants and tax incentives for companies, as well as scholarships, training leave and tax reductions for individuals (CEDEFOP, 2016^[11]). These will need updating in light of the government's priority to strengthen the role of higher education in lifelong learning, as these instruments are mostly tailored towards company-specific training and younger learners, typically below the age of 30.

Priority areas for policy and practice development to enhance the labour market relevance and outcomes of higher education

The results of the analysis of labour market outcomes informed the review of institutional practices in Phase 2 of the project. From this, four priority areas for policy and practice development were identified with the potential to enhance the labour market relevance and outcomes of higher education:

1. strengthening the capacity of HEIs to collect, analyse and use labour market information;
2. guiding student choice;
3. supporting students to succeed in higher education and in the labour market;
4. strengthening the role of higher education in the upskilling and reskilling of workers.

For each priority area, the higher education system context is briefly analysed, highlighting challenges that HEIs in Slovenia face. Next, a discussion of what can be learned from current institutional practice and what HEIs can do to upscale current practice leads to the presentation of a set of policy options for public authorities to support the alignment between higher education and the labour market. The policy options were developed following initial analysis carried out by the OECD review team between January and December 2020 on labour market outcomes experienced by graduates and employers and potential

drivers and barriers affecting these outcomes. Further evidence was collected during peer-learning activities, organised between January and December 2021, both within the country and across the four countries, involving HEIs and higher education policy stakeholders.

Summary of key findings and policy options

Table 1. Summary of key findings and policy options

Priority areas for policy and practice development	Higher education system context and challenges for HEIs	What can be learned from current institutional practices?	Policy options
Institutional practices for monitoring developments in the labour market	<ul style="list-style-type: none"> HEIs are starting to have more access to publicly available information on the labour market outcomes of their graduates but inter-operability of labour market and higher education datasets remains a challenge Labour market information collected by HEIs has served institution-specific needs, but lacks comparability HEIs prepare annual self-evaluation reports to monitor the quality and relevance of the educational offer; this can be burdensome for HEIs with a large number of programmes HEIs need further capacity to effectively engage employers to contribute to study programme development 	<ul style="list-style-type: none"> Some HEIs use the regular process of reviewing study programmes strategically to increase interdisciplinarity in the educational offer Some HEIs have begun to build a system of electronic records of study programme curricula with the potential to improve skills signalling, permitting employers to see what skills graduates have acquired HEIs use part-time students, who are working, as a source of information to better understand the needs and expectations of prospective learners seeking upskilling and reskilling in higher education 	<ul style="list-style-type: none"> Further develop the publicly available labour market information for HEIs with a single portal of interoperable datasets
Guiding student choice	<ul style="list-style-type: none"> Prospective students lack information on study environments, academic requirements and labour market outcomes of programmes, resulting in sub-optimal choices The typical description of study programmes does not include occupational prospects, and HEIs make little use of labour market information in their study guidance Subject teachers in secondary schools play a limited role in early career orientation towards STEM study choices Study guidance offered by HEIs is focused on first-degree programmes and does not meet the information needs of learners seeking upskilling and reskilling 	<ul style="list-style-type: none"> Several HEIs and faculties organise activities with schools to demonstrate the societal relevance of study programmes with promising results in raising the interest of prospective students in STEM programmes HEIs have successfully focused on making students aware of available academic support, increasing the attractiveness of study programmes Some HEIs have introduced study guidance for electives and specialisations, assisting students making study decisions 	<ul style="list-style-type: none"> Further develop study guidance with a single, easily accessible and user-friendly web portal with study and labour market information for prospective students

Priority areas for policy and practice development	Higher education system context and challenges for HEIs	What can be learned from current institutional practices?	Policy options
Supporting students to succeed in their studies and future jobs	<ul style="list-style-type: none"> • Few higher education programmes include internships • Student work allows students to gain work experience while studying, but may also lower student engagement in studies • HEIs lack systematic data to identify students at risk of attrition • Students lack information on the potential adverse impact of the number of hours worked per week on study engagement 	<ul style="list-style-type: none"> • HEIs have introduced project-based learning to allow a greater number of students to gain practical experience in the “world of work” as part of their study programme • The involvement of students in collaborative research projects and practice-based learning opportunities has supported transversal skills development across all levels of study • Curriculum designed to have practice-based elements in the beginning of a programme has the potential to increase study engagement • Tutoring to lower the risk of attrition and building on individual contacts with students and companies to retain students that combine study and work have shown success • Frequent touchpoints to help students with their dissertations have shown success in mitigating attrition • Switching to online services has resulted in increased student demand for career guidance 	<ul style="list-style-type: none"> • Support HEIs to develop a student monitoring system to design inclusive student support services • Support HEIs in their efforts to expand new and more flexible formats of teaching and learning
Strengthening the role of higher education in the provision of upskilling and reskilling	<ul style="list-style-type: none"> • Some formats of upskilling and reskilling exist in higher education, and independent higher education institutions are currently most active in their provision • The part-time status lacks flexibility to make it attractive for learners who combine studies with work • Teaching methods and learning environments are not fully adapted to the needs of learners seeking upskilling and reskilling 	<ul style="list-style-type: none"> • Some HEIs have built strategic co-operation with companies to better understand upskilling and reskilling needs • Student and alumni HEI loyalties provide a basis for raising interest in upskilling and reskilling 	<p>Support HEIs organisational capacity for upskilling and reskilling in three ways:</p> <ul style="list-style-type: none"> • Addressing the information challenge • Designing an attractive educational offer and inclusive student support • Further develop teaching adapted to the needs of mature learners

1. Strengthening the capacity of HEIs to collect, analyse and use labour market information

Higher education system context and challenges for HEIs

HEIs are starting to have more access to publicly available information on the labour market outcomes of their graduates but inter-operability of labour market and higher education datasets remains a challenge

HEIs need labour market information to develop and revise study programmes in response to evolving labour market needs. This is challenging for HEIs in Slovenia, as publicly available information on the labour market outcomes of their graduates is limited. This started to change recently as the result of a project launched by the Ministry of Education, Science and Sport to upgrade the Higher Education Data System, eVŠ⁴, with the aim of helping HEIs better understand labour market demand (Box 1). Since 2021, HEIs have access to the labour market status of their graduates at eight different milestones following completion of their studies: 0, 3, 6, 12, 18, 24, 36 and 60 months. These data will also be used for the introduction of an “employability indicator”, which is expected to make the allocation of 5% of the total public funding per HEI dependent on graduates’ labour market outcomes. The implementation details of the indicator, which is expected to be introduced in 2023, are still being discussed.

Public policy efforts also seek to develop a national skills forecasting mechanism. To this end, The Ministry of Labour, Family, Social Affairs and Equal Opportunities and the Public Employment Service of Slovenia launched the Skills Forecasting Platform in 2021 (Box 1).

Box 1. Publicly available data on the labour market outcomes of higher education graduates in Slovenia

Upgrading the Higher Education Data System with labour market outcome data

In 2018, the Slovenian Ministry of Education, Science and Sport started to upgrade the Higher Education Data System (eVŠ) with labour market outcome data through a standardised process of collecting and linking the administrative data from several national databases.

The target population includes all graduates from study programmes in higher education accredited by the Slovenian Quality Assurance Agency for Higher Education from the year 2005 onwards. The data includes transition from upper secondary to higher education, and enrolment and progression in higher education at ISCED levels 6, 7 and 8, data from the Register of Insured Persons kept by the Pension and Disability Insurance Institute of Slovenia, data from the Register of Unemployed Persons kept by the Employment Service of Slovenia, data from the Register of Recipients of Student Scholarships kept by the Ministry of Labour, Family, Social Affairs and Equal Opportunities, and data from the Central Register of Employees in the Field of Education kept by the Ministry of Education, Science and Sport.

Skills Forecasting Platform

In 2021, the Ministry of Labour, Family, Social Affairs and Equal Opportunities of Slovenia and the Public Employment Service of Slovenia began development of the Skills Forecasting Platform.

⁴ eVŠ stands for the records and analytical information system for higher education in the Republic of Slovenia (*Evidenčni in analitski informacijski sistem visokega šolstva v Republiki Sloveniji - eVŠ*).

Designed as an integrated system, it will provide an online job search interface, matching support tools and relevant information on real-time data and forecasts on labour market needs in terms of occupations and competencies in the short-term horizon of up to one year, in the medium-term (3-5 years) and long-term (10 years). The platform will also offer information on career guidance services and available education and training offers.

While more information on the labour market outcomes of higher education graduates becomes available, the inter-operability of national datasets remains challenging. The aim is to develop a solution whereby data will be anonymised and paired at the national level and then fed into a fully automatized module, which will give HEIs access to programme-level data. This is expected to raise the planning capacity of HEIs in designing and updating study programmes based on labour market needs, and the provision of study and career guidance by HEIs.

Labour market information collected by HEIs has served institution-specific needs, but lacks comparability

Many HEIs in Slovenia collect their own information on the labour market outcomes of their graduates and employer skills needs using various means and methodologies. This takes place most commonly through regular contact with employers, often organised directly by faculties/departments, programme co-ordinators or individual academic staff. Across the sector, HEIs conduct employer surveys, also in collaboration with business representative organisations. Graduate surveys are also a common method of collecting information on the transition of graduates into the labour market, time between graduation and first employment, type of employment, and the perceived relevance of the study programme.

Guest lecturers, teaching staff from non-academic environments, are another source of information to identify labour market needs. During the COVID-19 pandemic, guest lecturers were involved in online formats. Some of this practice may continue, allowing for the involvement of guest lecturers from abroad or elsewhere in the country.

The analysis of case studies and interviews showed that while HEIs use their own labour market data for curricula update and the design of new programmes, current approaches are often small-scale, uncoordinated and prevent comparability of data. There are no guidelines on questionnaire development or the timing and frequency of these surveys. The timing of these surveys varies from shortly before graduation (before degrees are awarded), six months after graduation, to one year (most common), two years and three years after graduation. Moreover, labour market insights gained from consultations of employers are not systematically shared within the HEI.

HEIs prepare annual self-evaluation reports to monitor the quality and relevance of the educational offer; this can be burdensome for HEIs with a large number of programmes

The Slovenian National Quality Assurance Agency (SQAA) requires all HEIs to prepare publicly available annual self-evaluation reports. In 2016, changes were made to the national accreditation framework, with responsibility for the institutional evaluation process being delegated to HEIs. The process of study programme re-accreditation is no longer required (study programmes are only accredited once, with this accreditation lasting for an unlimited duration). The institutional re-accreditation process includes an external evaluation of the institutional self-evaluation system and an external evaluation of the self-evaluation of study programmes, based on a sample of programmes selected by the agency. Externally set quality and relevance requirements for professional bachelor's programmes include standards on alignment with labour market needs, while the focus for all other higher education programmes is on societal relevance.

The interviews suggest that monitoring the relevance of the educational offer in light of evolving labour market needs can be challenging for HEIs with a high number of programmes, particularly in the absence of central-level structures responsible for this, and when the collection, analysis and use of labour market information is carried out in a largely non-automated way, and at the faculty level.

In the survey conducted for this project on current institutional practices and medium-term priorities, 75% of the surveyed HEIs across the sector reported to have institution-wide practices in place to monitor and ensure the relevance of the educational offer to evolving labour market needs (Note: Size of HEI in terms of number of enrolled students in the academic year 2020/21, as published on the Higher Education Data System (eVŠ)).

Source: LMRO Call for Practices: "Survey of Institutional LMRO Priorities". Survey period: April-June 2021.

The survey covered eight areas of current practices and priorities of HEIs in enhancing the labour market relevance of their educational offer (**LMRO practices**):

- monitoring and ensuring the continued relevance of the educational offer (**monitoring relevance**);
- adapting curricula, the mix and flexibility of programmes, and qualifications to respond to evolving labour market demands (**adapting curricula**);
- using teaching practices, learning environments and assessment methods to equip students with skills valued by employers, including transversal skills (**teaching and learning**);
- supporting teaching staff to keep up to date with innovation and societal challenges linked to their discipline, and to reflect this in their teaching (**supporting teaching staff**);
- building a common understanding of graduate skills through collaboration with employers and creating trusted mechanisms for students to signal their skills (**common understanding of graduate skills**);
- using labour market information to guide study choices (enrolling in and/or switching study programmes, and/or choosing specialisations) and career decisions (**labour market information**);
- supporting students to enrol and succeed in study programmes with high labour demand (**supporting students**);
- meeting the needs of learners who seek up/reskilling through adapting curricula, the mix and flexibility of programmes, and qualifications (**upskilling and reskilling offer**).

Figure 5, Annex A). Institution-wide practices were more common among the surveyed private universities (of which all reported to have institution-wide practices in place) (Figure 6, Annex A) and in HEIs with less than one-third of their total number of students enrolled in professional bachelor's programmes (88%) (Figure 7, Annex A).

For half of the surveyed HEIs (50%) monitoring labour market developments is a medium-term institutional development priority for the next 2-3 years (Figure 8, Annex A), particularly among smaller institutions, with less than 400 enrolled students, and HEIs with more than one-third of their students enrolled in professional bachelor's programmes (Figure 9, Annex A).

Study programmes in independent higher education institutions are closely connected to employer needs and, as the interviewed policy stakeholders suggested, tend to respond quickly to developments in the labour market. The results from the institutional survey suggest that independent higher education institutions are less active than the public and private universities in the collection of information on employer skills demand. This could be down to the employer demand-oriented nature of the educational offer at independent higher education institutions, which does not require the institutions to identify emerging skills needs beyond the part of the economy they serve.

HEIs need further capacity to effectively engage employers to contribute to study programme development

The analysis of case studies and interviews showed that organisational capacity is crucial to invite employers and industry partners to contribute to study programme development, and that quality assurance mechanisms are most effective when connected in a loop, joining up monitoring, reporting and capacity building. An example is the implementation of a meta-analysis of self-evaluation reports to enhance the coherence of planning, implementing and monitoring quality improvements across the HEI.

In addition to central-level quality assurance units, career centres have taken on a role in this. From 2015 to 2020, the Ministry of Education, Science and Sport carried out the sector-wide initiative "Upgrade of Career Centres", which supported pilot initiatives and stimulated the creation of a network of career centres. The aim was to establish a self-regulated and financially sustainable model of career guidance and encourage the further integration of career centres into wider HEI development strategy. A greater institutionalisation of employer relationships might be particularly important given the national policy priority to strengthen the role of higher education in the upskilling and reskilling of the workforce.

What can be learned from current institutional practices?

Some HEIs use the regular process of reviewing study programmes strategically to increase interdisciplinarity in the educational offer

Stakeholder interviews highlighted that some HEIs use the regular process of reviewing study programmes strategically to increase interdisciplinarity in the educational offer. For example, in the public universities, where faculties have a high degree of autonomy, there has been increased collaboration in developing interdisciplinary study programmes giving academic staff a leading role in the identification of niches for interdisciplinary programmes. One of the public universities visited for this project, created a working group with a mix of administrative staff and academics (professorial staff and researchers) to define broad areas for an interdisciplinary educational offer, building on research areas and in anticipation of the future needs of the economy.

These processes have also resulted in increased awareness of the role of "quality assurance as a contributor to academic excellence: staff is encouraged and expected to pursue excellence in teaching and research", as highlighted in one of the practices submitted by a public university.

The analysis of case studies and interviews showed that the involvement of academic staff in the design and delivery of interdisciplinary study programmes needs directing and support by HEI leadership as the teaching hours of professorial staff in public HEIs are set by law in Slovenia. HEI leadership seeks to distil learnings from faculties/departments with a longer tradition in further education. At public universities, the faculties of education, medicine, healthcare and others that offer study programmes resulting in regulated/licensed occupations have developed long-standing educational offers in upskilling. The review of processes in these faculties is considered to provide valuable insights on how to organise employer relations to strategically identify emerging skills needs, and to design incentives to engage teaching staff.

While employers may call for more interdisciplinary skills, interdisciplinary study programmes may face difficulties in gaining labour market recognition. This requires careful assessment of graduates' labour market prospects and outcomes. It was mentioned in the interviews that the strategic involvement of leading industry partners, including foreign companies in leading positions in related global value chains, can help to identify demand recognition challenges for interdisciplinary programmes. It was also mentioned that the introduction of micro-credentials, that is, study courses with a certificate that are offered as part of a study programme or separately, is a promising option in introducing and gradually expanding a more interdisciplinary educational offer.

Some HEIs have begun to build a system of electronic records of study programme curricula with the potential to improve skills signalling, permitting employers to see what skills graduates have acquired

In 2020, the SQAA started a pilot initiative with the University of Ljubljana to link up the electronic records of study programme curricula with their system (University of Ljubljana, 2020^[13]). This is an important milestone which is expected to be rolled out throughout the country's higher education system as, currently, not all study programme curricula exist in a machine-learning ready format. The electronic records of study programme curricula contain data on the obligatory components of the study programmes and data kept by HEIs pursuant to the country's legislation.

From an accreditation perspective, this allows for traceability of the development of each individual study programme and its components, and supports the process of modifying study programmes. In addition, it builds the basis for a national inventory of educational offers targeted at learners seeking upskilling and reskilling.

A system of electronic records of study programme curricula can also improve skills signalling as it allows employers to get a better understanding of the knowledge and skills content of programmes. This is particularly relevant in terms of the growing demand for advanced digital skills. Firms also hire non-ICT graduates with advanced digital skills to fill ICT job vacancies. In 2018, a study of job posting data in four US states showed that more than one-third of job postings in ICT occupations included fields of study other than ICT as job requirements, including business, management, marketing and related support services, and engineering (Brüning and Mangeol, 2020^[14]). In 2019, graduates in these two fields constituted over one-third of all Slovenian higher education graduates; the pool of potential job applicants for ICT jobs could be substantially broadened if these graduates were also equipped with advanced ICT skills.

HEIs use part-time students, who are working, as a source of information to better understand the needs and expectations of prospective learners seeking upskilling and reskilling in higher education

The analysis of case studies and stakeholder interviews showed that part-time students who combine study and work are an important source of information on emerging needs for upskilling and reskilling.

The share of part-time students by level of study varies between the universities and the independent higher education institutions. In the universities, part-time students are concentrated in doctoral studies; on average 82% of doctoral students over the period 2010/11 to 2020/21 were part-time students. In the independent higher education institutions, the largest share of part-time students was in professional first-cycle programmes (70%), followed by second-cycle and third-cycle programmes (both at 50%) (Statistical Office of the Republic of Slovenia, 2021^[3]). Overall, 20% of part-time students were over 30 years-old.

Policy options to support the alignment between higher education and the labour market

Further develop the publicly available labour market information for HEIs with a single portal of interoperable datasets

For HEIs to make greater use of labour market information in guiding students in their choices, including switching study programmes and choosing specialisations, they need publicly available and comparable information, ideally in the form of a single portal of interoperable datasets.

An example of how public policy can support HEIs in this respect is Atrack, a government-funded initiative in Austria implemented by the National Statistics Agency (OECD, forthcoming^[15]). Data cubes anonymously combine university data with social security and unemployment data and this facilitates the evaluation of a graduate's labour market status, time between graduation and first employment, gross

monthly income and many other labour market related indicators. Universities can select a number of points in time before and after graduation, up until five years after graduation. It is also possible to compare individual university results to an aggregate of all public universities in Austria. The most important indicators are presented in annually published factsheets by study programme and field of study. Public universities in Austria use the data to plan and update their educational offer, and to guide the choices of prospective students.

An example of how public policy can address the problem of inter-operability of different datasets is “LMI for All” (LMRO Partnership Initiative, 2020^[16]), implemented by the Institute for Employment Research at the University of Warwick and funded by the UK Department for Education. LMI for All is an open data project which supports the use and re-use of government data sets. The data are made freely available via an Application Programming Interface (API) for use by developers (LMI for All, 2020^[17]).

It will be important to support HEIs in Slovenia to build organisational capacity in using labour market information for programme development and study guidance. To this end, the SQAA could develop and promote guidelines on how HEIs can use labour market information to revise existing study programmes and develop new ones, including in relation to their educational offer for lifelong learning. This could be either in the form of binding guidelines and standards or support and guidance materials developed and promoted by the SQAA.

2. Guiding student choice

Higher education system context and challenges for HEIs

Prospective students lack information on study environments, academic requirements and labour market outcomes of programmes, resulting in sub-optimal choices

Prospective students in Slovenia lack information on study environments, academic requirements and labour market outcomes of programmes to support them in their decision making process. This may result in sub-optimal choices. Around 10% of students in bachelor’s programmes change study programmes (Ministry of Education, Science and Sport, 2019^[18]).

The largest public event to provide prospective students and their families with information on study programmes at Slovenian HEIs is the annually organised public study fair, “Informativa”. It is well attended, but as the interviewed students pointed out, the event is too large to provide specific information on what studying a particular programme means and what differences there may be across the different HEIs.

Online information about study programmes directs users to the career centres of public universities, which then direct prospective students to faculties. Prospective students interested in studying at one of the independent higher education institutions need to have already chosen a particular programme and institution as the information online would not direct them there.

The typical description of study programmes does not include occupational prospects, and HEIs make little use of labour market information in their study guidance

Prospective students need labour market information that is sufficiently specific and related to a study programme. This includes information on existing and emerging occupational profiles, for example a catalogue of emerging occupations, typical employment conditions and information on employment prospects and earnings. The description of study programmes, as required by the SQAA, does not include this information.

Interviewed higher education students agreed that they would have liked to have more information on labour market prospects to guide them in their study choices, as finding out about labour market prospects when already enrolled in a study programme is too late.

Currently, HEIs make little use of labour market information in guiding student choice. While most (75%) of the surveyed HEIs reported to have institution-wide practices in place to monitor and ensure the labour market relevance of their educational offer, less than one-third (30%) had institution-wide practices for the use of labour market information to guide the study and career choices of students. This practice seems to be more based at the level of programmes and faculties, as 60% reported to have activities in a wide range of programmes (Note: Size of HEI in terms of number of enrolled students in the academic year 2020/21, as published on the Higher Education Data System (eVŠ)).

Source: LMRO Call for Practices: "Survey of Institutional LMRO Priorities". Survey period: April-June 2021.

The survey covered eight areas of current practices and priorities of HEIs in enhancing the labour market relevance of their educational offer (**LMRO practices**):

- monitoring and ensuring the continued relevance of the educational offer (**monitoring relevance**);
- adapting curricula, the mix and flexibility of programmes, and qualifications to respond to evolving labour market demands (**adapting curricula**);
- using teaching practices, learning environments and assessment methods to equip students with skills valued by employers, including transversal skills (**teaching and learning**);
- supporting teaching staff to keep up to date with innovation and societal challenges linked to their discipline, and to reflect this in their teaching (**supporting teaching staff**);
- building a common understanding of graduate skills through collaboration with employers and creating trusted mechanisms for students to signal their skills (**common understanding of graduate skills**);
- using labour market information to guide study choices (enrolling in and/or switching study programmes, and/or choosing specialisations) and career decisions (**labour market information**);
- supporting students to enrol and succeed in study programmes with high labour demand (**supporting students**);
- meeting the needs of learners who seek up/reskilling through adapting curricula, the mix and flexibility of programmes, and qualifications (**upskilling and reskilling offer**).

Figure 5, Annex A).

Overall, the use of labour market information to guide student choices and supporting students to enrol in fields with high labour market demand are among the lowest ranking medium-term priorities of HEIs (Figure 8, Annex A), however slightly more important for HEIs with at least one-third of their enrolment in professional first-cycle programmes (Figure 9, Annex A).

Subject teachers in secondary schools play a limited role in early career orientation towards STEM study choices

The analysis of interviews and case studies showed that for early career orientation towards Science, Technology, Engineering and Mathematics (STEM) subjects, subject teachers in secondary schools could play a much greater role, particularly by making STEM subjects more attractive and by demonstrating how knowledge and skills are applied in the world of work. Structured and regular collaboration with HEIs can be helpful secondary schools teachers in the organisation of school visits to HEIs and outreach activities of HEIs to secondary schools.

Stakeholder interviews with subject-specific teachers underlined the need for labour market information to be made available to parents and students prior to choosing the strand of upper secondary education (academic or technical). Particularly for students in technical secondary schools, the field of vocational study has implications for subsequent educational pathways. As one of the interviewees pointed out,

“educational pathways need to be described in such a way that students and parents become aware of the occupational implications of educational choices. This also relates to how subjects are taught in school and what information students have on related occupations and jobs, that is, in the broader sense the application of knowledge in the world of work.”

Study guidance offered by HEIs is focused on first-degree programmes and does not meet the information needs of learners seeking upskilling and reskilling

Study guidance offered by HEIs in Slovenia has been largely focused on prospective students for first degree programmes. So far, the tendency has been that students, once they have chosen a field of study, remain in this field also for their higher-level studies. As one of the interviewed faculty leaders summarised: “Study programmes that have a clear vertical path, with clearly named programmes are well understood. There is a problem with the communication of study programmes that do not follow a vertical path, such as interdisciplinary programmes”.

However, the increasing number of study programmes, including interdisciplinary programmes, the high share of students that continue after completing a first degree, and the government’s aim to strengthen the role of higher education in upskilling and reskilling make study guidance for higher-level studies an important area for HEIs and public policy makers to take action.

Labour market information can play an important role in study guidance for high-level studies (Hofer, Zhivkovikj and Smyth, 2020^[19]). This is an area in which HEIs that serve a particular labour market (e.g. industry or region) can use their strategic relationships with employers to collect information on occupational pathways from entry-level jobs to higher-level jobs and the education and skills required for these jobs and use this information for study guidance.

Also for international mobility during a study programme, labour market information is important for guiding student choice. According to the interviewed stakeholders, outgoing international mobility has suffered due to the high cost of studying and living in Western Europe. Destinations in Eastern Europe are more affordable, but are perceived as having a lower labour market value.

What can be learned from current institutional practices?

Several HEIs and faculties organise activities with schools to demonstrate the societal relevance of study programmes with promising results in raising the interest of prospective students in STEM programmes

The analysis of case studies and stakeholder interviews showed that collaboration with schools and the involvement of current higher education students as tutors to offer support and advice can raise secondary school students’ interest in fields of study and specific study programmes. The interviewed students, who had participated in activities as secondary school students, underlined that particularly effective for them was having hands-on experiences that allowed them to understand the societal relevance of study programmes and aspire to potential roles in society they could achieve through higher education.

Several HEIs and faculties organise a range of activities with schools to recruit prospective students, including open days, faculty visits during the final two years of secondary school. “Science Days” are an integral part of the secondary school programme during which faculties organise one-day programmes with demonstrations and workshops. Furthermore, summer schools allow for an intensive immersion into a field of study and collaboration with peers, all in a higher education setting. Some HEI career centres produce online newsletters for secondary school students and organise workshops for prospective students to support them in their study choices. The use of social media, for example Facebook, to promote these activities among secondary school students is also increasingly common.

Notably, independent higher education institutions and private universities, in particular, reported to have institution-wide activities to support students to enrol in programmes with high labour market demand (71% and 100%, respectively) (Figure 6, Annex A).

HEIs have successfully focused on making students aware of available academic support, increasing the attractiveness of study programmes

The first year in higher education can be challenging, particularly in study programmes where students have different levels of previous knowledge. As one of the interviewed students pointed out: “There are always people at the beginning who don’t know whether it’s the right choice, especially when you don’t know the subject from school. The first year is the test of whether you’ll make it”.

Career centres have become a common feature of Slovenian higher education and, in addition to career guidance, they fulfil an important role in disseminating information on student support, also for prospective students. However, the analysis of case studies and stakeholder interviews showed that prospective students are often not aware of the academic support that is available to support them during their first year in higher education. Accessing this information as a prospective student can be difficult, particularly if student support is organised at faculty level. The smaller the faculty, the more likely it is that secondary school students are not aware of the existence of bridging courses, tutoring and other support measures that can facilitate study success in the beginning, and that they do not apply because they think “if there’s only a few spaces, I might not get in anyway”, as one interviewed student pointed out.

To make prospective students aware of the available academic support student-led study orientation can be highly effective, as the example of *Studieren Probieren* in Austria suggests. The initiative has been created, developed and is run by students. Every “guide” knows the hardship of their field of study and can give authentic help, plus they are young enough to remember their first steps into higher education. The initiative is funded by the Austrian Federal Ministry of Education, Science and Research (OECD, forthcoming^[15]).

Some HEIs have introduced study guidance for electives and specialisations, assisting students making study decisions

Study programme accreditation in Slovenia foresees that 10% of European Credit Transfer and Accumulation System (ECTS) credits in a study programme are electives, which students from other study programmes can also choose.

While this widens their study experience, students may feel overwhelmed by the course offer and lack clarity on learning outcomes and the labour market relevance of the skills developed in the course. The analysis of case studies and interviews showed that the degree of guidance varies from guided selection to leaving the choice completely up to the student. Interviews with students suggest that current practice seems to be that students choose electives purely by chance. However, students need to carefully plan their choice of electives as a surplus of ECTS credits accumulated in one year may not be transferable to the next year.

How can a structured approach be developed that reaches all students? According to the interviewed students, having a “blueprint” of the skills and competences developed through educational activities and the associated labour market prospects would be helpful to guide their choice, in addition to a diploma supplement that lists extra-curricular activities.

Policy options to support the alignment between higher education and the labour market

Further develop study guidance with a single, easily accessible and user-friendly web portal with study and labour market information for prospective students

Prospective students in Slovenia struggle to find comparable information on study programmes. The creation of an easily accessible, trustworthy and user-friendly web portal with comparable information on higher education programmes, labour market outcomes and typical career pathways would help to inform student choice. An example is Careers Portal (LMRO Partnership Initiative, 2020^[16]), the one-stop national career information portal in Ireland, which serves five target groups: i) secondary school students, ii) HEI students and graduates, iii) job seekers and those who wish to change their careers, iv) parents and guardians, and v) career counsellors. All tools and databases, including self-assessment tools, the course-finder database, the occupational database, information on upskilling opportunities and support, and HEI profiles are integrated into a unique architecture that allows information to flow freely between sections. The site has over two million visitors per year.

3. Supporting students to succeed in higher education and in the labour market

Higher education system context and challenges for HEIs

Few higher education programmes include internships

In Slovenia, internships are only mandatory in professional bachelor's programmes. Some study programmes include non-accredited internships as extra-curricular activities. In the Resolution on the National Higher Education Programme 2030, the government calls for HEIs to increase the amount of practical training in undergraduate study programmes, comparable to other European countries, to provide adequate practical skills to help young people enter the labour market more easily after graduation.

It was mentioned in the interviews that administrative process relating to the organisation of internships can potentially deter companies. Employers prefer to employ students in the end of their studies under the so-called absolvent status, which allows students to keep their student status until the end of the academic year of their graduation, rather than one-month internships which are considered too short and too much of an administrative burden.

Student work allows students to gain work experience while studying, but may also lower student engagement in studies

Most employers in Slovenia demand work experience for entry-level jobs. As one of the interviewed students said: "When you get to a job interview without prior experience, the only way to get hired is to know people there, which is not the correct way to get a job. In our faculty, particularly at master's level, studies are not really tailored towards getting work experience. To manage getting work experience and studying at the same time, I work all night and don't mind the hectic timetable".

Student work allows students in Slovenian higher education to gain work experience while studying (Box 2). About two-thirds of students engage in student work every year, for between two and three months per year on average. Student work is found through Student Services and has tax benefits; foreign students can also enter this type of employment during their studies.

Students can carry out different jobs as part of student work, from administrative roles to hospitality to professional work connected to their field of study, such as accounting services, computer programming, project management etc. Student work is usually not integrated into study programmes and can therefore increase study times. This is particularly problematic when the work is unrelated to the student's study programme or career aspirations. The study relevance of student work varies largely by field of study: it is

highest for ICT (73%) and lowest for students in Arts programme (20%) (E-študentski servis, 2020^[10]). Student associations in Slovenia have proposed the introduction of a procedure to validate and recognise student work in study programmes. The Register of Student Work could help HEIs to differentiate between student work that is related to a study programme and student work that is unrelated (Box 2).

Box 2. Student work (*Študentsko delo*) and Register of Student Work (*Evidenca študentskega dela*)

Student work

Student work is a flexible type of work that is only accessible to higher education students and upper secondary school students. Student work as it is known today has been evolving since the 1960s, and represents 3% of the total labour market in Slovenia.

A country-wide network of 16 private employment agencies specialising in student work organises temporary or occasional work for students. Work contracts have a minimum hourly wage in line with the minimum wage for full-time employment and allow students to gain extra income and work experience while studying. Student work has tax benefits; foreign students can also enter this type of employment during their studies.

Register of Student Work

The Register of Student Work was enacted through the 2017 Labour Market Regulation Act, giving the Slovenian Students Union the public mandate to run it. All agencies feed into a common database on student work on a monthly basis.

The Register of Student Work also provides information and data on the student work market for the Public Employment Service and the Ministry of Labour, Family, Social Affairs and Equal Opportunities, and it facilitates workplace oversight for the National Labour Inspectorate.

The Register of Student Work gives students access to an online platform containing full documentation of their work experience to date, where they can list the competences they have acquired and download official evidence of work experience. There are plans to further develop the register to include other information on competences graduates have acquired during their studies, for example through volunteer work or through formal or non-formal education.

Source: Submission to the 3rd international peer-learning seminar of the LMRO Partnership Initiative. Website: <https://www.studentski-servis.com/studenti/prosta-dela> (accessed on 15 February 2022).

HEIs lack systematic data to identify students at risk of attrition

HEIs in Slovenia lack systematic data to identify students at risk of attrition. Available data is limited to proxies, either from regular surveys of students employed through the student work scheme or from individual contacts between students and their supervisors.

Risk of attrition is high in the first year and during the final stage of a study programme (dissertation), but also when students have gained a certain level of knowledge and skills that are demanded on the Slovenian labour market. Demand is particularly high for workers with some ICT knowledge gained in higher education and students find it difficult to decline job offers they receive during their bachelor's

programmes. In other STEM fields, this situation is more common in master's programmes when students are more mature and have reached a certain level of knowledge and skills.

HEIs have dealt with students that risk dropping out of a study programme on a case-by-case basis. Partly, this is because, until recently, student support in Slovenia has been offered only by student associations. This has changed and the services of student associations are now being complemented with academic support services offered by HEIs organised both centrally and at faculty level.

Students lack information on the potential adverse impact of the number of hours worked per week on study engagement

Students lack information on the potential impact of the number of hours worked per week on study engagement. In high-demand fields with global job opportunities and virtual working arrangements, such as ICT, high salary prospects outweigh the potential wage premium for a completed degree, at least in the short term. There is a risk for students who need or want to combine study and work to spend too much time on their job and that work begins to take priority. Lack of awareness and a lack of measures by HEIs to collect systematic data on how much students work and where, and to detect and mitigate risk can lead to increased attrition rates.

What can be learned from current institutional practices?

HEIs have introduced project-based learning to allow a greater number of students to gain practical experience in the “world of work” as part of their study programme

In an attempt to reach more students with a structured work experience involving reflection on the skills developed, the Ministry of Education, Science and Sport funded HEIs to offer project-based learning with companies and civil society organisations. The Creative Path to Practical Knowledge (*Po kreativni poti do znanja* – PKP) programme was introduced in 2013 to help higher education students develop labour market relevant skills. A similar programme, involving public institutions and non-profit organisations, was developed in 2016: the Students' Innovative Projects for the Benefit of Society (*Študentski inovativni projekti za družbeno korist* – ŠIPK) programme (Box 3).

Evaluation of the two programmes showed positive effects on the employability of students in terms of the development of transversal skills, practical experience, and social network, with many students maintaining contact with their work mentors. The two programmes contributed to greater interdisciplinarity as projects connected students from different fields of study, and pedagogical mentors from different disciplines. The evaluation highlighted the importance of simplifying administrative procedures and documentation for the partners involved, using projects for establishing partnerships with companies, municipalities and local communities, and learning outcomes for updating study programme curricula.

Recently, the Ministry of Education, Science and Sport complemented HEI efforts to offer structured work experience as part of study programmes with the organisation of teacher training. Inovup, the national network to enhance innovation in teaching and learning, has generated a broad interest among academic staff and HEI leadership, also with regard to research into the effects of innovative pedagogical approaches, methods and forms of teaching on learning outcomes and student engagement (Box 3).

All three initiatives resonated well with HEIs in Slovenia, as survey results confirm. Overall, 70% of the surveyed HEIs reported to have institution-wide practices using teaching methods, learning environments and assessments to develop transversal skills needed to apply discipline-specific knowledge in different work settings and situations (Figure 5, Annex A). This was more common among the surveyed independent higher education institutions and private universities (79% and 100%, respectively) than among the public universities (25%) (Figure 6, Annex A). Across the sector, this area was the highest ranked medium-term priority: 75% of public universities stated that they will further develop current practice

in this area over the next two to three years, as well as all of the surveyed private universities and more than half of the independent higher education institutions (Figure 8, Annex A). Overall, this was more common for HEIs with less than one-third of their enrolment in professional first-cycle programmes (Figure 9, Annex A). Across the sector, considered most important was the medium-term development of teaching methods (85%), followed by learning environments (69%) and the development of assessment methods (69%).

Box 3. Supporting innovation in learning and teaching in Slovenian higher education

PKP and ŠIPK

In an attempt to reach more students with a structured work experience involving reflection on the skills developed, the Ministry of Education, Science and Sport funded HEIs to offer project-based learning with companies and civil society organisations.

The Creative Path to Practical Knowledge (*Po kreativni poti do znanja* – PKP) programme ran from 2013 to 2020, with EUR 10 million funding for 630 projects involving 4 243 students, 1 940 mentors (pedagogical and work mentors), and 1 041 events involving transfers of knowledge, experience and good practice to higher education.

A similar programme, involving public institutions and non-profit organisations, was developed in HEIs in 2016: the Students' Innovative Projects for the Benefit of Society (*Študentski inovativni projekti za družbeno korist* – ŠIPK) programme. It ran from 2017 to 2020, with EUR 6.4 million funding for 411 projects, including 3 379 students, and around 500 pedagogical mentors at HEIs, and 600 mentors from the local/regional non-profit sector.

Evaluation of the two programmes showed positive effects on the employability of students and the interdisciplinarity of the educational offer. For the academic year 2022/23, an initiative is being prepared to continue the activities of PKP and ŠIPK.

Inovup

Inovup is a national initiative to enhance innovation in teaching and learning. It was started in 2018 by the Ministry of Education, Science and Sport and co-ordinated by the University of Ljubljana. It involved units at the four public universities and 20 other HEIs in the country. The aim is to ensure the exchange of knowledge on innovative and flexible forms of teaching and learning among Slovenian teaching staff in higher education. Until 2022, Inovup organised more than 300 training courses for almost 7 800 teachers in higher education. Its budget was EUR 3.3 million.

Part of Inovup's work is an analysis of teaching and learning to develop a training strategy for teachers in Slovenian higher education.

Source: Submission to the 5th international peer-learning seminar of the LMRO Partnership Initiative. Website: <http://www.inovup.si/en/> (accessed on 15 February 2022).

A key challenge to be addressed by public policy and HEI leadership is how to create sufficient time resources and incentives for teaching staff to engage in innovative forms of teaching. As highlighted in the stakeholder interviews, innovative teaching methods require more preparation time than frontal lecturing. In public universities, extra preparation for project teaching is not factored into teaching time. As one of the interviewed faculty leaders summarised: "Time management is our problem. Some activities are not part of the job description and depend on people's good will. Project work is quite time consuming and class

preparation happens after working hours. As a vice-dean, I would like to have a mechanism to give concrete rewards to those that contribute.”

The involvement of students in collaborative research projects and practice-based learning opportunities has supported transversal skills development across all levels of study

The involvement of students in collaborative research projects by faculty staff working with industry and other partners has been another approach in Slovenian HEIs to increase practice-based learning opportunities across all levels of study.

A typical approach in bachelor’s programmes is that students get in touch with companies for their final thesis. In master’s programmes, the number of students is smaller which makes it easier to integrate students into research teams. They can also build on the subject-specific knowledge and basic research skills developed in first-cycle programmes. Research is both applied and theoretical, and topics are often jointly defined by academia and industry partners.

Although students have to possess the technical knowledge to be able to carry out their assigned tasks in collaborative research projects, they gain from the experience transversal skills, for example basic knowledge of project management (including an understanding of costs), problem-solving, teamwork and conflict resolution.

The interviewed project co-ordinators noted that industry partners expect that transversal skills development will reduce the onboarding time into entry-level jobs and the interviewed academic supervisors highlighted that involvement of students in collaborative research projects had a positive effect on perseverance and study success, helping students to understand how what they learn in a study programme can be applied on the job.

Curriculum designed to have practice-based elements in the beginning of a programme has the potential to increase study engagement

In bachelor’s programmes, the beginning and the transition into second year can be particularly difficult for students. Faculties offer programme-specific or general refresher courses to level the differences in subject-specific knowledge in STEM subjects. The analysis of case studies and stakeholder interviews showed that more can be done to help students in beginning of their studies. Explaining the relevance of subjects or parts of the curricula to students in the context of potential future careers can help students develop a broader understanding of the profession/s related to their study programme and can also enhance study engagement.

Study programme co-ordinators at the four visited HEIs count on designing curricula to integrate more practice-based elements in the beginning of a study programme to help students understand the relevance and out-of-classroom applicability of what they learn in class. One interesting example of how study programmes can help students to experience the relevance of what they learn in the classroom with positive effects on study engagement and student success is the use of observational practice in schools to familiarise student teachers with their future profession. Student teachers are often surprised about the workload and different tasks that are part of a teacher’s role. One of the visited faculties of education includes regular school visits in its first-year curricula. Monitoring of student progress suggests that gaining these insights early on increases student engagement and reduces attrition later on in the study programme.

As pointed out by study programme co-ordinators, these approaches require a certain degree of flexibility in curricula design. In the academic year 2020-21, during the COVID-19 pandemic, changes to study programmes were possible after the publication of enrolment places. However, interviewees stressed that

overall, the SQAA rules concede a low degree of flexibility in terms of merging courses, changing the number of contact hours and adding modules of work-based learning to curricula.

Tutoring to lower the risk of attrition and building on individual contacts with students and companies to retain students that combine study and work have shown success

Tutoring services in Slovenian HEIs, including individual tutoring and tutoring in small groups, are usually offered during the entry period. Faculties recruit student tutors from among older students to help students with their study discipline. As one of the interviewed programme co-ordinators commented: “For our students it is not a lack of motivation, it is a lack of self-discipline. They need someone to push them forward and peer-pressure works well for this.”

In recent years, the tutoring offer has increased significantly in Slovenian higher education. For example, at the University of Ljubljana the number of student tutors increased from 94 in the academic year 2017/18 to 1 243 in 2019/20. Similarly, the number of teacher tutors also increased – from 123 to 1 310 in the same period (University of Ljubljana, 2020_[13]).

Some of the larger HEIs have developed manuals for tutors outlining their role, responsibilities and available support. As the analysis of case studies and interviews showed, it is important that student tutors receive in addition to training and support also recognition for their contribution, for example in the form of a certificate (e.g. on leadership and communication skills).

Students at risk of attrition are often only detected when there is a delay in the completion of their study obligations. The formal procedure is that the faculty’s student office contacts students who need to prolong their studies to complete their thesis. The analysis of case studies and interviews showed that building on individual contacts with students and companies to retain students that combine study and work has been successful. Common practice is to persuade companies to offer students the possibility to complete their studies. Interviewed faculty leadership suggested establishing forms of collaboration with companies that allow students to remain connected with their study programme for example, working on company projects in university laboratories. Scholarships for high-performing students regulating the number of hours spent in a company are another practice. In smaller faculties, contacts with students tend to be closer and therefore easier to maintain.

At one of the visited public universities, non-active students remain in the system for two years. This allows them to continue their suspended studies without additional fees. Results are promising, as many students that had suspended their studies and started working, have started continue their studies, either full-time or part-time. At some HEIs, tutoring is also available for students returning to complete their study programme after having paused or suspended their studies. This is an area which could be further developed, according to the interviews.

Frequent touchpoints to help students with their dissertations have shown success in mitigating attrition

The interviews confirmed that a bachelor’s or master’s dissertation is often a stumbling block for students, particularly for those students needing to combine study and work.

The accreditation of bachelor’s programmes provides HEIs in Slovenia with the possibility to substitute the dissertation with additional courses and related course work. Students can choose two substitution courses, which must include research methods and develop writing skills. HEIs expect that substituting the bachelor’s dissertation with courses supports students in quickly transitioning into a master’s programme.

There was some agreement among the interviewed students that writing a bachelor’s dissertation is pointless if it is not related to research or when a master’s degree is expected by employers or is a formal requirement, as is the case for licensed professions. However, working on a dissertation in an industry or

work setting can be a highly rewarding learning experience, as the students pointed out. Furthermore, writing a dissertation provides students with the option of taking an extra year for research, dissertation writing and defence. It is common practice that students use this time to also gain practical experience .

In master's programmes, the risk of attrition can be particularly high when students have completed most/all of their course obligations and are expected to write their dissertation. Some faculties seek to mitigate this by dividing the dissertation into different stages and rewarding successful completion with ECTS credits. By segmenting the examination process, less weight is placed on the final exam and students have frequent touchpoints with their supervisor.

Switching to online services has resulted in increased student demand for career guidance

According to the interviewed career centres, the use of career services has increased since the introduction of online formats. The increased participation of students who are still at the beginning of their studies is also positive.

Before the COVID-19 pandemic, career guidance in multi-faculty HEIs had a faculty-specific orientation and audience. However, the analysis of case studies and interviews showed that switching to an online offer has made it possible for a wider group of students to access these services. This has been particularly beneficial for those students considering changing their field of study as it created more room for cross-disciplinary collaboration and a more horizontal offer of career services.

Policy options to support the alignment between higher education and the labour market

Support HEIs to develop a student monitoring system to design inclusive student support services

HEIs in Slovenia lack information on students at risk of attrition. The four visited HEIs are working on the introduction of data-supported mechanisms to detect students that have difficulty progressing with their studies, with the aim of offering them tailored support to catch up or change their field of study. The analysis of case studies and stakeholder interviews showed that central-level units play an important role in piloting, evaluating and mainstreaming innovative approaches in inclusive student support.

An example of how public policy can support HEIs in collecting data to design inclusive student support services is "Student Monitoring", a publicly funded initiative in Austria, involving nine public universities (OECD, forthcoming^[15]). The main focus is on study progression (completion, dropout and transfer) and examination activity, as well as the effects of labour market integration and socio-demographic factors on study behaviour, performance and progress. The universities' quality assurance units are collaborating in the development of relevant measurement indicators. The initiative is designed as a pilot (with the potential to scale up) to establish a comparative analysis of the study and labour market-related behaviour of students at the participating universities to strengthen inter-university co-operation.

Support HEIs in their efforts to expand new and more flexible formats of teaching and learning

Student involvement in projects with industry partners and civil society organisations (e.g. PKP and ŠIPK), and student participation in collaborative research projects have helped to build momentum for new formats of teaching and learning through multi-stakeholder collaboration and authentic challenges with a real-world focus. These formats (e.g. challenge-based learning) help students combine disciplinary knowledge with the development transversal skills, and have the potential to enhance student engagement, motivating students through difficult periods. However, if not sufficiently guided and

supervised, teaching and learning in these formats can also be a frustrating experience for teachers and students (Gallagher and Savage, 2020^[20]).

A task for public policy makers and HEI leadership is to create sufficient time resources, incentives and support for teaching staff to engage in these new formats of teaching and learning. Building on the efforts of Inovup, it will be important to standardise these formats and ensure their quality, for example, in the form of guidelines on:

- curricula-integrated formats across the different years of a study programme;
- extra-curricular formats that are flexible in terms of dates and duration;
- internal processes to facilitate collaboration with non-academic partners in the organisation of these new formats of teaching and learning.

4. Strengthening the role of higher education in the provision of upskilling and reskilling

Higher education system context and challenges for HEIs

Time, financial implications and expected return on investment are key considerations for learners who seek upskilling and reskilling in higher education. To make an attractive offer that meets the needs of individuals and employers, HEIs need up-to-date and forward-looking labour market and skills intelligence, as well as an understanding of the motivations and needs of learners. Furthermore, for learners to synchronise learning, earning and living, HEIs will need mechanisms to monitor study progress to identify and support students at risk of attrition.

An attractive offer may also require greater collaboration across the higher education sector, as noted by an interviewed part-time student in a doctoral degree programme: “When you are working on your exams there is a lot of support; it works ok. Now I am seeking support on a special method from a professor at another university and I have been waiting a year to attend training at another university.”

Some formats of upskilling and reskilling exist in higher education, and independent higher education institutions are currently most active in their provision

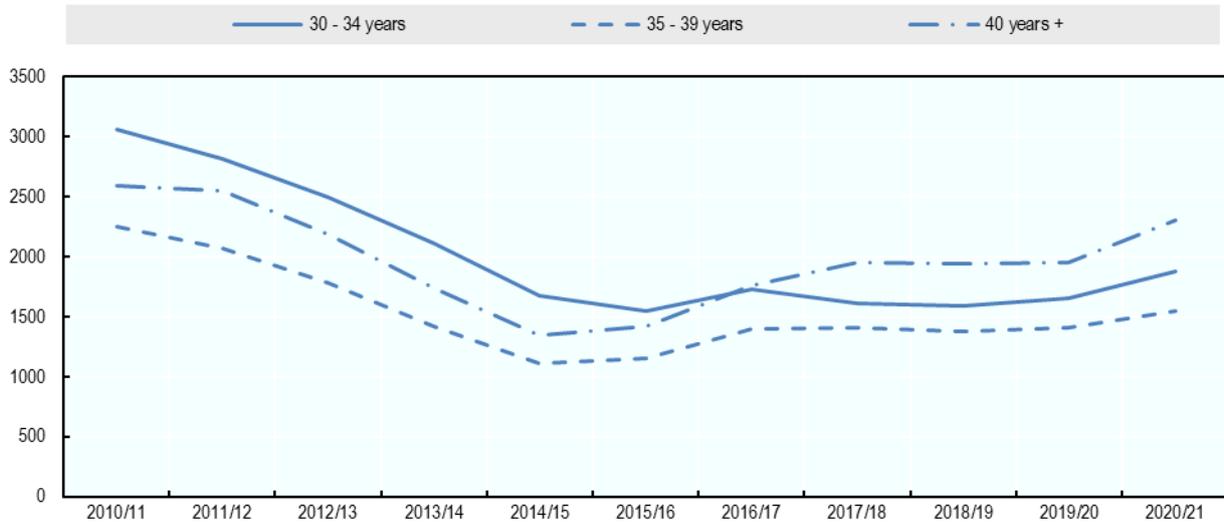
In Slovenian higher education, learners seeking upskilling and reskilling in higher education can be broadly divided into three categories : i) current students who may return in future for additional courses to complement their degree or to enrol in a different programme; ii) adult learners who enrol for the first time in higher education or those who have completed a degree at another HEI in Slovenia or abroad; and iii) learners who aim to complete a study programme they have previously terminated at the same HEI or another HEI in Slovenia or abroad.

The current offer of upskilling and reskilling in higher education consists of modularised courses, participation in higher education outside of degree programmes, and part-time studies.

The accreditation of study programmes allows HEIs to offer specific parts of a study programme in a modularised format. Some HEIs already make use of this opportunity. Across the sector, individuals, not enrolled in higher education can participate in courses of a degree programmes and take exams. Upon successful completion, they receive a certificate stating their grade and the ECTS credits obtained.

Part-time studies account currently for the largest part of current upskilling and reskilling in Slovenian higher education. The proportion of older part-time students has been increasing since around 2014/15, following a decline in previous years. Compared to 2010/11, the current proportion of part-time students aged 30 or above has increased by 72%. The largest increase can be observed for learners aged 40 or above (89%) (Figure 4).

Figure 4. Part-time students in Slovenia aged 30 or above (2010/11-2020/21)



Source: Statistical Office of the Republic of Slovenia (2021^[3]), “Students in higher education by type of education, mode of study, type of enrolment and year of study, Slovenia, annually” <https://pxweb.stat.si/SiStatData/pxweb/en/Data/Data/0955207S.px/> (accessed on 23 May 2022).

Independent higher education institutions are most active in the provision of upskilling and reskilling formats. Most of the surveyed independent higher education institutions (86%) reported to have institution-wide activities in place to adapt curricula, the mix and flexibility of programmes, and qualifications to respond to evolving labour market demands, and 43% oriented these towards the needs of learners seeking upskilling and reskilling (Figure 6, Annex A). The survey also showed that, except for one public university, none of the surveyed HEIs had identified meeting the needs of learners seeking upskilling or reskilling through adapting curricula, the mix and flexibility of programmes, and qualifications as a medium-term priority for the next two to three years (Figure 8, Annex A).

The part-time status lacks flexibility to make it attractive for learners who combine studies with work

In the 2020/21 academic year, the largest share of part-time students was in professional master’s programmes (78% in 2020/21), followed by master’s programmes (72%) and doctoral degree programmes (45%). A major deficit of the part-time status is that it lacks flexibility as it does not include additional time to complete study obligations. This makes it less attractive for learners who combine studies with work.

Teaching methods and learning environments are not fully adapted to the needs of learners seeking upskilling and reskilling

Meeting the needs of learners seeking upskilling and reskilling will require further development of teaching methods and learning environments to take into account previous knowledge and differences in learning styles. As one of the interviewed programme co-ordinators and former member of senior HEI leadership summarised: learners seeking upskilling and reskilling “recognise there are gaps in their knowledge. They need to discuss their previous experience. General information is not what they are looking for. They want to understand the theory and recognise underlying principles, be able to build and apply concepts. These students look for meaningful, reflective knowledge”. Interdisciplinary courses that combine different disciplines, for example electronics, mathematics, medicine and psychology are particularly attractive for these learners, as they offer knowledge and skills that are in high demand in the labour market and cannot be easily developed through work or otherwise outside of higher education.

One way in which HEIs can make progress in this direction is by supporting teaching staff to keep up to date with innovation and societal challenges linked to their discipline, and to reflect this in their teaching. Stakeholder interviews suggest that inter-sectoral mobility is an area for policy support. The institutional survey carried out for this project showed that current practice in this area is not yet widely spread in the form of institution-wide activities. More than half of the surveyed HEIs (55%) reported to have either a limited range of activities, including pilots in particular programmes, or activities in a range of programmes but not institution-wide (Figure 5, Annex A). Institution-wide activities were more common in the surveyed private universities and independent higher education institutions (both at 43%) than in public universities (25%) (Figure 6, Annex A).

Supporting teaching staff to keep up to date with innovation and societal challenges linked to their discipline is an area where incentives are needed: less than half of the surveyed HEIs (45%) identified this as a medium-term priority (Figure 8, Annex A).

What can be learned from current institutional practices?

Some HEIs have built strategic co-operation with companies to better understand upskilling and reskilling needs

Studies on university-business collaboration in Slovenia have highlighted that enterprises with greater experience push for more strategic co-operation, a greater international orientation of the educational offering, and put less emphasis on short-term initiatives for skills development (Deželan, Laker and Pavlin, 2016^[21]).

The analysis of case studies and interviews showed that HEIs have been investing their efforts in building strategic co-operation with companies to understand their demand for upskilling and reskilling. For example, HEIs have used targeted invitation of companies to participate in governing boards and programme development committees to understand emerging business needs for upskilling and reskilling and whether these can be met by the existing educational offering. Some HEIs have established strategic co-operation also with companies abroad to identify emerging needs in the global value chains related to their study programmes. They have used their research collaborations and associated wider networks for this, with the aim of transferring knowledge from research to curriculum.

These insights help to re-orient the study offer, as interviewed faculty leadership pointed out: “We learned that our students lack specific skills that would be of benefit to certain employers, mainly from the Pharma industry. We don’t think that our education should become too focused on the current needs of our main employer. Instead, we have to give our students a broad knowledge. One possible solution could be continuing education. Currently we only have doctoral studies. We have been thinking about specialisation courses that we could offer to employed graduates.”

Student and alumni HEI loyalties provide a basis for raising interest in upskilling and reskilling

As the interviews highlighted, the general understanding is that upskilling and reskilling is offered by private training companies, or on the job, but not in higher education. The response HEIs have taken, particularly public universities, is to raise the interest of current students in upskilling and reskilling with the aim of building lasting bonds. While independent higher education institutions have been focusing more on tailor-made courses for companies, they have also been considering how to build lasting relationships with current students.

The analysis of case studies showed that across the Slovenian higher education sector, alumni are key enablers for strategic collaboration with companies, identifying demand for upskilling and reskilling and

recruiting students. Data privacy was mentioned as the main barrier to establishing contacts with alumni, as well as a lack of resources to organise activities for alumni.

Policy options to support the alignment between higher education and the labour market

Supporting HEIs to build organisational capacity for upskilling and reskilling

Public policy in Slovenia can support HEIs in building a more structured approach to upskilling and reskilling and in developing the organisational capacity to design and deliver an attractive offer in three ways:

1. **Addressing the information challenge.** HEIs need up-to-date and forward-looking labour market and skills intelligence, as well as an understanding of the motivations and needs of learners, to design attractive offers and make prospective learners aware of them. (See policy options in Section 1). Furthermore, there could be an incentive for HEIs to monitor the need for upskilling and reskilling in occupations and sectors of the economy that are related to their educational offer through the inclusion of a dedicated section in the self-assessment reports on potential areas for an educational offer, and potential partners from the local/regional skills development ecosystem.

For prospective learners who are busy with their working lives, easy access to pertinent and comparable information on study programmes is particularly important for decision making. A learning model on how to guide student choice for upskilling and reskilling is an initiative of the Universities of the Netherlands to publish all online and offline courses for professionals on a website (www.universitairdoorleren.nl), which went online in November 2021 (OECD, forthcoming_[15]). Courses range from post-graduate master's degrees for professionals to one-week short courses and target learners who seek to expand their skillset to adapt to the changing economy (broader multidisciplinary skills, new technologies, etc.). Following the recent introduction of learning vouchers with an annual entitlement of EUR 1 000 for lifelong learning, searches for educational offers below EUR 2 000 have increased significantly.

2. **Designing an attractive educational offer and inclusive student support** in a way that meets the needs of learners who need to synchronise learning, earning and living (see policy options in Section 3). An important outcome with policy relevance of the process led by the Universities of the Netherlands is that the collation of information into an online platform has stimulated a dialogue between public universities (and the higher education sector more generally), employers, and government authorities in the Netherlands about the role of higher education in the provision of upskilling and reskilling. The typical university perspective is focused on how to translate science and knowledge into an educational offer for upskilling and reskilling. This, however, may not be what the economy needs. To develop a more demand-based offer, the dialogue process between higher education, private sector and the government seeks to build a “radar” that captures what is going on in the economy and translates this into the upskilling and reskilling educational offer in higher education. A further way to support this could be through the international mobility of teaching and administrative staff in higher education to learn how HEIs abroad design and develop lifelong learning formats for adult learners.
3. **Further developing teaching methods and learning environments adapted to the needs of mature learners** to meet the needs of learners that seek upskilling and reskilling. The national initiative to stimulate and support innovation in teaching and learning, Inovup (Box 3) provides an excellent basis for this. A learning model could be Ireland's National Forum for the Enhancement of Teaching and Learning in Higher Education, which was formed by ministerial order in November 2012. The announcement of the establishment of the National Forum represented the beginning of a new era for Irish higher education. Ireland's National Strategy for Higher Education to 2030 had outlined the importance of ensuring the centrality of teaching and learning in Irish higher

education and the National Forum became the national body responsible for leading and advising on the enhancement of teaching and learning across the sector (OECD, forthcoming^[15]).

References

- Bank of Slovenia (2019), *Economic and Financial Developments, January 2019*, Bank of Slovenia, Ljubljana. [7]
- Brüning, N. and P. Mangeol (2020), “What skills do employers seek in graduates?: Using online job posting data to support policy and practice in higher education”, *OECD Education Working Papers*, No. 231, OECD Publishing, Paris, <https://dx.doi.org/10.1787/bf533d35-en>. [14]
- CEDEFOP (2016), *Slovenia: Mismatch priority occupations*, https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/slovenia-mismatch-priority-occupations (accessed on 15 July 2020). [11]
- Deželan, T., J. Laker and S. Pavlin (2016), “What Determines Enterprises’ Perceptions of Future Development in Higher Education - Strange Bedfellows?”, *European Journal of Education*, Vol. 51/1, pp. 107-125, <https://doi.org/10.1111/ejed.12169>. [21]
- E-študentski servis (2020), *Data provided to the OECD Secretariat*. [10]
- European Commission (2020), *2020 European Semester: Country Report - Slovenia*, European Commission, Brussels. [5]
- European Commission (2019), *2019 European Semester: Country Report - Slovenia*, https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-slovenia_en.pdf (accessed on 23 December 2020). [9]
- Gallagher, S. and T. Savage (2020), “Challenge-based learning in higher education: an exploratory literature review”, *Teaching in Higher Education*, <https://doi.org/10.1080/13562517.2020.1863354>. [20]
- Hofer, A., A. Zhivkovikj and R. Smyth (2020), *The role of labour market information in guiding educational and occupational choices*, OECD Publishing, <https://doi.org/10.1787/59bbac06-en>. [19]
- LMI for All (2020), *LMI for All*, <https://www.lmiforall.org.uk/>. [17]
- LMRO Partnership Initiative (2020), *Labour Market Information for Higher Education Institutions and Learners*, <https://www.wpz-research.com/wp-content/uploads/2022/01/Seminar-brochure.pdf> (accessed on 23 May 2022). [16]
- Ministry of Education, Science and Sport (2022), *Tabela 2: Število dijakov zaključnih letnikov srednjih šol, ki so oddali prvo prijavo za obdobje petih let (Table 2: Number of upper secondary school pupils making their first application to higher education over a five-year period)*. [2]
- Ministry of Education, Science and Sport (2019), *Delež ponovno vpisanih 2018/19 (Share of re-enrolments 2018/19)*. [18]
- Nedelkoska, L. and G. Quintini (2018), “Automation, skills use and training”, *OECD Social, Employment and Migration Working Papers*, No. 202, OECD Publishing, Paris, <https://dx.doi.org/10.1787/2e2f4eea-en>. [4]
- OECD (2021), *Educational attainment and labour-force status: Trends in employment*, [1]

unemployment and inactivity rates, by educational attainment and age group, OECD Publishing, <http://dotstat.oecd.org/Index.aspx?QueryId=113637> (accessed on 20 April 2022).

- OECD (2019), *Education at a Glance 2019: OECD Indicators*, OECD Publishing, Paris, [8]
<https://dx.doi.org/10.1787/f8d7880d-en>.
- OECD (2019), *OECD Employment Outlook 2019: The Future of Work*, OECD Publishing, Paris, [6]
<https://dx.doi.org/10.1787/9ee00155-en>.
- OECD (2017), *OECD Skills Strategy Diagnostic Report: Slovenia 2017*, OECD Skills Studies, OECD Publishing, Paris, [12]
<https://dx.doi.org/10.1787/9789264287709-en>.
- OECD (forthcoming), “Enhancing labour market relevance of higher education: Country note Austria”, *Education Policy Perspectives*, No. 56, OECD Publishing, Paris, [15]
https://www.oecd-ilibrary.org/education/oecd-education-policy-perspectives_5cc2d673-en.
- Statistical Office of the Republic of Slovenia (2021), *Students in higher education by type of education, mode of study, type of enrolment and year of study, Slovenia, annually*, <https://pxweb.stat.si/SiStatData/pxweb/en/Data/Data/0955207S.px/> (accessed on 23 May 2022). [3]
- University of Ljubljana (2020), *Annual Report 2020: Business Report and Quality Assurance Report*, https://kakovost.uni-lj.si/wp-content/uploads/2021/08/self_evaluation_inst_business_report_quality_ul_2020.pdf. [13]

Annex A. About the project and field work in Slovenia

About the project

To support policy makers and HEIs in their shared commitment to enhance the labour market relevance and outcomes (LMRO) of higher education, the European Commission and the OECD launched the LMRO Partnership Initiative in 2019, a collaborative project with the participation of Austria, Hungary, Portugal and Slovenia.

The LMRO Partnership Initiative has three objectives and related strands of work:

- 1) To assess the alignment of supply and demand of graduate skills and to identify ways to improve this alignment by:
 - a. analysing detailed evidence of the labour market outcomes experienced by graduates and employers to identify the potential drivers and barriers affecting these outcomes;
 - b. identifying policy options and institutional practices with the potential to overcome existing barriers, increase the connections between higher education and the labour market, and improve associated labour market outcomes – by drawing upon international practice and research evidence.
- 2) To stimulate peer learning about policy options and institutional practices that can improve the articulation between higher education provision and labour markets.
- 3) To maximise the impact of research evidence and peer learning on institutional practice by developing a self-reflection questionnaire for higher education institutions on labour market relevance and outcomes (Annex B).

Through policy analysis, peer-learning activities and the development of a self-reflection questionnaire for use by higher education institutions, the project contributed to building national government and higher education institutional capacity to implement future higher education policy reforms. The project informed and supported the European Strategy for Universities, linking its planned aims to national and institutional context and spurring the transformation of the higher education sector.

Country-specific analyses assisted policy makers in the participating countries with the examination of existing policy portfolios, and the identification of policy options that have the potential to improve labour market relevance and outcomes of higher education.

Analytical framework

The analytical framework of the project consists of eight policy and practice areas that public authorities and higher education institutions can use to enhance the articulation between higher education and the labour market, with a view to supporting good alignment between skills supply and demand:

- educational offer: curricula and programme content, programme duration and delivery modes that respond flexibly to current and predicted demand for knowledge and skills, including through programmes aimed at existing workers;
- student support and learning environment: financial and non-financial support that encourages students to develop and obtain knowledge, skills and credentials relevant to the labour market;
- policies governing staff profiles and use of time: to support a focus on developing labour market relevant knowledge and skills among students;
- labour market information: widely available, reliable and accessible information on labour market skills needs and outcomes of graduates from different programmes that is used by students and graduates to make effective career decisions;
- skills-signalling mechanisms: various mechanisms to help employers understand the skills that graduates from different programmes should possess and to help graduates convey the skills they have obtained through higher education;
- quality assurance and accreditation processes: to ensure that education credentials are of good quality and trusted by employers;
- strategic planning, forecast mechanisms and co-ordination: to help ensure the higher education system delivers programmes in response to both current and projected labour market needs;
- public funding to HEIs: taking into account the real or projected career prospects of graduates to encourage labour market-relevant provision as part of a diversified mix of higher education study options.

The project was organised in two phases. Phase 1, from March to December 2020, focused on analysing the labour market outcomes of higher education graduates with the aim of assessing the supply and demand of graduate skills in each participating country. Phase 2, from January to December 2021, focused on analysing institutional practices that seek to enhance the relevance of the educational offer to the labour market.

Call for Practices

The Call for Practices had three aims:

- 1) to collect information on the current practices and priorities of HEIs in enhancing the labour market relevance of their educational offer;
- 2) to analyse current and planned future practices to identify enablers, success factors and barriers, and develop from these a set of statements that HEIs can use for a self-reflection exercise to identify areas for improvement;
- 3) to identify innovative practices for presentation and review in a series of peer-learning activities, which informed the development of a self-reflection questionnaire for use by higher education institutions.

The Call for Practices was addressed to all HEIs in the country and consisted of two questionnaires: a “Survey on Institutional Priorities” (CfP-A) and a “Submission of Practices” (CfP-B). The survey period was April – June 2021.

Field work in Slovenia

Key higher education policy stakeholders in Slovenia formed a National Advisory Group (NAG) and guided important project decisions with their knowledge and expertise. The NAG played a leading role in identifying priority areas for the country-specific analyses, and is expected to provide an important national dissemination channel to ensure involvement of key stakeholders in the implementation of the project's recommendations. Participation in the project was co-ordinated by the Ministry of Education, Science and Sport. NAG members were: the Slovenian Quality Assurance Agency for Higher Education, the Employment Service of Slovenia, several higher education institutions (the Angela Boškin Faculty of Health Care, Environmental Protection College, the Faculty of Information Studies in Novo Mesto, the Faculty of Polymer Technology, the University of Ljubljana, the University of Maribor, the University of Nova Gorica and the University of Primorska), the Association of Private Higher Education Institutions, the Slovenian Student Union, the Chamber of Commerce and Industry of Slovenia, and the Slovenian Business Club.

Review of higher education institutional practices

Higher education institutional practices can have an important bearing on the quality and relevance of skills that graduate develop, and the labour market outcomes they experience after completing their studies. To examine these practices, the project team carried out interviews with key higher education policy stakeholders and virtual study visits to a non-statistical sample of higher education institutions, proposed by the national coordinator (Table 2, Table 3).

Table 2. Stakeholder interviews in Slovenia

Stakeholder groups interviewed as part of the project	Number of interviewees
Senior management of HEIs (including some umbrella organisation representatives)	33
Career centres, student support services in HEIs	17
Student representatives	16
Employer representatives	11
Third mission units (e.g. technology transfer offices, science parks)	9
Internal quality assurance offices of HEIs	6
Study programme co-ordinators in HEIs	5
Teaching staff	4
Ministries or government agencies	2
National quality assurance agencies	2
Alumni	2
Total number of interviewees	107

Table 3 gives an overview of the virtual study visits and the Call for Practices that were carried out in the project.

Table 3. Study visits and Call for Practices in Slovenia

Study visits	Call for Practices
FTPO: 25-26 May 2021, 19 interview partners	Number of participating institutions: 5
University of Maribor: 14-15 June 2021, 13 interview partners	Number of submissions: 18
University of Ljubljana: 7-8 July 2021, 38 interview partners	Submissions by type of institution:
University of Primorska: 13 and 15 July 2021, 25 interview partners	Public Universities: 11
	Private Universities: 1
	Independent Higher Education Institutions: 6

Survey results

The Ministry of Education, Science and Sport identified 47 HEIs to be invited to participate in a survey of current practices and institutional priorities and 20 HEIs participated. The total response rate was 43%. The participating HEIs enrolled 93% of the students in the academic year 2020/21.

The questionnaire contained both closed-ended and open-ended questions. Respondents were asked to: i) rate the institutional coverage of current practices (on a scale from no activity exists to institution-wide activities, with an activity defined as “any form of action undertaken to enhance the labour market relevance and outcomes of the HEI’s educational offer”); ii) prioritise a maximum of three areas for further development over the next two to three years; iii) describe the current use of information on graduate labour market outcomes and employer skills demand; and iv) state whether there are institutional quality assurance procedures in place related to the labour market relevance of the educational offer or whether there are plans to develop such procedures.

Table 4. Slovenia: Review of higher education institutional practices

Institutional survey	
Total number of responding institutions:	20
Total number of institutions invited to participate:	46
Survey response rate:	43%
Response rate by type of institution:	Public Universities: 100% (3 HEIs) Private Universities: 67% (2 HEIs) Independent Higher Education Institutions: 38% (15 HEIs)
Response rate by size of institution:	15-99: 30% 100-399: 24% 400-999: 50% 1000-2999: 100% 3000-65000: 100%
Response rate by type of educational offer:	<1/3 of total enrolment in professional programmes: 54% ≥1/3 of total enrolment in professional programmes: 39%

Note: Size of HEI in terms of number of enrolled students in the academic year 2020/21, as published on the Higher Education Data System (eVŠ).

Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

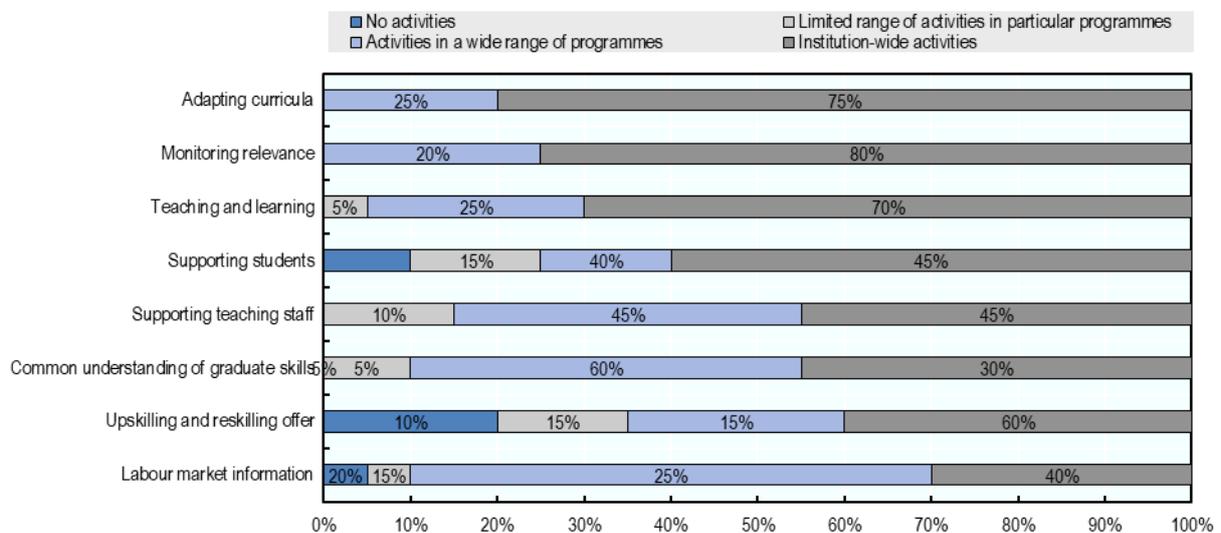
The survey covered eight areas of current practices and priorities of HEIs in enhancing the labour market relevance of their educational offer (**LMRO practices**):

- monitoring and ensuring the continued relevance of the educational offer (**monitoring relevance**);
- adapting curricula, the mix and flexibility of programmes, and qualifications to respond to evolving labour market demands (**adapting curricula**);
- using teaching practices, learning environments and assessment methods to equip students with skills valued by employers, including transversal skills (**teaching and learning**);
- supporting teaching staff to keep up to date with innovation and societal challenges linked to their discipline, and to reflect this in their teaching (**supporting teaching staff**);

- building a common understanding of graduate skills through collaboration with employers and creating trusted mechanisms for students to signal their skills (**common understanding of graduate skills**);
- using labour market information to guide study choices (enrolling in and/or switching study programmes, and/or choosing specialisations) and career decisions (**labour market information**);
- supporting students to enrol and succeed in study programmes with high labour demand (**supporting students**);
- meeting the needs of learners who seek up/reskilling through adapting curricula, the mix and flexibility of programmes, and qualifications (**upskilling and reskilling offer**).

Figure 5. Current coverage of LMRO practices

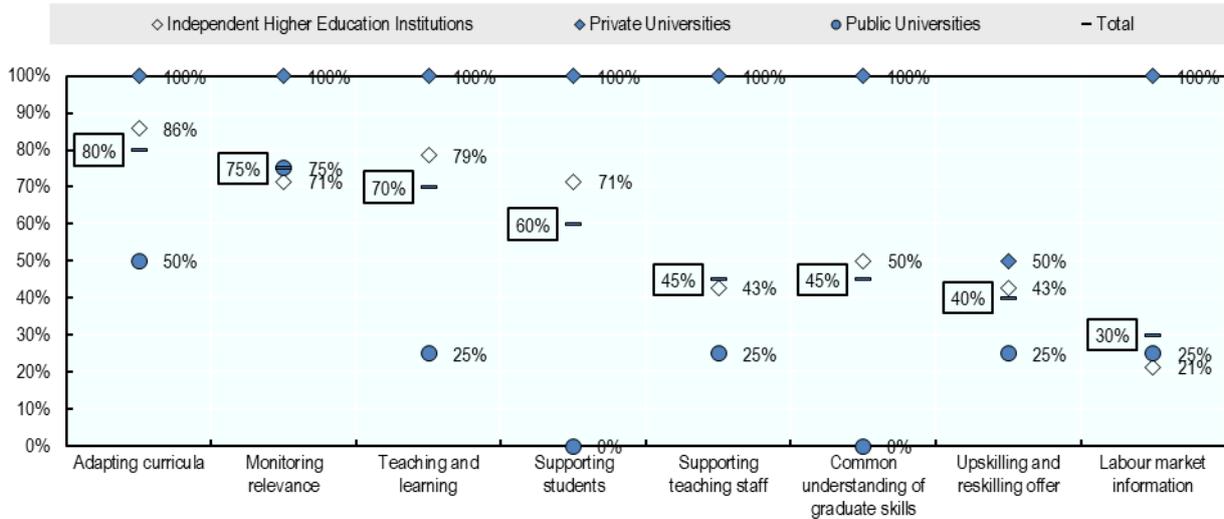
Please rate the status quo of the following eight areas:



Note: The questionnaire provided the following explanation for “activity”: “An activity includes any form of action undertaken to enhance the labour market relevance and outcomes of the HEI’s educational offer.”

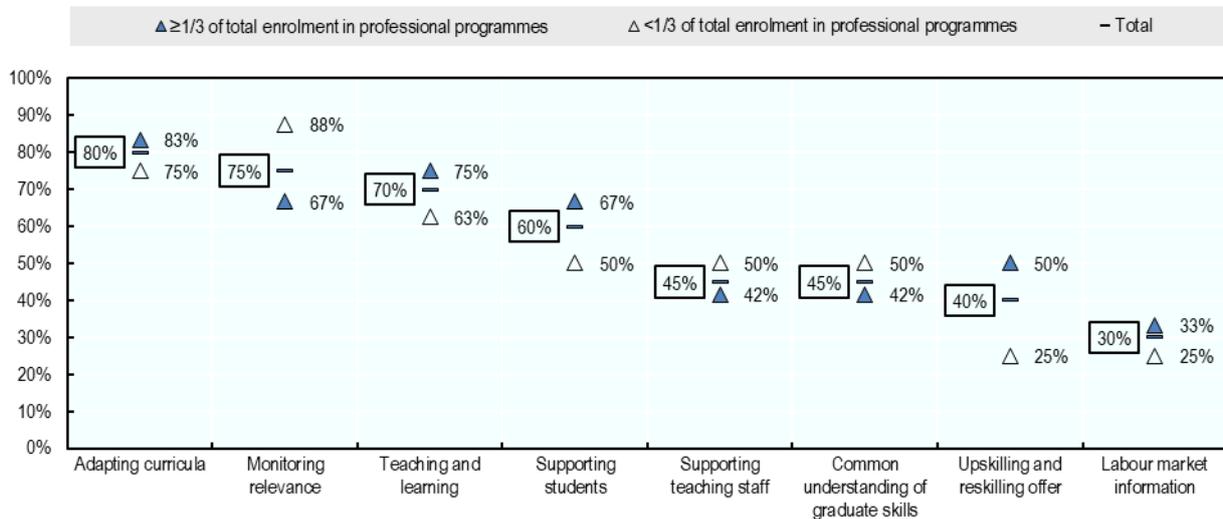
Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

Figure 6. Current presence of institution-wide activities of LMRO practices by type of HEI



Note: Sorted in descending order for the share of institution-wide activities for total. Percentage of respondents who stated that institution-wide activities exist for each of the eight areas of LMRO practices. The questionnaire provided the following explanation for “activity”: “An activity includes any form of action undertaken to enhance the labour market relevance and outcomes of the HEI’s educational offer.”
 Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

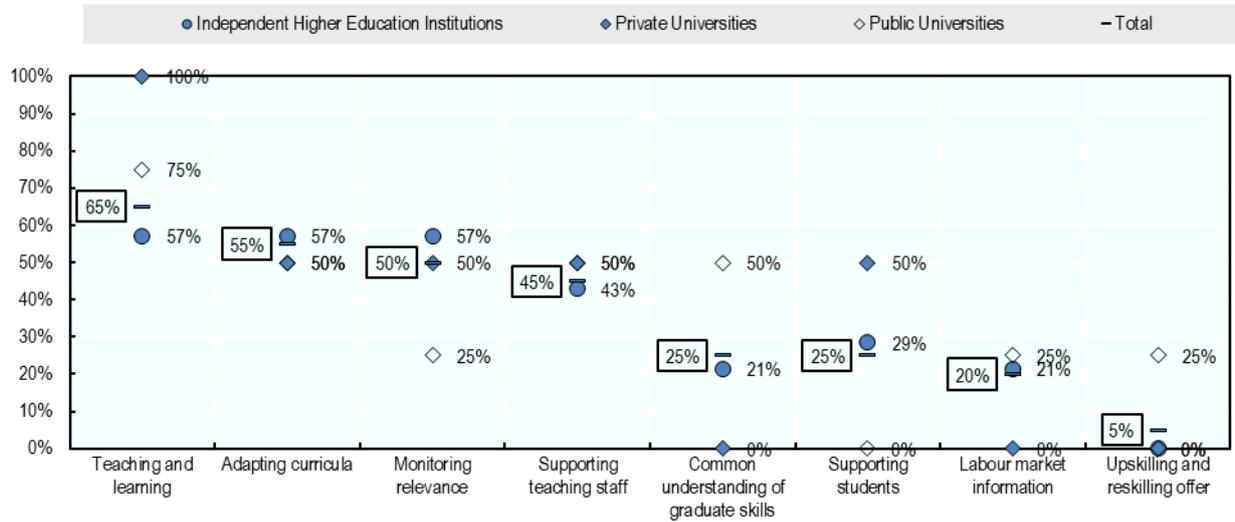
Figure 7. Institution-wide coverage of LMRO practices by number of students enrolled in professional bachelor’s programmes (ISCED 6)



Note: Sorted in descending order for the share of institution-wide activities by total. Percentage of respondents who stated that institution-wide activities exist for each of the eight areas of LMRO practices. The questionnaire provided the following explanation for “activity”: “An activity includes any form of action undertaken to enhance the labour market relevance and outcomes of the HEI’s educational offer.”
 Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

Figure 8. Medium-term LMRO priorities by type of HEI

Which are the most important areas you would like to develop further over the next 2-3 years?

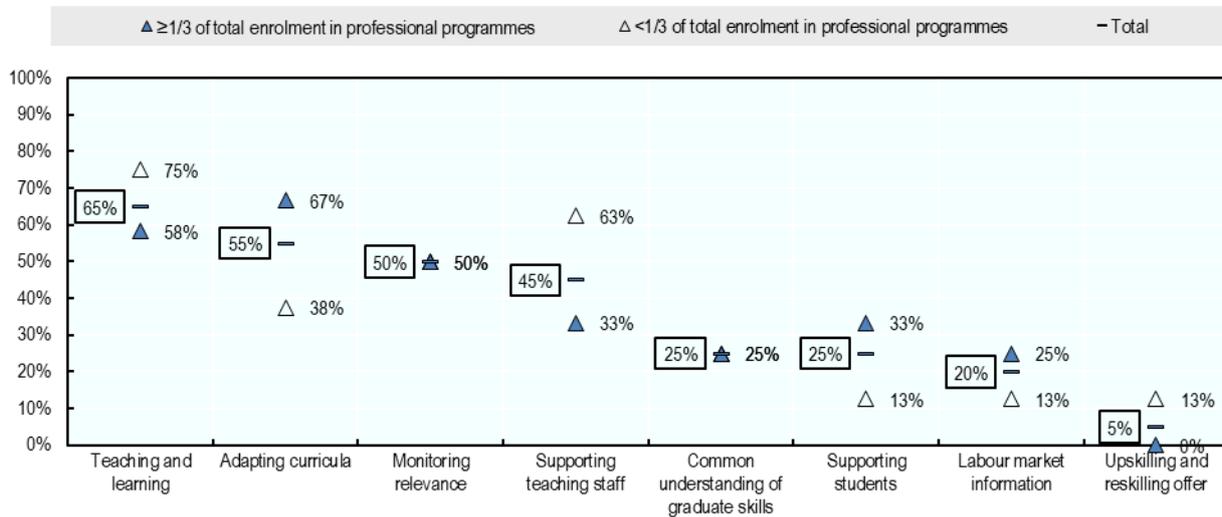


Note: LMRO practices are shown in descending order for total.

Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

Figure 9. Medium-term LMRO priorities by number of students enrolled in professional bachelor’s programmes (ISCED 6)

Which are the most important areas you would like to develop further over the next 2-3 years?



Note: LMRO practices are shown in descending order for total.

Source: LMRO Call for Practices: “Survey of Institutional LMRO Priorities”. Survey period: April-June 2021.

Annex B. Self-reflection questionnaire for HEIs on the articulation with the labour market

This self-reflection questionnaire aims to support higher education institutions (HEIs) in Slovenia and elsewhere: i) to reflect on the articulation of higher education with the labour market, by identifying strengths and weaknesses of current institutional practices; and ii) to identify and scale-up effective institutional practices. The self-reflection questionnaire can stimulate (international) peer learning among study programmes and HEIs, and help HEI leadership to identify strategic institutional development priorities.

This self-reflection questionnaire contains five categories with examples of current institutional practice that were found to have the potential to enhance the articulation between higher education and the labour market and the alignment between skills supply and demand. Each category was examined in a peer-learning event, which gathered an international audience of higher education policy stakeholders, including policy makers, leaders of HEIs, teaching and administrative staff, higher education researchers, and representatives of quality assurance bodies, industry and student unions. Seminar brochures document the discussion and exchange of policy and practice examples among stakeholders, and are a resource for policy makers and practitioners to support new initiatives and further develop existing initiatives (Table 5).

Table 5. Crosswalk: Self-reflection categories and international peer-learning seminars

Self-reflection category	LMRO Partnership Initiative's international seminars
Monitoring the relevance of the educational offering	"Using labour market information to improve learners' choices and curriculum" (November 2020)
Adapting the educational offering and skills signalling	"Stimulating innovation through inter- and trans-disciplinarity in education and research" (March 2022)
Continuous development of teaching practices and learning environments	"Supporting improvement in teaching and learning to address students' needs and labour market demands" (March 2022)
Supporting student enrolment in study programmes with high labour demand	"Widening access and attracting students to fields with high labour market demand" (February 2022)
Supporting student success in higher education and in the labour market	"Raising study success through student support and improved career-study linkages" (February 2022)

1. Monitoring the relevance of the educational offering

The HEI monitors the relevance of the educational offering in light of changing labour market needs.

	Not practiced	Pilot initiatives	Further development underway	Established practice
Use of publicly available information on graduate employment outcomes and current and emerging employer skill demand to monitor relevance of the educational offer, update curricula and support students in their study choices				
Encourage the collection, analysis and use of labour market information by providing guidance for the evaluation of initiatives, and support for the upscaling of successful initiatives				
Use of strategic collaboration with firms to learn about emerging skill needs				
Support for study programmes to make effective use of labour market information for curricula updates and study guidance				

For relevant policy and practice examples and brief descriptions of initiatives, see the Seminar Brochure “**Using labour market information to improve learners’ choices and curriculum**”. Download the Seminar Brochure at <https://www.oecd.org/education/higher-education-policy/>.

2. Adapting the educational offering and skills signalling

The HEI adapts its educational offering (curricula, mix of programmes and qualifications) to evolving labour market needs, and builds a common understanding of graduate skills and trusted mechanisms for students/graduates to signal their skills to employers.

	Not practiced	Pilot initiatives	Further development underway	Established practice across the institution
External and/or internal quality assurance processes of study programmes are used to identify opportunities for adapting curricula				
Courses that equip students with in-demand transversal/transferable skills (e.g. digital skills), and knowledge of relevant cross-disciplinary topics (e.g. environmental sustainability) are offered as specialisations or add-ons to study programmes				
Technology transfer offices, business participation in governing boards, career centres and other HEI units with strategic employer relations are actively involved in communicating the skills content of (new) educational offers to students and employers using/developing well-recognised formats (e.g. micro-credentials, badges, etc.)				
Machine-readable records of study programmes are used to increase the efficiency of quality assurance and curricula update, and are used to improve skills-signaling mechanisms which permit employers to recognise the skills content of study programmes				

For relevant policy and practice examples and brief descriptions of initiatives, see the Seminar Brochure “**Stimulating innovation through inter- and trans-disciplinarity in education and research**”. Download the Seminar Brochure at <https://www.oecd.org/education/higher-education-policy/>.

3. Continuous development of teaching practices and learning environments

The HEI promotes the continuous development of teaching practices, learning environments and assessment methods that equip students with transversal/transferable skills, and encourages and supports teaching staff to keep up to date with innovation and societal challenges linked to their discipline, and to reflect this in their teaching.

	Not practiced	Pilot initiatives	Further development underway	Established practice across the institution
Support learning among peers within the HEI and in an international context to adopt and further develop teaching practices, learning environments and assessment methods				
Project-based learning is offered across programmes and levels of study to allow students to gain practical experience in the “world of work” as part of their study programme				
Organise the involvement of students in collaborative research projects facilitating transversal skills development, identifying and documenting the skills developed				

For relevant policy and practice examples and brief descriptions of initiatives, see the Seminar Brochure “Supporting improvement in teaching and learning to address students’ needs and labour market demands”. Download the Seminar Brochure at <https://www.oecd.org/education/higher-education-policy/>.

4. Supporting student enrolment in study programmes with high labour demand

The HEI supports student enrolment in study programmes with high labour demand.

	Not practiced	Pilot initiatives	Further development underway	Established practice across the institution
Collaboration with secondary schools to demonstrate the societal relevance of in-demand study programmes, for example in science, technology, engineering and mathematics (STEM), to raise interest among learners				
Prospective students receive information that describes the study environment, academic requirements, and labour market prospects of programmes as authentically as possible				
Prospective students are made aware of the academic support available to them (e.g. tutoring, STEM, academic writing)				
Students are offered study guidance for electives, specialisations, higher-level studies and the HEI’s upskilling and reskilling offer				

For relevant policy and practice examples and brief descriptions of initiatives, see the Seminar Brochure “Widening access and attracting students to fields with high labour market demand”. Download the Seminar Brochure at <https://www.oecd.org/education/higher-education-policy/>.

5. Supporting student success in higher education and in the labour market

The HEI supports student success in study programmes with high labour market demand, and meets the needs of diverse learners, including those combining study with work/care obligations.

	Not practiced	Pilot initiatives	Further development underway	Established practice across the institution
Use of predictive analytics and proactive advising to identify and support students at risk of attrition				
Diversity-sensitive teaching and curricula designed to have practice-based elements in the beginning of a programme are used to meet the needs of different types of learners and to increase study engagement and success				
Peer-delivered study guidance (e.g. tutoring) and support delivered by the HEI's central units are linked up to increase the effectiveness of guidance and support, and to design targeted services				
Students are informed about the potential adverse impact of the number of hours worked per week on study engagement				
Structured approaches to support students to combine study and work (e.g. partnerships with guidelines for companies defining the maximum amount of working hours per week)				
Frequent touchpoints with supervisors and academic writing support are offered to help students with their dissertations				
Participation opportunities in research groups for doctoral students to benefit from peer connections and learning through observation				
Services of career centres reach students early in their studies and are tailored to different levels of study				
Efforts to meet the needs of learners who seek up/reskilling through adapting curricula, the mix and flexibility of programmes, and qualifications				

For relevant policy and practice examples and brief descriptions of initiatives, see the Seminar Brochure **“Raising study success through student support and improved career-study linkages”**. Download the Seminar Brochure at <https://www.oecd.org/education/higher-education-policy/>.

This Education Policy Perspective has been authorised by Andreas Schleicher, Director of the Directorate for Education and Skills, OECD.

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.