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THE EU AGENCY SUPPORTING COUNTRIES TO DEVELOP THROUGH LEARNING

SELFIE FOR WORK-BASED LEARNING PILOTS

in Georgia, Montenegro, Serbia and Turkey

A joint project of the European Commission, Joint Research Centre (JRC, B.4) and the European Training Foundation

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1. INTRODUCTION

The use of digital technologies is becoming increasingly relevant in vocational education and training (VET). Not only is it key to preparing learners for an increasingly digitalised workplace, but also, when successfully deployed, it can contribute to the quality and inclusiveness of learning in all environments, including the workplace. These facts were starkly outlined at the beginning of 2020, when the Covid-19 pandemic forced schools across the world to adopt digital methods of teaching and learning, ready or not. What also became clearer was the need for data on digital readiness at all levels: from the school principal concerned about how teachers were coping with the switch to those making decisions that can affect the future of a country, its economy and its people. The European Commission is aware of these challenges. The first priority in its Digital Education Action Plan 2021–2027 is 'the development of a high-performing digital education ecosystem'. To achieve this, 'effective digital capacity planning and development' is underlined as 'vital for education and training systems' (European Commission, 2020).

In other words, education and training systems need the right tools and processes to plan and develop their digital capacity. SELFIE for work-based learning (SELFIE WBL) provides one such tool. A self-reflection tool for vocational schools that use WBL in their programmes, it is designed to assess digital readiness, to encourage a practice of collective reflection on the use of digital technologies for teaching and learning, and to use this reflection to make informed and collective decisions about strategy and practices at all levels. Using anonymised aggregated data, it also has a system-wide dimension, helping policymakers take action towards developing the digital capacity of education and training systems, taking into account the views and needs of school leaders, teachers, students and in-company trainers.

Based on the SELFIE tool for schools developed by the European Commission's Joint Research Centre (JRC) in 2018, SELFIE WBL has the added dimension of including in-company trainers in the self-reflection process, and thus responds to the growth in dual-learning systems in VET. It aims to bring VET institutions and the private sector closer in order to embed digital technology that both benefits learners and narrows the skills gap.

During 2020, SELFIE WBL was piloted in nine countries. Within the European Union (EU), the JRC and the European Forum of Technical and Vocational Education and Training (EfVET) organised pilots in France, Germany, Hungary, Poland and Romania. The European Training Foundation (ETF)

joined this collaborative effort to coordinate the pilots in the EU neighbourhood countries of Georgia, Montenegro, Serbia and Turkey.

Despite the constraints and pressures imposed by the Covid-19 pandemic during the pilot, all four countries successfully piloted SELFIE WBL and submitted a report – see SELFIE WBL pilot country reports (JRC and ETF, 2021b–e). The current report presents key data and user experiences from the pilots and summarises the findings from these four ETF partner countries and their recommendations for the scaling up of SELFIE WBL[1].

1. In this report SELFIE WBL is used to denote the new development of the SELFIE tool for work-based learning; where the abbreviation SELFIE is used without the appendix WBL, this refers to the SELFIE tool and its ecosystem overall.

2. BACKGROUND: WHAT IS SELFIE?

SELFIE stands for self-reflection on effective learning by fostering the use of innovative educational technologies. The SELFIE tool was launched in October 2018 as part of the Digital Education Action Plan 2018 (European Commission, 2018). It was developed by the European Commission with the scientific support of the JRC, the European Commission's science and knowledge service, in collaboration with educational experts, education ministries and research institutes, and is based on the conceptual framework for Digitally Competent Educational Organisations (DigCompOrg) (European Commission, 2015). The ETF is engaged in applying and expanding SELFIE in the partner countries it works with.

SELFIE is a self-reflection tool for schools to assess their digital readiness, supporting primary and secondary, general and vocational schools to (i) plan for technology use in teaching and learning, including remote teaching; and (ii) foster student digital competences. The tool is available in more than 30 languages and is modular, allowing schools to adapt the questionnaire to their specific needs. As of May 2021, SELFIE had more than 1.5 million users in 76 countries.

The use of SELFIE is free of charge and on a voluntary basis. Implemented by schools themselves, it involves teachers, students and school leaders answering – anonymously – a series of questions and statements on technology use in different areas of school life and practice (e.g. infrastructure, student digital skills, leadership and assessment). The principle of self-reflection is an important aspect of SELFIE, encouraging engagement at a grassroots level, thus facilitating a process for progress and innovation. A key feature is that some questions can be individually customised by each school. At the end of the process the school gets a confidential report with data and insights into what is working well and what could be improved in terms of deploying digital innovation for learning. The SELFIE report can help the school community to discuss its approach and action to embed technology and develop digital skills for staff and students.

The organisation of educational processes in VET differs significantly from that of general education. Notably, a key feature of VET is that a significant proportion of educational time is dedicated to learning practical skills, often in WBL contexts. This can take place either in an educational or training institution involving external trainers from partner companies, or at the workplace itself. For this reason, and following a JRC technical report (Broek and Buiskool, 2020)

on the feasibility of adapting the SELFIE tool to WBL systems, SELFIE was extended to incorporate in-company trainers in its questionnaire and qualitative research. One of the aims of SELFIE WBL is to bring VET institutions and companies closer in discussing how they can jointly embed digital technology in education and training to better connect the different learning environments and, overall, improve skills provision.

SELFIE WBL was piloted in the five EU countries and four ETF partner countries between September and December 2020. The pilot involved 28 698 participants from 135 vocational schools and 280 companies.

Table 2.1: SELFIE WBL pilots in EU and EU neighbourhood countries – Key data

	DE	FR	HU	PL	RO	GE	ME	RS	TR
Pilot phase start & end date	14 Sep 8 Oct	28 Sep 11 Dec	5 Oct 5 Nov	29 Sep 30 Oct	16 Nov 4 Dec	1 Nov 27 Nov	20 Oct 15 Nov	5 Oct 11 Nov	21 Nov 27 Nov
National kick-off date	14 Sep	14 Sep	22 Sep	15 Sep	13 Nov	29 Oct	15 Oct	5 Oct	17 Nov
Number of participating schools	12	11	14	12	23	15	12	13	23
Number of participating companies	26	11	28	13	50	15	20	30	87

Number of responses				
Total	School leaders	Teachers	Students	In-company trainers
28 698	502	3 300	24 525	371

Note: The pilot outcomes are not representative of the national education and training systems.
Source: ETF-JRC's presentation of the SELFIE WBL pilot outcomes, December 2020.

The ETF, in consultation with the education ministries in its partner countries, selected four countries – Georgia, Montenegro, Serbia and Turkey – to take part in the SELFIE WBL pilot, based on the following criteria:

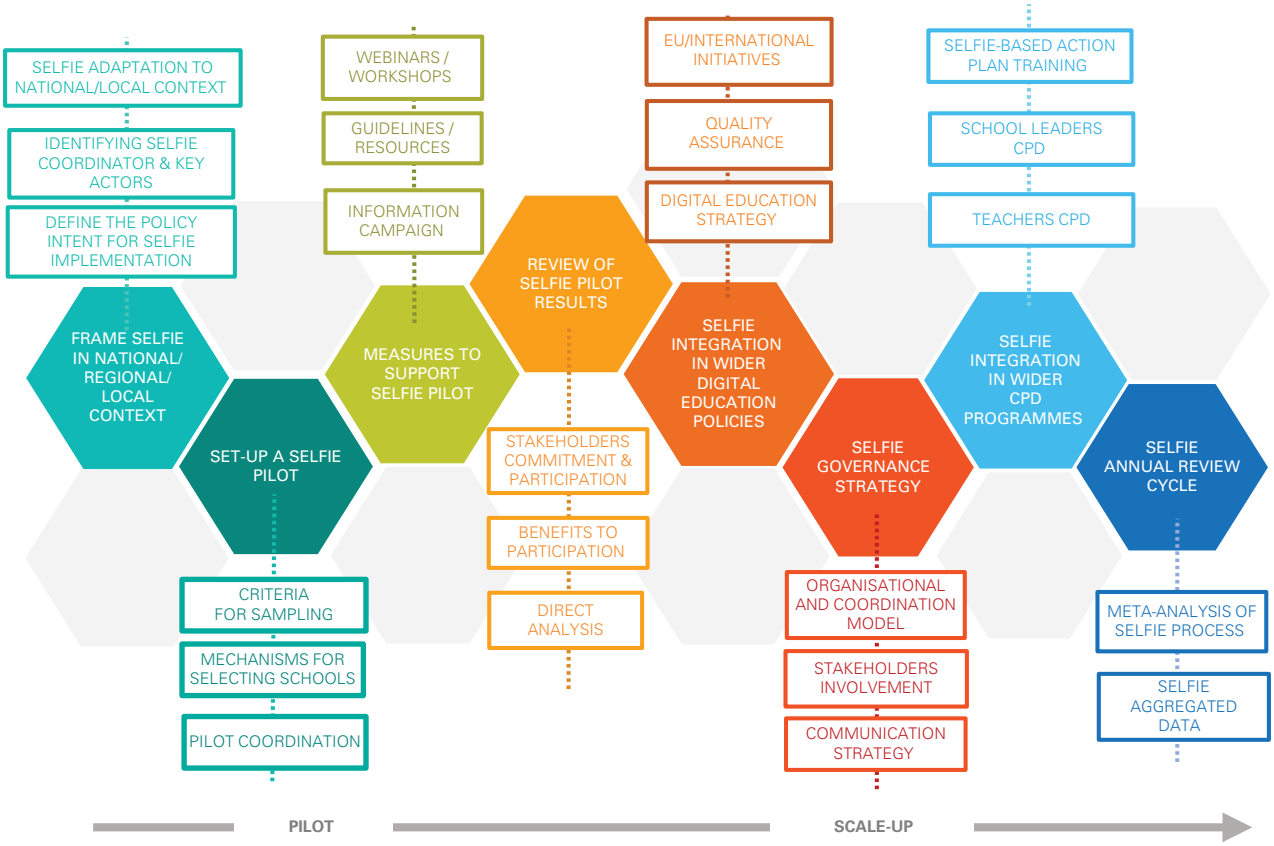
- The countries should cover a wide geographical spread.
- The countries should be investing in the reform of WBL systems.
- The countries should already be piloting or using SELFIE in general and vocational education.
- The educational authorities and other stakeholders should be available and willing to run the pilot.

The full reports of these four pilots are available on ETF Open Space SELFIE page at: SELFIE | Open Space (europa.eu).

3. METHODOLOGY

For the piloting of SELFIE WBL in the four ETF partner countries, a common reference methodology was applied, as described in the JRC and ETF (2021a) report *Scaling up and integrating the SELFIE tool for schools' digital capacity in education and training systems*. The methodology describes eight stages (Figure 3.1) from the initial purpose positioning for implementing SELFIE, through the pilot stage, to its scaling up for use in the national education system.

Figure 3.1: Main steps and key actions for integrating SELFIE into education systems



Note: CPD = continuing professional development.

3.1 Quantitative and qualitative data analysis

A key feature of SELFIE is the use of aggregated, anonymised data to provide an actionable report, at school and system level[2], on digital readiness to participating schools. The SELFIE WBL pilots exactly mirrored this. At system level, data from the questionnaires and qualitative research (open-ended questions, semi-structured interviews, case studies and, in one case, a snap survey) for each country was anonymised before being provided to the national coordinators for the purpose of analysing the outcomes.

The overall purpose and general objectives of the qualitative and quantitative analyses of the pilot outcomes can be summarised as follows:

- to identify if SELFIE WBL applies to national WBL/dual VET programmes, criteria and indicators;
- to identify the extent to which digital tools are used for WBL by students, VET institutions and companies;
- to identify possible deviation in some specific process, criterion and/or indicator in the user groups' responses;
- to identify whether/how SELFIE WBL needs to change to increase its usefulness to VET institutions and companies.

At system level, **quantitative data** is gathered from the numerical responses to the SELFIE WBL questionnaire, which, with one exception, uses a five-point Likert scale.

- **Assessment of the school[3] digital readiness, including WBL:** Scores out of 5 are given for questions on the eight SELFIE WBL areas, namely: assessment practices, collaboration and networking, continuing professional development, infrastructure and equipment, leadership, pedagogy: implementation in the classroom, pedagogy: supports and resources, and student digital competence.
- **Assessment of users' satisfaction with the SELFIE WBL tool:** Scores out of 10 are given in response to the question: 'If you were to review SELFIE WBL, what score would you give it out of 10?' Scores out of 5 are given in response to the question: 'How likely is it that you would recommend SELFIE WBL to a colleague?'

2. Given the limited size of the sample due the pandemic, the SELFIE WBL pilot outcomes are not representative of the national education and training systems of the pilot countries.
3. In Georgia, the word 'college' is used.

The JRC processes the anonymised, aggregated data and analyses it in various ways, producing graphs to show trends in the responses. These may include:

- mean scores per user group for questions in each of the categories;
- a comparison of scores for each area, revealing priority areas for improvement.

At system level, **qualitative data** is gathered from user responses to open-ended questions, interviews and focus groups.

Anonymous feedback from the questionnaires together with observations derived from the qualitative studies are analysed and then checked against the quantitative data of the different user groups to ensure its reliability.

3.2 Use of the SELFIE WBL report for schools and national stakeholders

As evidenced by some of the comments in the qualitative data for the pilot studies (cf. Serbia), the SELFIE WBL report for schools provides an opportunity for school principals, teachers and in-company trainers to get an overview of the digital readiness of their institution and to identify areas for improvement. The report is designed to be used as a basis for discussion by all stakeholders, and for the formulation of a digital action plan. Where policymakers support its scale-up and implementation, the process encourages self-guided action by schools to move towards greater digital capacity. The anonymised, aggregated data at national level can also be used by national stakeholders to gain an overview of the situation in the VET system as a whole.

4. IMPLICATIONS OF COVID-19

The SELFIE WBL pilots were conducted at a time of great uncertainty, amidst disruption caused by school and workplace closures, shifting term dates and the increased workload for staff and trainers adapting to remote teaching. The health crisis that began in early 2020 has accelerated the demand for the integration of digital technologies into education and training systems, and the digital capacity of these systems has therefore become a key challenge. Moreover, the ETF's mapping report *Distance digital learning during Covid-19 in ETF partner countries* (ETF, 2020) found that VET systems faced particular challenges in the rapid adoption of digital technologies where WBL involved practical hands-on skills in work settings.

Several of the schools and colleges taking part in the pilot reported difficulties in maintaining continuity with external teachers and trainers whose own workplaces were closed due to lockdowns. This manifested itself in an absence of responses to the SELFIE WBL questionnaire from the in-company trainers partnering certain schools (cf. Montenegro, where the findings of these schools were not included in the final data). This makes it all the more important for VET systems to have access to tools that will help them improve and monitor the use of digital technologies in WBL systems. The EU Council Recommendation on VET of 24 November 2020 (European Commission, 2020) stressed the importance of 'qualitative and effective digitalisation of VET provision in both school-based and work-based learning', recommending the use of European competence frameworks and self-assessment tools, such as SELFIE.

Despite the difficulties of conducting the pilots at this time, the participants in the four EU neighbourhood countries recognised the value of SELFIE WBL in the context of having to react swiftly to the new need for digital integration and monitoring of that process. A section of each country's report goes into detail about Covid-19 impact on WBL and the pilot process.

5. GENERAL FINDINGS FROM THE FOUR SELFIE WBL PILOTS

On the whole, the response to the SELFIE WBL tool was overwhelmingly positive, both in terms of its ease of use and its usefulness. Across the four countries, on a scale of 1 to 10 the average user satisfaction score for the SELFIE WBL tool was 7.4. Positive feedback was received on the methodology, the tool itself and support materials. Suggestions for small improvements repeated across several countries included making the questionnaire shorter and the questions clearer (from the student user group) and streamlining the process of obtaining the participation badge. The quantitative data showed a tendency for in-company trainers and school leaders to give higher scores than students and teachers. The option of including customised questions was not taken up by schools in all countries, though those that did reported this as a positive feature. It was clear from the qualitative analysis that the benefits of SELFIE WBL were recognised by all the stakeholders participating in the pilots, who in many cases urged policy support for the tool in their countries.

Education strategies in each of the countries give priority to digital innovation and would seem to support the widescale implementation of the self-assessment tool in vocational schools. Scale-up plans in each country are at different stages, with different ambitions and strategies, and must take account of a wide array of policy and systemic factors. The Multilingual webinar on SELFIE work-based learning in Montenegro, Serbia, Turkey and Georgia held on 4 December 2020 presented the preliminary findings from the four countries and provided an opportunity to compare and discuss challenges and enablers.

The findings from the SELFIE WBL pilots in Georgia, Montenegro, Serbia and Turkey are summarised at the end of each country chapter in this report.

6. SELFIE WBL PILOT IN GEORGIA[4]

Figure 6.1: Key figures from the quantitative analysis

83% Overall mean satisfaction rate with **SELFIE WBL** tool

78.4% Of respondents gave **4/5 or 5/5** for 'assessment practices using digital technology' (the category with the lowest score overall)

94.5% Of in-company trainers gave high scores for 'communication between the college and the company using digital technologies', but only **76.4%** of teachers

85.7% Of students indicated that they bring and use their own devices in lessons, while results showed **0%** of school leaders were aware of this

14% Of in-company trainers did not respond to the question about their company's involvement in the VET institution's digital strategy

4. This chapter draws on JRC and ETF (2021b).

Central policymakers and VET institutions are ready to invest their time and effort to make the SELFIE WBL tool a part of their digital strategies and policies.

6.1 Background: policy context

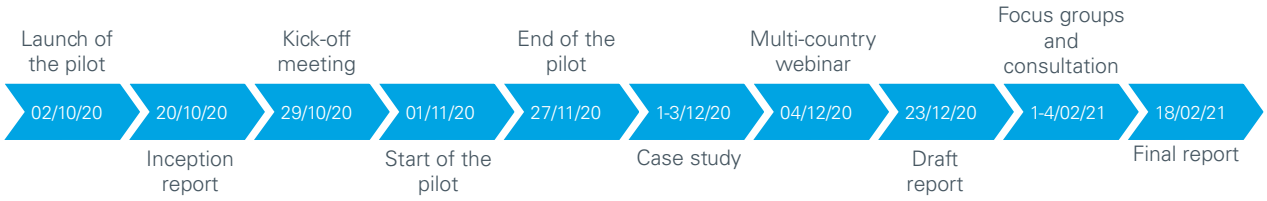
Georgia's VET Development Strategy 2013–2020 (MoES, 2013) emphasises increasing the involvement of the private sector via WBL. Reforms from 2016 introduced the concept of dual VET, based on the German model of technical VET. At the time of the pilot 17 VET institutions were implementing 30 dual programmes. Another milestone has been the introduction of competence-based modular curricula covering all VET programmes since 2019. While VET enrolments have continued to fall over the past five years, the percentage of students in dual VET has risen to 6% of all VET students, suggesting that the policy is increasing the attractiveness of VET.

At the central policy level, digital education is led by the Georgian Ministry of Education and Science (MoES). In the VET sector, however, digital skills and competences and digital learning initiatives are mainly supported by donor programmes and private companies.

SELFIE was piloted in Georgia in 2019/20 through an Estonian Development Cooperation project involving 120 schools. The MoES plans a larger pilot under the New School Model reform programme, assigning SELFIE trainer roles to 24 ICT trainers to serve 315 schools. The ETF and the JRC trained the SELFIE trainers in October 2020.

6.2 Pilot implementation

Figure 6.2: Timeline of the Georgia pilot



As the dual VET system is relatively new to Georgia, the selection of schools was somewhat limited. All but two of the existing schools offering dual VET took part in the pilot; the two schools that did not take part had not completed a whole year of dual VET. This small pool of schools also meant that the pilot could not concentrate on a single economic sector but included several priority sectors for growth in the country. Some schools had only one partner company. Others selected one company in consultation with the SELFIE national coordinator.

Table 6.1: VET institutions' size, location and dual programme areas

No. of VET institutions	No. of regions	School size			Location		Geographical coverage			Programme area							
15	8	S	M	L	U	R	E	W	S	A	TL	TE	TC	AT	HW	S	BIZ
		10	4	1	14	1	9	5	1	4	2	3	5	0	0	1	0

Notes: S = small, M = medium, L = large; U = urban, R = rural; E = east (includes regions of Kakheti, Shida Kartli, Mtskheta-Mtianeti and Kvemo Kartli), W = west (includes regions of Adjara, Guria, Samegrelo-Zemo Svaneti, Racha-Lechkhumi and Kvemo Svaneti), S = south (includes region of Samtskhe-Javakheti); A = agriculture/food industry, TL = transportation and logistics, TE = technology and engineering, TC = tourism and catering, AT = art and design, HW = health and welfare, S = services, BIZ = economics and business.

Table 6.2: Size of partner companies and economic sector

No. of companies	No. of regions	Company size				Economic sector							
15	8	Micro	S	M	L	A	TL	TE	TC	AT	HW	S	BIZ
		0	8	4	3	4	2	2	6	0	0	1	0

Notes: micro = 0 to 9 employees, S (small) = 10 to 49 employees, M (medium) = 50 to 249 employees, L (large) = 250 or more employees; A = agriculture/food industry, TL = transportation and logistics, TE = technology and engineering, TC = tourism and catering, AT = art and design, HW = health and welfare, S = services, BIZ = economics and business.

6.3 Findings from the anonymised quantitative and qualitative pilot outcomes

Anonymised aggregated data was processed, cleaned and reformatted to enable specific analyses to be made. In total 209 responses were received from 11 VET institutions with at least 1 in-company trainer participating.

The overall average score of the respondent groups was high, ranging from 4.13 to 4.44 out of 5. School leaders were the most critical group, and students and in-company trainers the most positive. Figure 6.3 shows the incidence of high scores for each of the eight questionnaire areas.

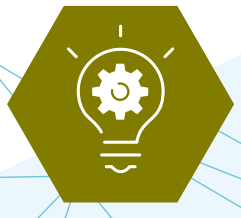
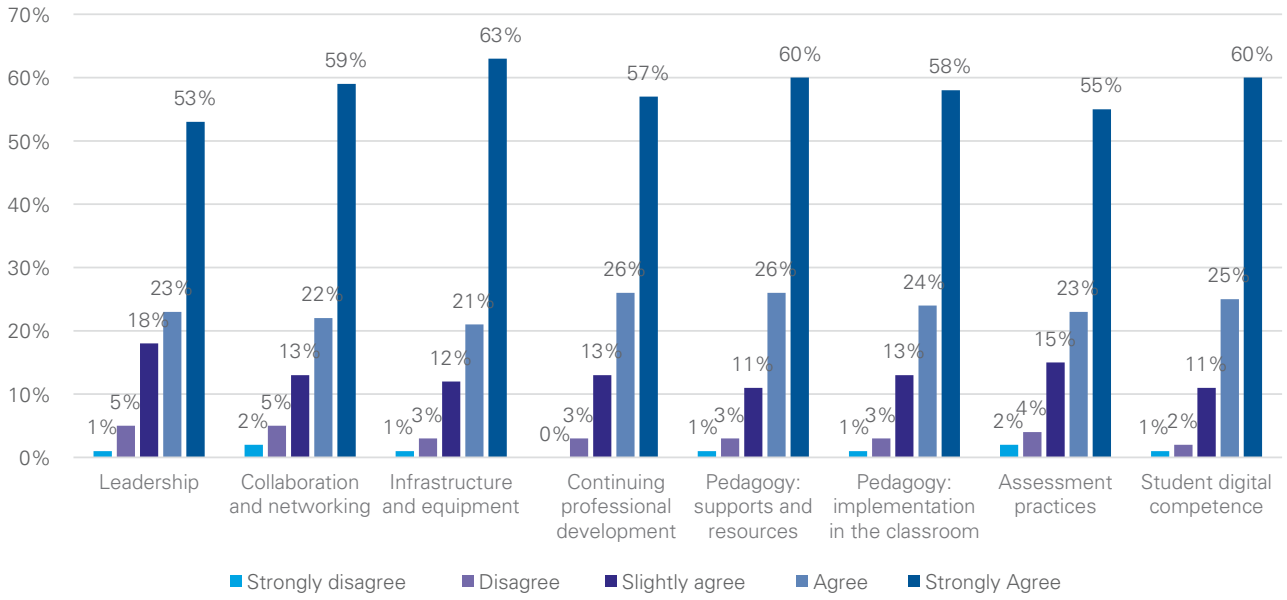


Figure 6.3: Frequency distribution for answers per SELFIE WBL area



One interesting observation by the Georgia team on the quantitative analysis is that non-applicable (N/A) answers to questions can provide insight into the critical areas that are least understood. For example, 14% of in-company trainers put N/A to the question regarding their companies' involvement in the partner colleges' digital strategy development, suggesting that there is no joint development of the digital strategy.

Satisfaction with the SELFIE WBL tool

Quantitative analysis of the usefulness of the SELFIE WBL tool was done through two questions: (1) If you were to review SELFIE, what score would you give it out of 10?; and (2) How likely is it that you would recommend SELFIE to a colleague? (scale of 1–5). The outcomes from the first question are summarised in Table 6.3.

Table 6.3: Average scores per user group for satisfaction with SELFIE WBL

If you were to review SELFIE, what score would you give it out of 10?				
	School leaders	Teachers	In-company trainers	Students
Number of observations	30	72	19	78
Mean	8.033	8.431	8.158	8.372
Standard deviation	1.650	1.806	1.922	2.102

Qualitative results

The Georgia pilot based its qualitative research on responses to open-ended questions in the questionnaire, a case study and a snap survey of SELFIE WBL coordinators.

For the **case study**, semi-structured interviews were conducted with a VET college principal, a SELFIE coordinator, a teacher, an in-company trainer and two VET students in a single VET institution. According to the findings, teachers are positive and welcoming towards assessment of the use of digital technologies in VET, but switching to emergency remote teaching has revealed gaps in the basic digital competences of teachers and some students. The teacher recommended training in basic digital skills for teachers, including managing internet communication platforms such as Zoom and Teams. The students (both of whom were graduates from higher education institutions who considered the dual education programme useful for finding a job) said that they appreciated the opportunity to provide feedback and had discussed the SELFIE experience with other students in social media groups. Other findings were that school leaders' views differ significantly from those of teachers and students in certain areas, providing ground for discussion. Assessment practices of students' work using digital tools and technology was named as one of the most problematic areas.

The only group that provided narrative anonymous answers to **open-ended questions** in the SELFIE WBL questionnaire were students. Several of them focused on identifying the infrastructure and equipment needs of the colleges, while others underlined the importance of assessing students' digital competences and those of the partner company.

The **snap survey** of SELFIE WBL coordinators revealed a more critical dimension than the quantitative data (average score of 3.41/5 for the relevance of the exercise). In answer to the question 'What useful information did you get from the SELFIE report?', several respondents mentioned the deviation of views of different groups, the opportunity to get a snapshot of the situation in the partner company, and the need to improve colleges' digital infrastructure and digital competences.

6.4 Next steps and the way forward

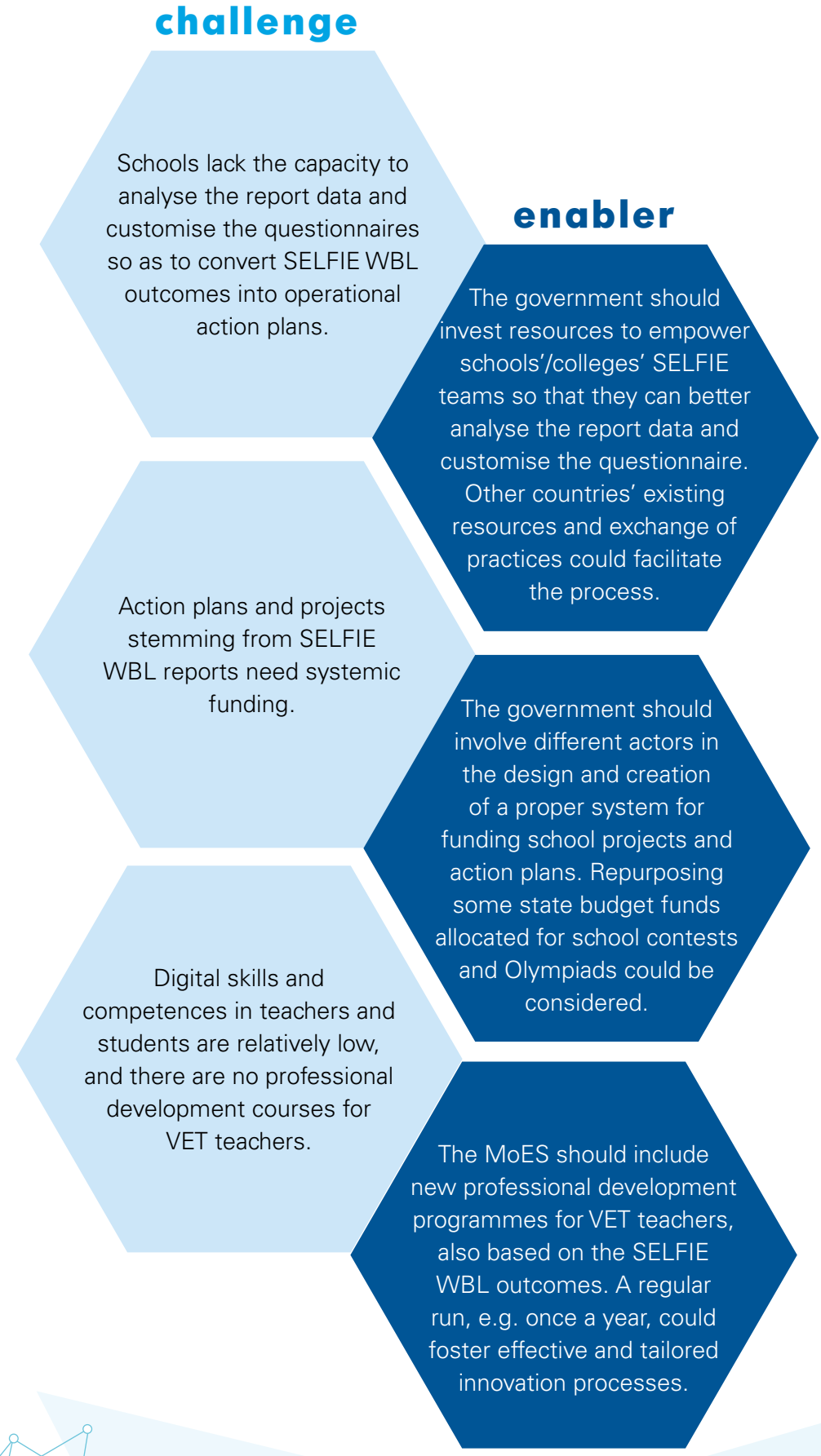
At the MoES level, there is clear support and readiness to discuss and consider SELFIE WBL in the policy and strategy measures that are under development, e.g. by including SELFIE ecosystem development into the forthcoming 2021–2027 VET Strategy.

The MoES plans to create a Skills Agency focusing on the digital transformation, assessment and development of the WBL system. This multi-level coordinating body could be the best way to ensure effective communication and implementation of SELFIE WBL-related policies and practices, including among the business community.

Seeking better interaction with the general education digital transformation strategies could lead to harmonisation of the initiatives under the overall portfolio of the MoES. For example, ICT trainers delivering SELFIE training to general education schools in the New School Model could be employed for capacity-building initiatives in the VET sector.

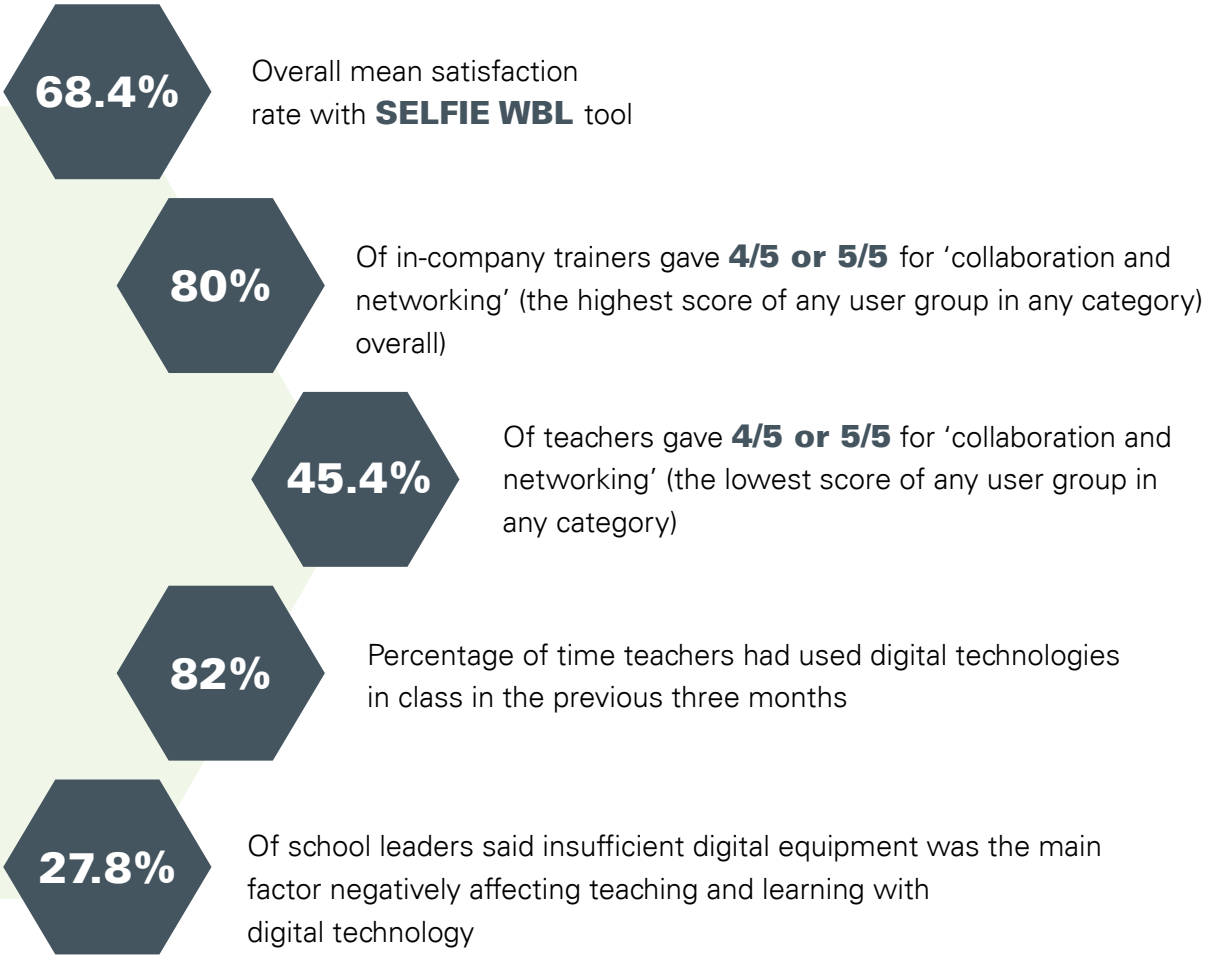
It is feasible to consider SELFIE WBL as complementary to the mandatory self-assessment process for VET colleges (once every three years), and to seek its adoption as a major tool for developing decentralised leadership in digital transformation.

6.5 Challenges and enablers for SELFIE WBL scale-up in Georgia



7. SELFIE WBL PILOT IN MONTENEGRO[5]

Figure 7.1: Key figures from the quantitative analysis



5. This chapter draws on JRC and ETF (2021d).

All the key actors, especially in-company trainers, recognised the high potential and value of SELFIE WBL for self-reflection.

7.1 Background: policy context

Montenegro has made progress in the alignment of vocational education with the needs of the labour market. In the Strategy for the Development of Vocational Education in Montenegro 2015–2020, the introduction of practical training with employers was defined as a priority for boosting the efficiency and effectiveness of vocational education, and the dual model of education was introduced into the three-year secondary VET in 2017/18.

Further improvement of dual VET is a strategic priority of the government in the upcoming development period (2020–24), with a special emphasis on a greater involvement of business associations in practical training. The action plan for the implementation of the Strategy for the Development of Vocational Education 2020–2024 (MoESCS, 2019) also envisages 'ensuring and improving the quality assurance system in vocational education at the national and school level, in accordance with the European Quality Assurance in Vocational Education and Training (EQAVET) framework, [and] implementation of [the] SELFIE survey in VET schools'.

Montenegro has made a lot of progress with SELFIE, with a further strong commitment to a comprehensive application of SELFIE WBL to involve in-company trainers. During the school year 2019/20, all the schools with VET educational programmes successfully used SELFIE. Consequently, every vocational school, mixed education school and education centre in the country has operational SELFIE school teams and experience in using SELFIE.

7.2 Pilot implementation

Figure 7.2: Timeline of the Montenegro pilot

The pilot was conducted with vocational schools providing WBL in the tourism and hospitality sector, which offered a selection base of around 35 eligible schools. An initial online meeting was held with candidate schools to determine their readiness to participate, resulting in a final list of 12 schools. The geographical distribution of the schools represented all three of the country's regions equally. All schools and related companies were located in urban areas, since there were no eligible schools in rural areas.

Table 7.1: Summary of vocational schools involved in the pilot

No. of schools	No. of regions	Size			Location		Region		
		Small	Medium	Large	Urban	Rural	Northern	Central	Southern
13	3	3	8	2	13	0	5	4	4
		23.1%	61.5%	15.4%	100.0%	0.0%	38.5%	30.8%	30.8%

Notes: small = up to 500 learners, medium = between 500 and 1 000 learners; large = over 1 000 learners; urban = over 300 inhabitants per km² and a population of 5 000 and over, rural = up to 299 inhabitants per km² and a maximum population of 4 999.

Table 7.2: Summary of companies involved in the pilot

No. of companies	Size				Location	
	Micro	Small	Medium	Large	Urban	Rural
30	5	14	8	3	30	0
	16.7%	46.7%	26.7%	10.0%	100.0%	0.0%

Notes: micro = 0 to 9 employees, small = 10 to 49 employees, medium = 50 to 249 employees, and large = 250 or more employees; urban = over 300 inhabitants per km² and a population of 5 000 and over, rural = up to 299 inhabitants per km² and a maximum population of 4 999.

7.3 Findings from the anonymised quantitative and qualitative pilot outcomes

The complex situation caused by Covid-19 at the time of the pilot resulted in difficulties in engaging and communicating with in-company trainers at businesses that were temporarily closed. As a result, five of the schools conducted the pilot without in-company trainers. Only the results from the seven schools that included in-company trainers were included in the analysis.

A detailed analysis of the anonymised quantitative data revealed considerable differences in the perception of digital readiness in the key areas, according to the user group. Teachers and students gave their highest rating in the area of 'pedagogy: supports and resources', while

school leaders gave theirs to 'continuing professional development' and in-company trainers rated 'infrastructure and equipment' most highly. The lowest scores from teachers were for 'collaboration and networking', while for students and school leaders it was 'assessment practices', and for in-company trainers 'leadership'.

Table 7.3: Average scores by area and user profile

Area	School leaders			Teachers			Students			Trainers*		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Infrastructure and equipment	19	3.47	0.87	213	3.44	0.86	1 047	3.47	1.09	20	4.19	0.65
Leadership	19	3.50	0.86	198	3.53	0.95				20	3.45	1.10
Collaboration and networking	19	3.62	0.74	198	3.60	1.00	1 102	3.62	1.33	20	3.95	1.00
Continuing professional development	19	4.21	0.60	198	3.99	0.83				20	3.98	0.85
Pedagogy: supports and resources	21	3.92	0.72	213	4.06	0.76	1 161	4.00	1.18	20	3.70	0.97
Pedagogy: implementation in the classroom	21	3.55	0.75	213	3.83	0.83	1 047	3.58	1.04	20	4.15	0.87
Assessment practices	19	3.31	0.98	198	3.70	1.02	1 024	3.44	1.12	20	3.85	1.04
Student digital competence	21	3.92	0.66	213	3.94	0.86	988	3.66	1.08	20	3.93	0.93

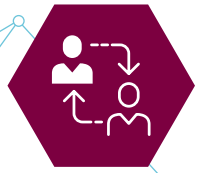
Notes: *schools that included in-company trainers; N = number of observations, M = mean, SD = standard deviation.

Satisfaction with the SELFIE WBL tool

Satisfaction with SELFIE WBL was rated on a 10-point scale. The average satisfaction of respondents with SELFIE WBL was 6.84. The data analysis showed that school leaders and in-company trainers rated SELFIE higher than teachers and students. Students had the least positive attitude toward SELFIE testing, but still gave the highest rating to SELFIE WBL most frequently.

Table 7.4: Average scores per user group for satisfaction with SELFIE WBL

	School leaders	Teachers	Students	Trainers
No. of observations	21	210	1 137	19
Mean	7.62	7.21	6.75	7.74
Standard deviation	1.75	2.18	2.56	1.82



Qualitative results

The qualitative analysis of **open-ended questions** in the SELFIE WBL questionnaire showed that most of the key actors regarded SELFIE WBL as very well structured. Some comments mentioned the fact that SELFIE did not give students an opportunity to comment on specific school problems regarding ICT and WBL and that they would like to be able to suggest solutions or provide additional explanations for their ratings. This indicates that they were not aware that the SELFIE tool provides an opportunity for schools to create and add up to 10 custom open-ended questions.

Recommendations focused mainly on the need for additional support in the follow-up phase, especially to prepare and implement an action plan.

The **case study** provided a clear, well-structured, objective narrative of the experience of the selected institution during the pilot phase. Major emphasis was put on the process followed to engage students, teachers and companies and on feedback regarding the usefulness of the SELFIE WBL tool and the need for innovation.

7.4 Next steps and the way forward

At present, Montenegro is actively preparing to develop a national digital education strategy. As part of the process, SELFIE (including SELFIE WBL) will be formally integrated into the strategy as a clearly recognised contribution to the education system.

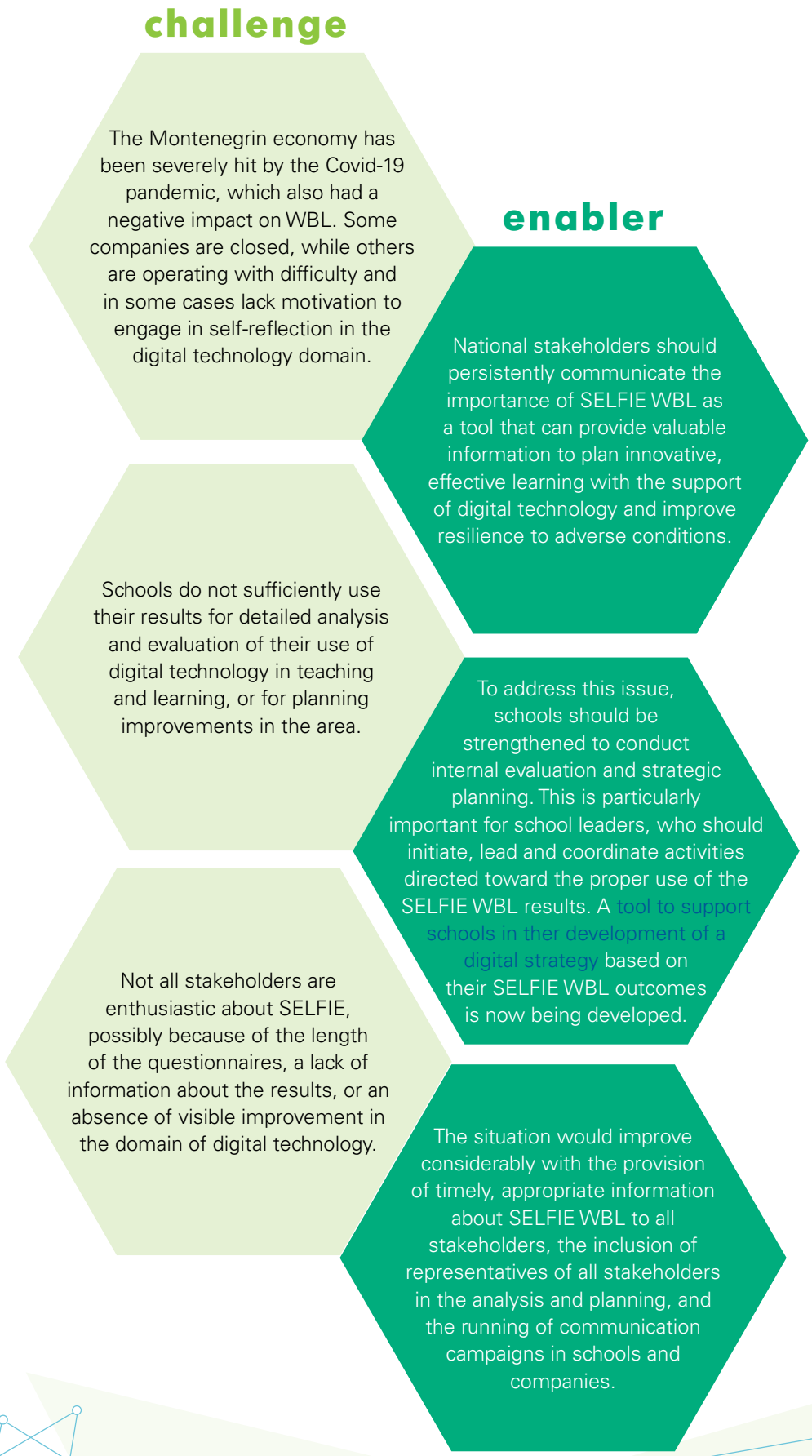
SELFIE is already included in the Strategy for the Development of Vocational Education 2020–2024 (MoESCS, 2019). The associated action plan needs to be updated to include SELFIE WBL and recognise it as a tool for the improvement of WBL in schools and companies.

An annual internal evaluation is obligatory for all vocational schools, monitored by the Centre for Vocational Education (VET Centre). The VET Centre could adapt the methodology of school self-evaluation to include SELFIE WBL, which is already largely compatible with the existing methodology.

The existing SELFIE national governance strategy has proved to be successful and proactive. The SELFIE national coordinator, who is based in the IT department of the Ministry of Education, Science, Culture and Sports (MoESCS), should also coordinate the scaling up of SELFIE WBL. The network of school coordinators should be further supported and they should be put in charge of SELFIE WBL at the level of educational institutions.

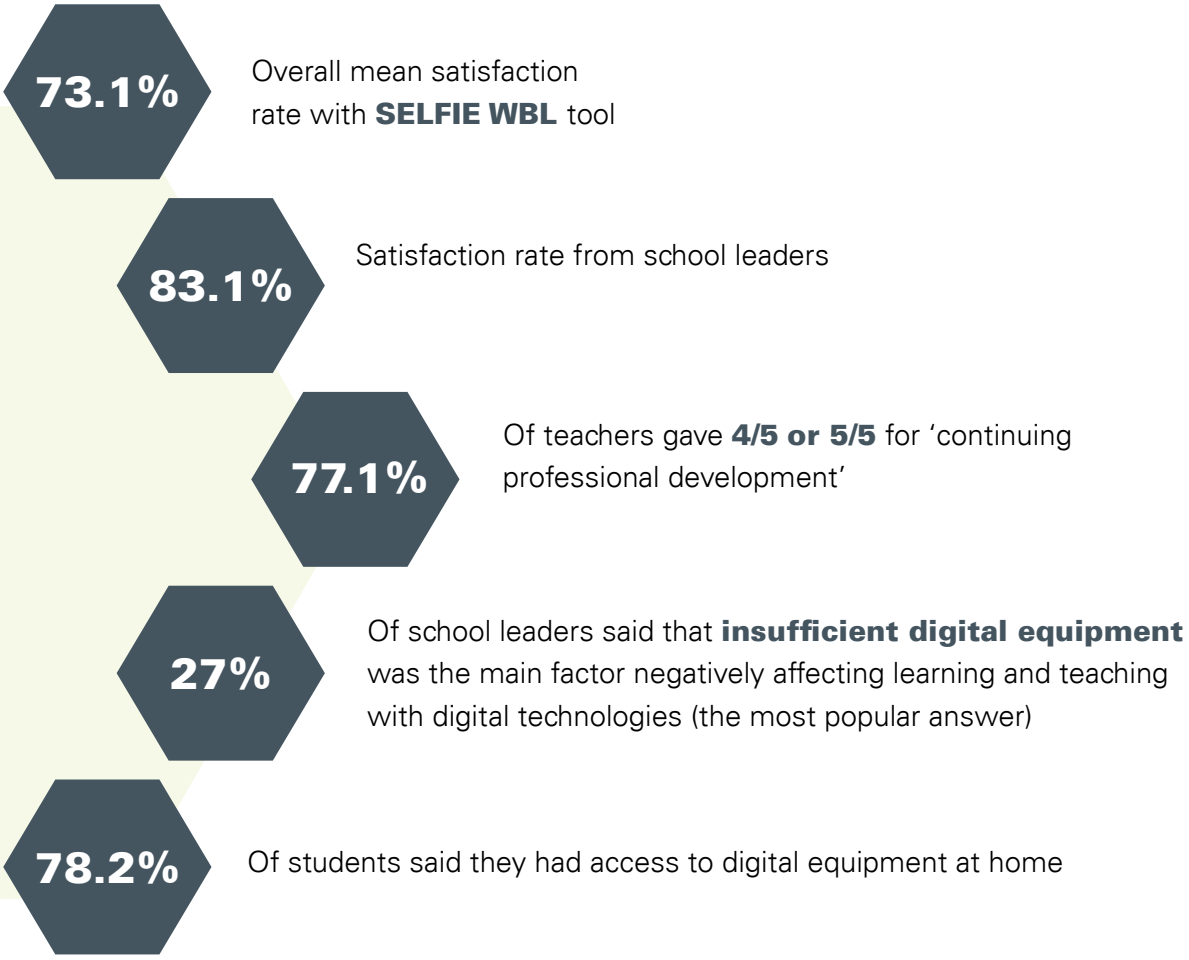
The existing MoESCS training programme for the SELFIE tool can be the basis of teacher training in the SELFIE WBL tool. In addition, the MoESCS and Unicef's Learning Passport initiative, which starts in the new school year, can incorporate self-paced online training in SELFIE WBL.

7.5 Challenges and enablers for SELFIE WBL scale-up in Montenegro



8. SELFIE WBL PILOT IN SERBIA[6]

Figure 8.1: Key figures from the quantitative analysis



6. This chapter draws on JRC and ETF (2021c).

The fact that a similar tool does not exist in the country is a valid argument for the broader adoption of SELFIE WBL in the national education system.

8.1 Background: policy context

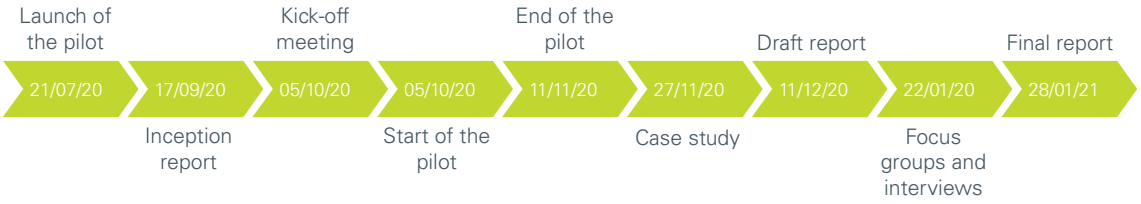
Serbia's draft Strategy for Education until 2030, developed through the EU support to Reform of Education in Serbia – REdiS 2030 project, builds on the progress already made in VET reforms by calling for an expansion of the existing dual education programme and the introduction of quality indicators for higher education institutions.

Serbia was the first country in the region to pass a law on WBL in 2017, the Law on Dual Education (MoESTD, 2017), whose full implementation began on 1 September 2019. This law regulates all participants' rights and obligations and entrusts the employer with the responsibility and role in educating students with the competence necessary to work in the target occupation.

WBL development is conducted by the Ministry of Education, Science and Technological Development (MoESTD), in cooperation with the Serbian Chamber of Commerce, often supported by donors. Currently, around 4 500 students take part in WBL in cooperation with 600 companies – this accounts for approximately 10% of secondary vocational education and is on a growth trajectory. In 2017, 61 schools took part in the SELFIE pilot, resulting in positive feedback from schools, which perceived the SELFIE tool and report as a useful roadmap for further development.

8.2 Pilot implementation

Figure 8.2: Timeline of the Serbia pilot



The MoESTD selected the ICT sector for piloting SELFIE WBL, since this is one of the most important sectors in the country. In this sector WBL is clustered around five educational profiles: (1) information technology electrician, (2) air traffic information systems communication technician, (3) digital graphics technician, (4) mechatronics technician, and (5) technician for computer numerical control machines. Out of 120 vocational schools, 15 schools satisfied all the selection criteria and agreed to take part in the pilot.

Table 8.1: Vocational schools participating in the pilot

No. of schools	No. of regions	School size			Location		Geographical coverage					Programme area						
13	11	S	M	L	U	R	N	E	W	S	C	A	B	TE	TC	AT	HW	BIZ
		2	6	5	11	2	3	1	3	2	4	0	0	13	0	0	0	0

Notes: S = small, M = medium, L = large; U = urban, R = rural; N = north, E = east, W = west, S = south, C = central; A = agriculture/food industry, B = biotechnology, TE = technology and engineering, TC = tourism and catering, AT = art and design, HW = health and welfare, BIZ = economics and business.

Table 8.2: Companies participating in the pilot

No. of companies	No. of regions	Company size				Economic sector						
30	11	Micro	Small	Medium	Large	A	B	TE	TC	AT	HW	BIZ
		3	7	6	14	0	0	25	1	0	2	2

Notes: micro = 0 to 9 employees, small = 10 to 49 employees, medium = 50 to 249 employees, and large = 250 or more employees; A = agriculture/food industry, B = biotechnology, TE = technology and engineering, TC = tourism and catering, AT = art and design, HW = health and welfare, BIZ = economics and business.

8.3 Findings from the anonymised quantitative and qualitative pilot outcomes

Based on the SELFIE WBL pilot results in Serbia, the highest average score from all respondent types was received for the area of 'continuing professional development' (4.13), followed by 'pedagogy: supports and resources' (4.03), and 'collaboration and networking' (3.90). 'Assessment practices' received the lowest score (3.60). Figure 8.3 depicts the average score for all eight SELFIE WBL areas by user profile.

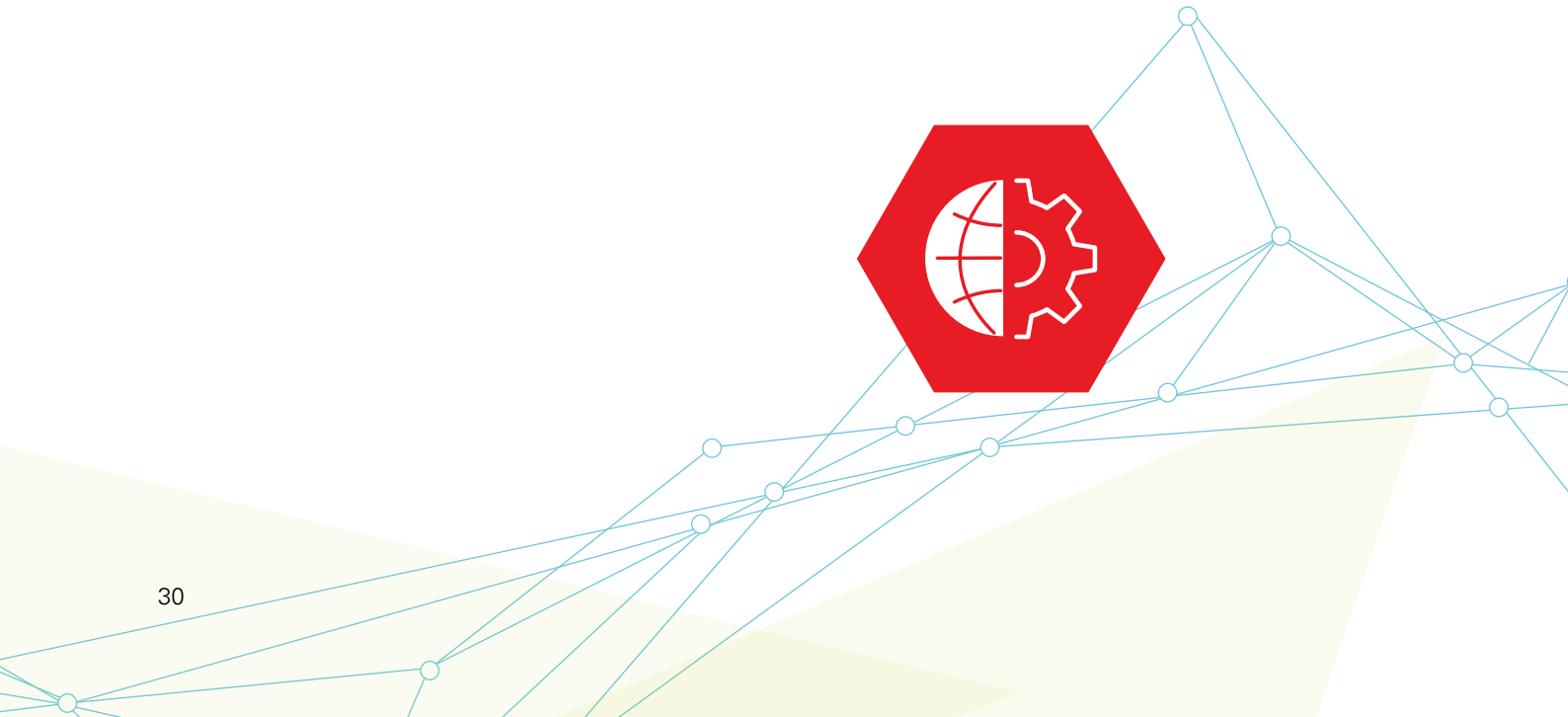
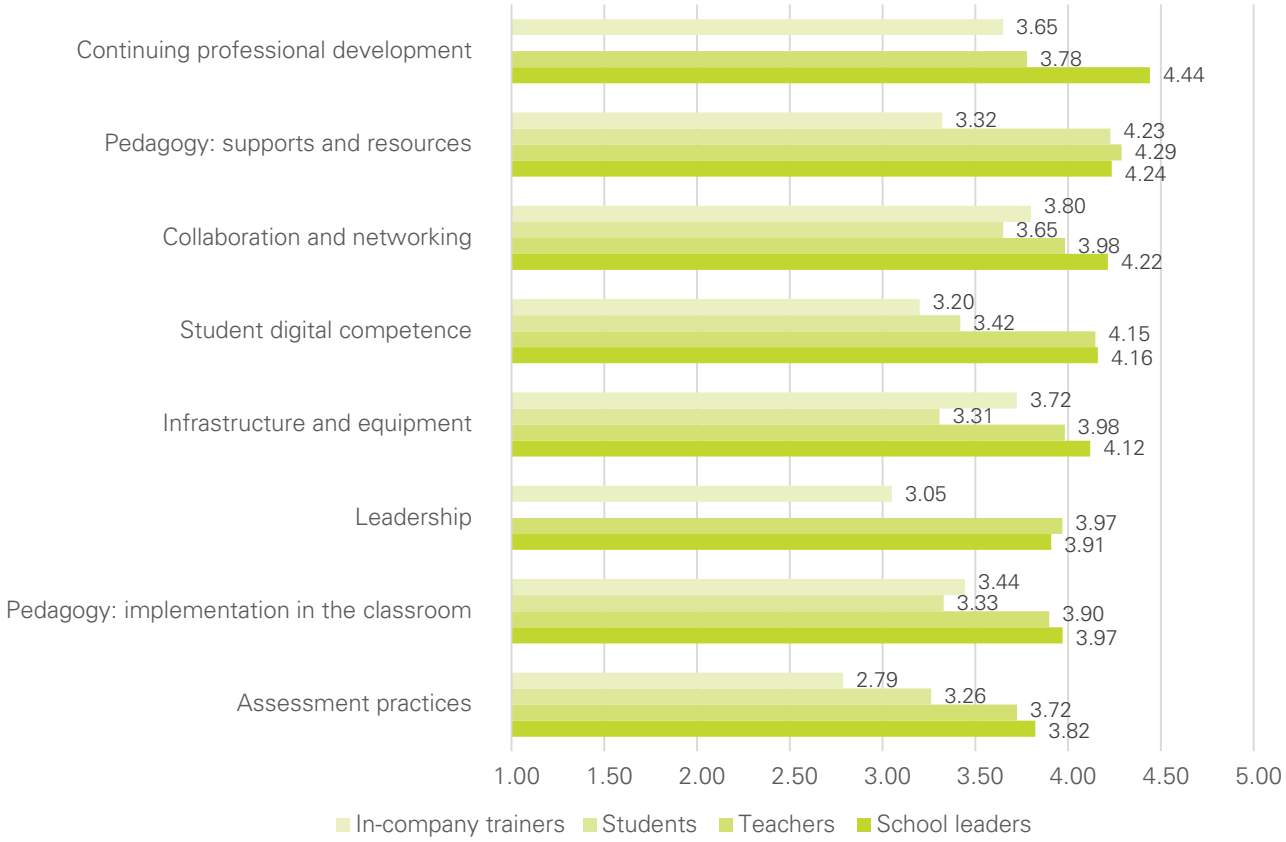


Figure 8.3: Average scores (out of 5) per user group for each of the SELFIE WBL areas

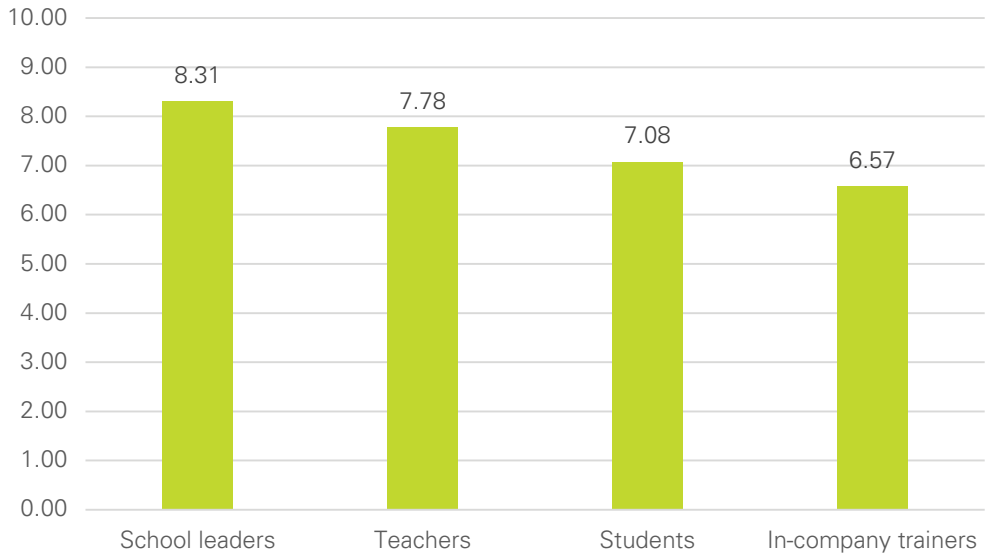


In the assessment of the use of digital technologies for innovative and effective learning, the highest score for all eight areas was given by teachers (4.18), following by school leaders (4.11), students (3.75) and in-company trainers (3.26).

Satisfaction with the SELFIE WBL tool

Based on the responses on a scale of 1 to 10, the average user satisfaction score for the SELFIE WBL pilot was 7.31. The highest satisfaction score was given by school leaders (8.31), followed by teachers (7.78) and students (7.08), with the lowest score reported by in-company trainers (6.57).

Figure 8.4: Average scores (out of 10) per user group for satisfaction with SELFIE WBL



Qualitative results

For the qualitative analysis an in-depth **case study** was conducted, involving five semi-structured interviews with users from different groups in the selected VET institution. Vlasotince technical school was chosen because it had the highest number of participants in the pilot: 16 school leaders, 23 teachers, 80 students and 9 in-company trainers.

All of the stakeholders interviewed agreed that the SELFIE WBL school report gave insight into the school's digital capacity level. One in-company trainer added that the report helped him better understand current practices related to planning students' learning in the company and to spot their weaknesses. Regarding plans for increasing the use of digital technology in the schools and companies, representatives stated that they obtained a clear picture that could be used to plan future actions, even though currently a lack of funds and relevant professional development are obstacles to implementation.

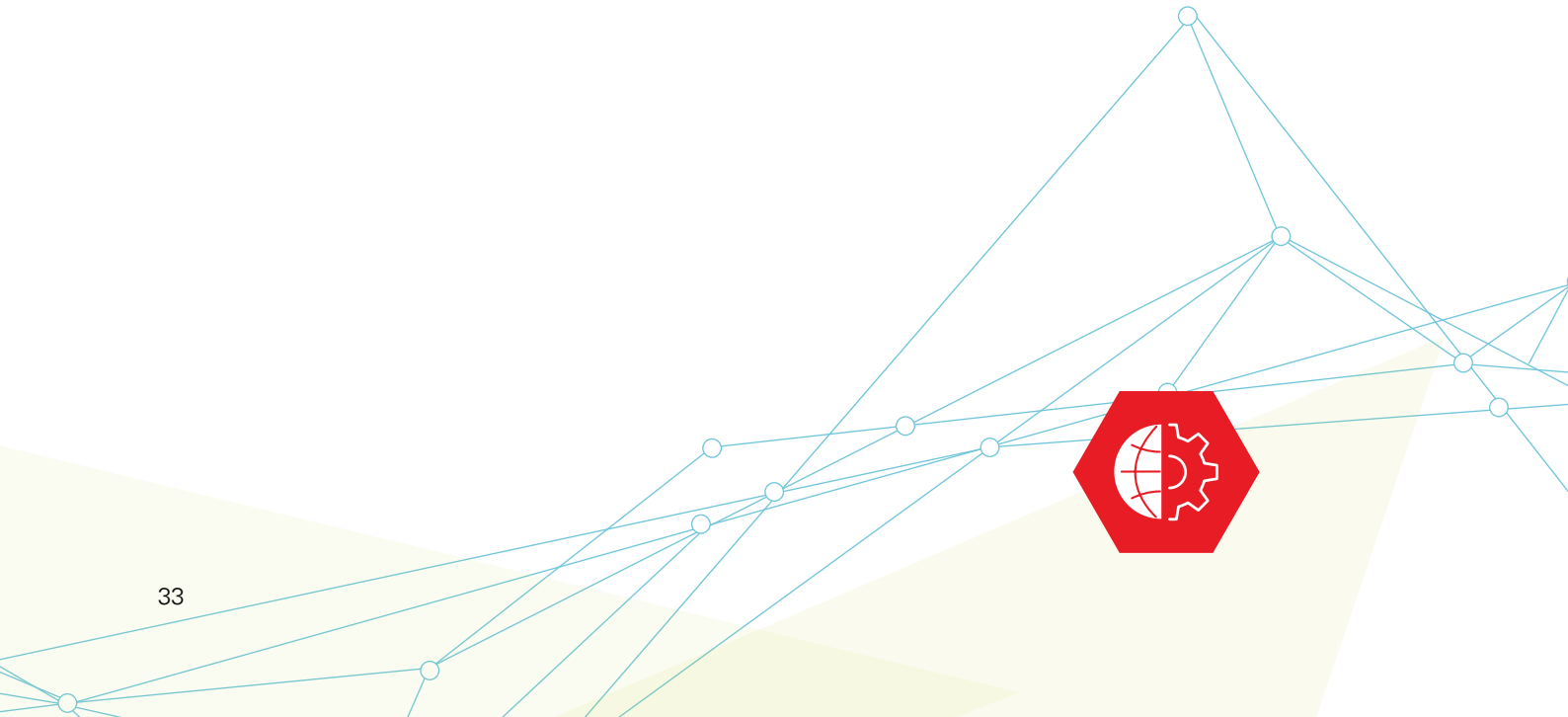
The school principal pointed out the benefits of SELFIE WBL's comprehensive approach: 'The SELFIE WBL self-evaluation was critical because all school system segments are included. […] We weren't paying attention to some segments and the SELFIE WBL school report pointed out those areas!' The inclusion of in-company trainers proved useful both for the school and the trainers themselves, one of whom said: 'The statements [in the SELFIE WBL school report] inspired me to make greater use of digital technology to organise work with students more easily and to prepare them for work in the company.'

8.4 Next steps and the way forward

SELFIE and SELFIE WBL are currently the only tools available in Serbia for measuring and supporting the development of digital competences in education nationwide. The MoESTD recognises SELFIE WBL as a useful and easy-to-use education policy tool that considers all relevant stakeholders in schools and companies: principals, teachers, students and in-company trainers. Therefore, the updated version of the SELFIE WBL tool will be launched in Serbia in 2021 and will be available for voluntary self-assessment by schools offering WBL.

SELFIE, including the WBL component, is mentioned in the Education Strategy up to 2030, which provides a concrete opportunity for scaling up this tool. The legal framework is already in place for integrating SELFIE WBL into the internal and external assessment of schools, and for use in the certification of in-company trainers. A necessary next step will be to develop a strategy on how to approach companies to invite them to take an active role in SELFIE WBL.

The implementation can be based on the existing SELFIE model and infrastructure. An effective communication strategy for SELFIE WBL, both for schools and companies, should be developed by a coordinating body that includes the MoESTD, the Institute for Education Quality and Evaluation (IEQE) monitoring body, and the Chamber of Commerce.



8.5 Challenges and enablers for SELFIE WBL scale-up in Serbia

9. SELFIE WBL PILOT IN TURKEY[7]

Figure 9.1: Key figures from the quantitative analysis

71.4% Overall mean satisfaction rate with **SELFIE WBL** tool

77.3% Satisfaction rate from in-company trainers (the most positive group)

78.6% Positive responses for 'pedagogy: supports and resources' (the area with the highest approval rate)

62.7% Positive responses for 'infrastructure and equipment' (the area with the lowest approval rate)

61.9% Of in-company trainers gave positive responses for 'leadership' – one of the few areas where this group did not give the highest scores among the groups

7. This chapter draws on JRC and ETF (2021e).

Participants pointed to the customisation of the questionnaire as one of the most promising strengths of SELFIE WBL.

9.1 Background: policy context

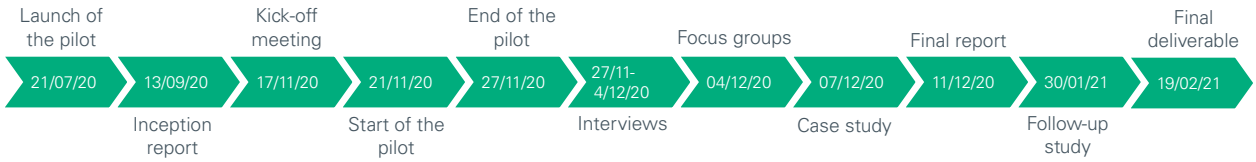
The development of digital skills for students and teachers in Turkey has been the focal point of several policy documents in recent years, including the Ministry of National Education (MoNE)'s Education Vision 2023 (MoNE, 2018). Covid-19 has brought this subject to the fore, and the vital importance of digital skills and competences has been acknowledged by all stakeholders. In Education Vision 2023, under 'Digital content and skills-backed transformation of the learning process', two main goals are stated: (1) An ecosystem will be created for development of digital contents and skills'; and (2) 'Content will be developed and teachers will be trained for the development of digital skills.'

The country has also embarked on a nationwide quality assurance system for VET institutions, launched by the Vocational and Technical Education Institutions Quality Assurance Directive of May 2019. This includes a self-assessment study to be carried out by all vocational schools once a year, whose results are accessible to the MoNE.

WBL is a crucial part of the Turkish VET system. According to the age of the student and type of VET institution, this ranges from holiday-period apprenticeships through to three-day in-company training weekly and full-time in-company training. As of the 2019/20 academic year, 25.25% of the students in secondary education institutions attend public VET institutions affiliated to the MoNE's Directorate General of VET.

9.2 Pilot implementation

Figure 9.2: Timeline of the Turkey pilot



Due the exceptional circumstances related to Covid-19, the MoNE decided to prioritise schools with an adequate ICT infrastructure for the pilot selection, from among the country's 4 470 vocational schools. For this reason, the WBL programmes are primarily in sectors related to ICT, though other sectors (automation, networks, electronics) were involved.

Table 9.1: Distribution of vocational schools

No. of schools	No. of regions	School size			Location		Geographical coverage					Programme area						
23	3	S	M	L	U	R	N	E	W	S	C	A	B	TE	TC	AT	HW	BIZ
		3	6	14	19	4	0	0	11	9	3	0	1	19	1	0	1	1

Notes: S = small, M = medium, L = large; U = urban, R = rural; N = north, E = east, W = west, S = south, C = central; A = agriculture/food industry; B = biotechnology; TE = technology and engineering; TC = tourism and catering; AT = art and design; HW = health and welfare; BIZ = economy and business.

Table 9.2: Distribution of companies

No. of companies	No. of regions	Company size				Economic sector						
28	3	Micro	Small	Medium	Large	A	B	TE	TC	AT	HW	BIZ
		0	20	5	3	0	3	20	2	0	2	2

Notes: micro = 0 to 9 employees, small = 10 to 49 employees, medium = 50 to 249 employees, and large = 250 or more employees; A = agriculture/food industry, B = biotechnology, TE = technology and engineering, TC = tourism and catering, AT = art and design, HW = health and welfare, BIZ = economy and business.

9.3 Findings from the anonymised quantitative and qualitative pilot outcomes

A total of 8 707 users submitted responses to the questionnaire, of whom 7 301 were students.

The anonymised pilot data for Turkey showed that the area with the highest percentage of positive responses was 'pedagogy: supports and resources' (78.6%), followed by 'student digital competence' (69.3%), 'collaboration and networking' (67.7%) and 'pedagogy: implementation in the classroom' (66.1%). The lowest percentage of positive responses was given for 'infrastructure and equipment' (62.7%).

Overall, school leaders and in-company trainers had the greatest tendency to give high scores and teachers and students lower ones, except for the two pedagogy questions, which the teachers rated highly.

Table 9.3: Mean scores (out of 5) by participants for each area of inquiry

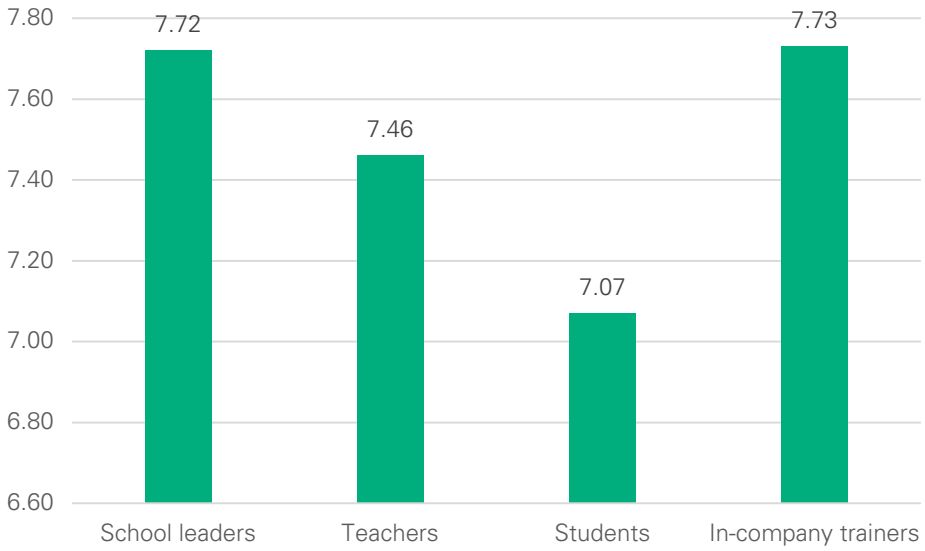
Area	No. of observations	Mean	Standard deviation
Infrastructure and equipment	8 684	3.72	1.05
Leadership	1 335	3.79	1.04
Collaboration and networking	8 616	3.94	1.21
Continuing professional development	1 331	3.82	1.02
Pedagogy: supports and resources	8 609	4.17	1.12
Pedagogy: implementation in the classroom	8 590	3.87	1.02
Assessment practices	8 584	3.78	1.07
Student digital competence	8 585	3.94	1.00

Note: Overall responses.

Satisfaction with the SELFIE WBL tool

The analysis of the quantitative data showed that the average satisfaction score for the SELFIE WBL tool across all groups was 7.14 out of 10. The highest satisfaction scores were registered by the in-company trainers (7.73) and school leaders (7.72), followed by teachers (7.46) and students (7.07).

Figure 9.3: Average scores (out of 10) per user group for satisfaction with SELFIE WBL



Qualitative results

To gather qualitative information, the Turkish pilot used **semi-structured interviews** with a selection of 7 school coordinators, 11 teachers and 5 in-company trainers, a **focus group** of 1 school leader, 1 school coordinator and 1 teacher, and a **case study** involving all stakeholders at a single school.

Analysis of the qualitative data revealed that all stakeholders found SELFIE WBL useful and were likely to use it in the future. Participants pointed to the customisation of the questionnaire as one of the most promising strengths of the SELFIE WBL tool.

Participants appreciated the SELFIE WBL reports as a way for stakeholders to jointly discuss and understand their strengths and weaknesses in terms of digital integration. A school leader said: 'It was determined that the digital tools put into practice by the school administration were not sufficiently understood and used by teachers and students.' A teacher stated that: 'This survey let us see for ourselves. It is necessary not to fall behind in technology but to benefit positively from digital technology in every field.' While an in-company trainer commented: 'In today's condition, the importance of technology and digitalisation is better understood. With the completion of this project, digitalisation in education will take a big step forward.'

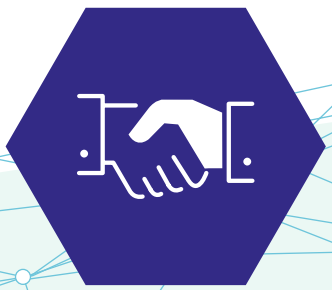
The result showed that SELFIE WBL enabled stakeholders to identify specific areas to prioritise and improve. For example, a teacher said: 'Considering the financial situation of our school, priority should be given to internet infrastructure and speed.'

9.4 Next steps and the way forward

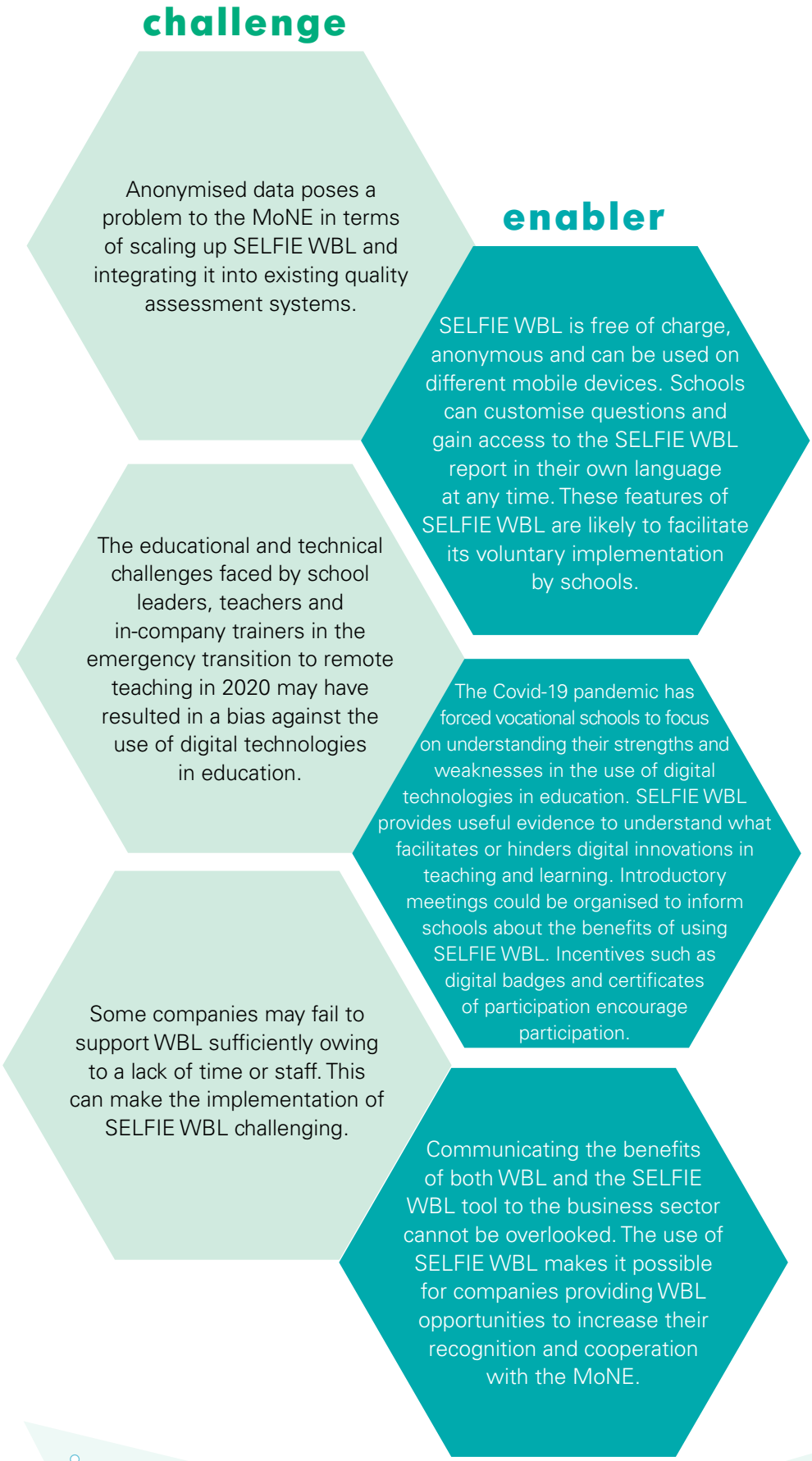
The MoNE recognises SELFIE WBL as a valuable tool for vocational schools to evaluate and monitor their use of digital technologies in learning, teaching and assessment voluntarily. In addition, as stated in the Education Vision 2023, the MoNE intends to establish an integrated educational data warehouse. Scaling up, therefore, depends largely on whether the MoNE can integrate SELFIE WBL with existing systems to provide usable data for the warehouse. As indicated by MoNE officials in the focus groups, such policy support would require access to the full, raw data, rather than the anonymised, aggregated data which is an essential feature of SELFIE WBL.

Despite this, the MoNE offered several pointers for how SELFIE WBL could be scaled up on a voluntary basis by schools, with links to its own tools. Among them:

- Schools could integrate the SELFIE WBL report into the annual strategic plans requested by the MoNE and obtain support from the MoNE based on SELFIE WBL results.
- National educational platforms could be used to inform user groups about SELFIE WBL and share experiences, practices and resources.
- The MoNE is prepared to integrate the anonymised and aggregated SELFIE WBL data into a learning management system that would offer continuing professional development opportunities based on the SELFIE WBL results.
- Schools could cooperate with the MoNE or the provincial directorate for national education to organise an external evaluation of their SELFIE WBL results (anonymised aggregated data), thus enriching the findings from self-reflection with further in-depth, actionable information.



9.5 Challenges and enablers for SELFIE WBL scale-up in Turkey



ABBREVIATIONS AND ACRONYMS

DigComp	European Digital Competence Framework for Citizens
ETF	European Training Foundation
EU	European Union
ICT	Information and communication technology
IT	Information technology
JRC	Joint Research Centre (European Commission's science and knowledge service)
MoES	Ministry of Education and Science (Georgia)
MoESCS	Ministry of Education, Science, Culture and Sports (Montenegro)
MoESTD	Ministry of Education, Science and Technological Development (Serbia)
MoNE	Ministry of National Education (Turkey)
SELFIE	Self-reflection on effective learning by fostering the use of innovative educational technologies [tool]
SELFIE WBL	SELFIE [tool] for work-based learning
VET	Vocational education and training
WBL	Work-based learning

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