





Implementation of the Serbian Law on Dual Education

Reflection Report: Drivers and Barriers in the Implementation Phase

Report

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List of Abbreviations

CCIS	Chamber of Commerce and Industry Serbia
CEP	Centre on Education Policy
ETH.....	Swiss Federal Institute of Technology, Zurich
LDE VET	Vocational education and training under Law on Dual Education
LDE.....	Law on Dual Education
LSE VET	Vocational education and training under Law on Secondary Education
LSE	Law on Secondary Education
MoESTD	Ministry of Education, Science, and Technological Development
QA.....	Qualifications Agency
RSA	Regional School Administration
VET.....	Vocational Education and Training
WBL	Work-based learning (under LDE VET)

Executive Summary

According to its transitional article, the Law on Dual Education (LDE) shall undergo a total revision following its initial implementation period. This report reflects on more than three years of research on the implementation of Serbia's LDE, combining that evidence with a consultation process involving Serbian stakeholders from the education and employment sectors. The evidence and recommendations presented here should guide and simplify the revision process undertaken by Serbia's stakeholders and legislators.

We develop twelve guiding principles for the revision based on research evidence and stakeholder feedback. Through multiple rounds of consultation with key stakeholders like the Ministry of Education, Science, and Technological Development (MoESTD), the Chamber of Commerce and Industry Serbia (CCIS), schools, employers, and donor partners, we refine the key principles and identify specific recommendations related to each principle. We have further validated those recommendations with leading stakeholders from the MoESTD and CCIS. The table below shows the resulting recommendations related to each of the validated guiding principles for the revision.

The specific recommendations we make often require choosing one side of a trade-off. In many cases there is sufficient evidence from Serbia and other countries to indicate that one choice is better for the system or for students than the other. For example, increasing work-based learning (WBL) to at least 25% (or ideally at least 60% as all top performing countries have) of total program time decreases students' classroom time, but evidence indicates that more WBL time improves students' ability to learn transferable or "soft" skills (Bolli & Renold, 2017) and leads to better post-graduation labor market outcomes (Bolli, Oswald-Egg, & Rageth, 2021). According to the cost-benefit analysis carried out as part of this study, increasing WBL time is also necessary for the LDE VET program to be sustainable for training companies. Although students have less classroom time with more WBL, the benefits outweigh the disadvantages.

The recommendations under principles (3) and (4) operate under similar logic. Although enforcing the LDE's key requirements may be initially challenging, consistent enforcement and the elimination of non-paid WBL (or any kind of non-paid training or professional practice in companies) creates consistency and makes the model more sustainable. As long as enforcement and implementation fidelity are inconsistent, employers will question whether they must make the changes required by the law. Ensuring those requirements are properly calibrated and enforcing them makes the model more consistent and high-quality for students and simplifies it for companies. Eliminating alternatives where companies can host students for WBL or similar training without paying remuneration or providing safety and quality protects students and the companies participating in the LDE VET model.

Principles (5) and (6) also work together to improve student's selection and enrollment experience while reducing complexity and costs for both schools and companies. Enhanced career guidance and counseling gives students and their parents access to the information they need to make informed choices. More-informed students, with the support of career guidance counselors, can move through a simplified online application process without compromising equity, fairness, or access. Employers save time that they would otherwise have to spend interviewing too many students or finding poor matches. Schools save the time they would have spent manually matching students and companies.

Principle (7) is focused on increasing permeability—the ability for students to pursue further education and training in the professional and academic pathways—which makes LDE VET more attractive and equitable for students while increasing companies' opportunities to earn returns on their training investments and attract the best students. When a program is a dead end or is otherwise cut off from any further education and training pathway, students will not choose the program for fear of closing a door they may want open in the future. A non-permeable program will also create equity issues if certain students are pushed into the program and then cut off from further opportunities. Finally, an employer wants to attract the best students so their interests are also best served by a program with many progression opportunities.

Principles (8) and (9) are both related to enhancing the employer role in the system. Principle (8) provides a way for very small companies to engage with LDE VET through training networks, providing access to companies from a large swath of the Serbian economy and giving students the training they need to potentially work in these companies—which may be the only ones in their area—without compromising any curriculum content or program quality. Principle (9) makes companies' engagement smoother while also creating a more formal role for the employer voice—in the form of CCIS—in the system.

Principles (10), (11), and (12) focus on continuous improvement, which is necessary for any modern education system. Although it would be ideal to create the perfect education and training program and then let it run, no modern education system can do so. The continued rapid pace of technological change requires that every education curriculum, program, and system continuously innovate and improve. Principle (10) sets aside funding to enable innovation, especially from the bottom where actors can see the need for adjustments in real time. Recommendation (11) puts in place the architecture for system-level monitoring that can capture problems with efficiency, effectiveness, and equity as quickly as possible. Finally, principle (12) focuses on an issue identified by the existing research monitoring LDE VET's implementation, prioritizing the first important step to make the program broader, more effective, and more equitable.

The guiding principles and specific recommendations related to each one are built from evidence on the first three years of LDE VET and stakeholder feedback and consultation. They provide a road map and a guide for the total revision of the LDE. The specific legislation, created by Serbian leaders, can use this information to focus on the highest priorities and most important changes for improving LDE VET for students, schools, training companies, and Serbia.

Summary of Recommendations by Principle	
General recommendations	
	<ul style="list-style-type: none"> • Distinguish between COVID-related difficulties and the normal procedure • Design regulations for the operational system, not the start-up phase. If necessary, add transitional articles dedicating extra resources and special procedures to the start-up phase.
1) Establish a leadership structure (commission) for system monitoring and improvement, including the education and employer sectors	
	<ul style="list-style-type: none"> • Establish a permanent leadership commission for dual education • Include CCIS and employers in the commission • Give the employment-sector actors more power in LDE VET
2) Increase in-company WBL to at least 25% (60%?) of total program time, defined in days, and with very little variation	
	<ul style="list-style-type: none"> • Key goal: Ensure ROI (or at least break-even) for all companies. WBL policies should flow from this goal. • Use a progressive model, with more WBL in later program years • One to two days (20-40%) of WBL in the first year prevents second-year occupation-switching and helps support ROI while giving students an easier transition. • In later years, three to four days of WBL (60-80%) aligns with international best practices, supports ROI, and helps students learn relevant skills • Students must be mostly doing productive work (not watching, practicing, etc.) while in WBL. This may happen automatically with increased WBL. • WBL time must be relatively consistent across schools and companies, depending on occupation.
3) Revise and enforce requirements for remuneration, compensation, contracts, insurance, etc. to ensure financial sustainability.	
	<ul style="list-style-type: none"> • Simulate ROI at different wage levels and progressive WBL models. • Enforce requirements for remuneration, compensation, contracts, etc. • Check existing insurance requirements and clarify plans.
4) Eliminate all non-paid WBL (LSE and public sector)	
	<ul style="list-style-type: none"> • Use a transitional article/sunset clause to phase out professional practice in companies in LSE VET by 2024 • Require remuneration for WBL in all occupations and industries, including the public sector
5) Match students with companies through an online platform and simplified enrolment process	
	<ul style="list-style-type: none"> • Simplify the enrollment process • Allow for the creation of an online platform for student-company matching
6) Improve career guidance and counseling	
	<ul style="list-style-type: none"> • Rethink how the career guidance and counseling system will work in the future, given the fact that it needs to operate in partnership with companies and support students before their transition into secondary education. • Establish career guidance centers outside schools to support all students and pathways in their choices without overloading schools with new duties. • Professionalize the WBL coordinator position, create specific training for that role and for career guidance and counseling.

<ul style="list-style-type: none"> • If career guidance and counseling will add to the RSA workload, they need more resources. • Post-COVID, consider whether more online information platforms can help students understand their options (company photos and videos, occupational information, sniffing/trial placement options)
7) Increase attractiveness by adding provisions for permeability into the law
<ul style="list-style-type: none"> • Discuss with CCIS and professional associations: what are career paths within companies? How do companies see people progressing within occupations/occupational clusters? • Identify opportunities for Professional Education and Training (PET), applied degrees, etc. • Ensure 1) Further formal qualifications from all starting points and 2) clear transitions across levels and types as defined by the NQF • A highly permeable system offers PET (non-university tertiary) options up to NQF level 8. • When developing LDE profiles, various options for further education and/or training should be considered and shown.
8) Regulate training alliances among employers (especially SMEs)
<ul style="list-style-type: none"> • Add an article to the LDE that allows for and regulates training alliances, possibly through a specific bylaw.
9) Increase support to CCIS and improve processes for trainer training, company certification, and training alliances
<ul style="list-style-type: none"> • Adjust the LDE to make the company certification and trainer training processes smoother
10) Establish research and development funding to incentivize bottom-up improvement among actors in the field
<ul style="list-style-type: none"> • Add an article to the LDE on quality assurance • Add an article to the LDE on research, development, and monitoring • Dedicate resources and processes to these goals • Emphasize areas not covered by other institutions (e.g. IIE), for example WBL
11) Add provisions for LDE system-level monitoring, information, and improvement across education and employment
<ul style="list-style-type: none"> • Add provisions to the law describing how LDE will be monitored and what information will be collected • Focus on the interface between education and employment (e.g., WBL) • Publish an annual report on facts and figures related to LDE VET
12) Increase the number and variety of LDE profiles, especially profiles that serve girls (transitional article)
<ul style="list-style-type: none"> • Add a transitional article to the LDE articulating procedures for increasing the number and variety of LDE VET profiles according to labor market demand • Use data from monitoring and evaluation to ensure that new profiles support equity and the inclusion of girls in LDE VET (e.g. administration, healthcare). The goal is not to force girls into existing LDE VET profiles, but to include more profiles that already serve girls.

1 Introduction

Serbia's law on dual education (LDE) and its bylaws, implemented in the 2019/2020 school year, regulate work-based learning (WBL) and related processes in certain upper-secondary vocational education and training (VET) profiles. To support the implementation process, this report is the fifth and last in a series of studies that look for drivers and barriers to implementing the law (see Appendix for all five previously published studies).

The LDE contains a transitional article stating that it should be revised based on evidence three years after implementation. This report makes recommendations for the Commission Art. 40 LDE for the improvement of dual education in Serbia based on research from 2017-2021 for that revision. Recommendations are based on evidence specific to Serbia, evidence- and theory-based best practices, and experience with similar reforms.

2 Purpose and Goals

This report is part of a multi-year investigation of Serbia's LDE content and implementation. The research project combines longitudinal and cross-sectional observation of the implementation process and the specific success factors and barriers that affect implementation of the Serbian LDE. The first main research question is **“What enables and/or prevents implementation of Serbian LDE?”** For example, Caves and Renold (2016a) find that employer engagement improves implementation in multiple cases, and Bolli et al. (2020) find that private-sector participation is a key success factor for the implementation of a dual VET program in Nepal.

The second main question of the overall research project is **“What changes to the law on dual education will facilitate implementation?”** This question will strongly inform potential revisions of the LDE after its implementation. Data collection points are based on key moments in the implementation process (i.e. pre-implementation, program start, first year, etc.), identified using the LDE, drafts of the new Master Plan that outlines stakeholders' roles and the reform timeline, and an existing SWOT analysis (Renold and Oswald-Egg, 2017).

For this study, we held three focus groups in Zoom. In each of the three focus groups—one with education-sector actors, one with employers, and one with donor partners—we discussed specific opportunities, problems, solutions, and potential future issues. Before the focus groups, we developed twelve key principles for the revision of the law based on the research we had conducted to date. The goal of the focus groups was to resolve questions and issues related to these key principles, so those formed the basis for the discussion and we collected participants' opinions using polls.

3 Method

This study is the fifth installment of a three-year research plan covering pre-implementation and the implementation period of the LDE in Serbia. We used evidence from previous reports to identify key principles for improving LDE. The goal of this study is to resolve questions and issues related to those key principles and to propose solutions. For that we organized three focus group meetings, with different actor groups, where we directly asked them about their opinions on specific topics. **Table 1** summarizes the overall research plan.

Table 1: Overall implementation research plan		
Study	Implementation timeline	Project start
Interview 1	Pre-Implementation	Spring 2019
Survey 1	Start of implementation	Fall 2019
Interview 2	End of first year	Spring 2020
Survey 3	Start of second year	Fall 2020
Interview 3 (this study)	Reflection	Spring 2021

For this reflection report, we began by collecting the key challenges and success factors identified in the three years of research that precedes this study. We also collected comments and suggested changes related to the LDE from the MoESTD (including feedback collected from schools) and CCIS (including feedback collected from companies). We coded these comments and suggestions to identify the main themes.

Based on this combination of evidence, feedback from the education sector, and feedback from the employment sector, we identified a set of guiding principles for the total revision of the LDE. The principles are not suggested changes. Instead, these are broader ideas that can guide the revision process when making specific decisions.

We initially validated the guiding principles with the project steering committee, which includes the MoESTD, researchers, and donor partners. Separately, we discussed the guiding principles with CCIS. In these discussions, we made changes and identified key issues that required further discussion with a broader group of stakeholders (see focus group protocol in 3.2).

We developed a focus group protocol based on the revised principles and the key issues that required more discussion. We carried out three focus groups over Zoom: one with education-system representatives like school leaders, one with employer representatives, and one with donor-partner representatives. In each one, we followed the same protocol and collected opinions both through discussion and through the Zoom polling feature, which allowed us to quickly collect a large number of participants' opinions.

Following the focus groups, we discussed results with the steering committee and with CCIS. In that discussion, we also began to identify the specific legislative changes implied by the final principles and stakeholders' feedback. We developed the first draft of this report with recommended legal changes and

distributed that to the MoESTD and CCIS for feedback. We incorporated their feedback, and this report is the result of this extensive evidence- and consultation-based process.

3.1 Sample

We interviewed 59 focus group participants in the spring of 2021. In collaboration with CEP and the SDC, we organized three virtual focus groups with selected participants and carried out the polls directly in the Zoom call.

The three workshops were held with stakeholders from the education sector, business sector and donor partners. **Table 2** summarizes the focus groups by actor group and sample size. When we show results by actor group in this report, we also report the subsample sizes, as those do not always match with the samples summarized in Table 2.

Table 2: Sample of participants by actor group		
Actor Group	Actor Summary	Sample
Educators	Members from the MoESTD, National-level bodies (e.g., IIE, NQF, curriculum design) and Regional School Administration representatives	28
Employers	National & regional CCIS representatives, company representatives (especially trainers/ instructors)	18
Donor partners	SDC representatives and other relevant donor representatives	13

3.2 Focus Group Protocol

We used comments collected by the MoESTD and CCIS and the comments we had gathered in our previous reports to identify and create twelve guiding principles. In all three workshops we asked the same questions. **Table 3** summarizes the questions related to the guiding principles.

Table 3: Core topics and questions
1) Establish a leadership structure (commission) for system monitoring and improvement, including the education and employer sectors
Do you think it is a good idea to strengthen the leadership structure by adding a permanent Commission that oversees the development of dual education, including actors from the employment and education system?
2) Increase in-company WBL to at least 25% (60%?) of total program time, defined in days, and with very little variation
Should the return on investment for companies offering work-based learning be negative, zero or positive?
Optimally, how much time do you think students should spend at companies on average?

When in the program should in-company work-based learning take place?
How should the distribution of in-company work-based learning work over the years?
3) Revise and enforce requirements for remuneration, compensation, contracts, insurance, etc. to ensure financial sustainability.¹
Currently, the remuneration is 70% of the hourly minimum wage. Do you think the remuneration should be changed?
How should the remuneration be paid?
If there is no in-company work-based learning in the first year, should the remuneration still start from the beginning?
Currently, schools and companies pay the insurance for students. Who do you think should cover the insurance costs?
4) Eliminate all non-paid WBL (LSE and public sector)
Currently, the Law on Dual Education allows small amounts of workplace learning without contracts and remuneration. Should that be allowed in competition to dual education?
Should the VET programs under the Law on Dual Education and the Law on Secondary Education be more distinct from each other so that dual education is not in competition with other models?
5) Match students with companies through an online platform and simplified enrolment process
Do you think that the process for enrolling students and matching them with training companies should be simplified and improved, for example through an online platform?
6) Improve career guidance and counseling
Does career guidance and counselling for dual education need to be improved?
7) Increase attractiveness by adding provisions for permeability into the law
Should there be an additional provision for permeability in the Law on Dual Education to increase the attractiveness of the LDE programs?
8) Regulate training alliances among employers (especially SMEs)
Should training alliances among employers (especially SMEs) be allowed and regulated?
9) Increase support to CCIS and improve processes for trainer training, company certification, and training alliances
Do you see the need to improve the processes for trainer/instructor training?
Do you see the need to improve the processes for company certification?
10) Establish research and development funding to incentivize bottom-up improvement among actors in the field
Is there a need to establish a research and development fund to incentivize bottom-up innovation among actors in the field and stimulate the improvement and development of the system?

¹ Rephrased for clarity. In the focus groups, it was phrased as follows: "3) Financing the system: Revise and enforce requirements for remuneration, compensation, contracts, insurance, etc."

11) Add provisions for LDE system-level monitoring, information, and improvement across education and employment
Is there a need to add provisions to the Law on Dual Education for periodical system-level monitoring, information, and improvement across education and employment?
12) Increase the number and variety of LDE profiles, especially profiles that serve girls (transitional article)
Is it necessary to increase the number and variety of dual education profiles, especially those that would serve girls?

4 Guiding Principles for the Revision

We developed twelve guiding principles for the revision of the LDE based on the existing research. This section details the evidence for each guiding principle, the focus group response to that principle, and our specific recommendations for the LDE revision based on the principle and the focus group's opinions.

4.1 Establish a Leadership Structure

The first guiding principle is to establish a leadership structure (commission) for system monitoring and improvement, including actors from the employment and education system.

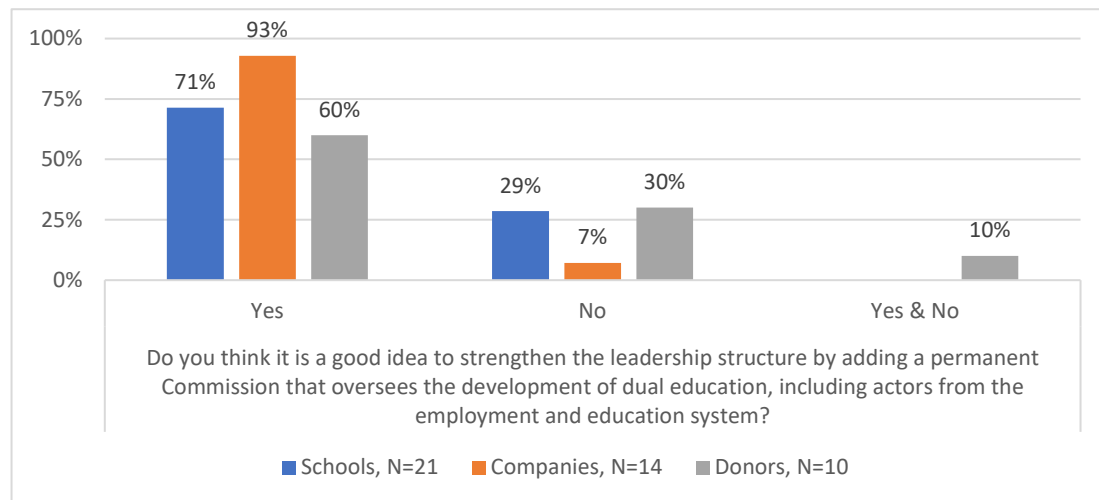
4.1.1 Evidence

In Renold and Oswald-Egg (2017), we carried out an initial SWOT analysis of the VET landscape in Serbia. In that report, we raised this question: **“Who is the leader for VET issues, and what are the responsibilities of all the involved actors?”** This question of system leadership remains largely unresolved.

4.1.2 Focus Group Results

As shown in **Figure 1**, in all three focus groups the majority agrees that it would be a good idea to strengthen the leadership structure by adding a permanent commission that oversees the development of dual education, including actors from the employment and education system. Especially participants from the company focus group agree on that (93% of respondents), followed by the schools (71%) and donors (60%).

Figure 1: Strengthening the leadership structure



Legend: Participants could either choose Yes or No, or both. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners.

Currently, there is a Commission established by Art. 40 in the LDE, but that will disappear when the transitional period is over. Ideally, there should be an article in the law referring to a permanent LDE commission. The article should describe its competences and composition, as well as the criteria for the election of its members. The commission should be responsible for monitoring the implementation, operation and development of dual education. Its members should include leadership from the employment system, especially from CCIS, professional associations and its training companies.

This kind of commission follows the example of the Council for Higher Education or the Council for Vocational and Adult Education. However, these councils have only an advisory role below the MoESTD. Given the importance of sharing power across the education and employment systems in vocational education (Bolli et al., 2017), this commission provides an important opportunity to bring the employment sector into decision-making, for example also with regard to the Master Plan. Therefore, the law should specify certain areas where the commission makes decisions. These powers must bear in mind that dual education is part of secondary vocational education decisions cannot conflict with the rest of the education system. Generally, the members of the Commission should have experience with dual education and the dual education system. Employers should be significantly involved in the commission so that the education and employment systems are equally represented.

4.1.3 Recommendations

- **Establish a permanent leadership commission for dual education**
- **Include CCIS and employers in the commission**
- **Give the employment-sector actors more power in LDE VET**

4.2 Increase in-company WBL

The second guiding principle is to increase in-company work-based learning to at least 25% (60%) of total program time, defined in days, and with very little variation.

4.2.1 Evidence

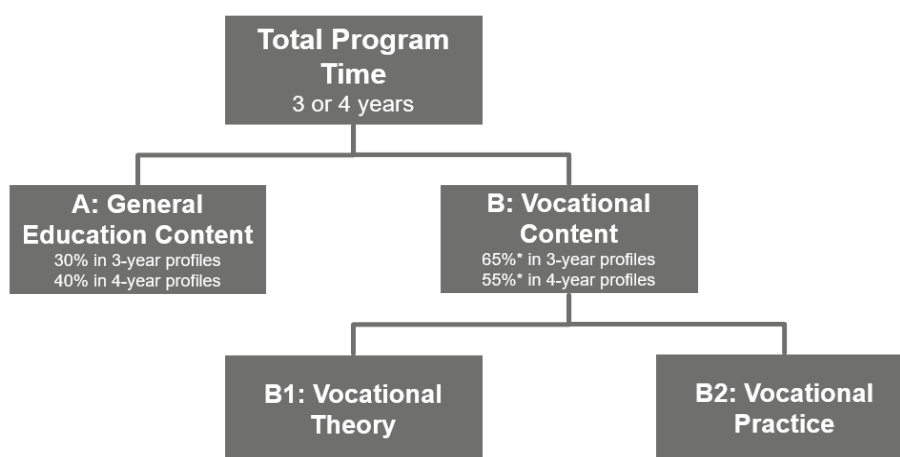
The LDE allows for a great deal of variation both within and across profiles in terms of how much time students spend in workplace learning. We described the issue in the fourth report for this project. We also noted how little WBL is required by the LDE. From that report:

“Serbian VET profiles last three or four years, and content is divided into general education (A) and vocational content (B). As shown in **Figure 2**, 3-year profiles spend approximately 65% of total program time on vocational content, while 4-year profiles spend approximately 55%. There are two types of vocational content: vocational theory (B1) and vocational practice (B2).

“Under the LSE, up to 25% of PFT (usually B2, can also include B1) can be taught in the workplace. This means that at the absolute maximum, students in LSE VET profiles can spend up to 16.25% (3-year profile) or 13.75% (4-year profile) of their total program time in workplaces. Students usually spend much less time in workplaces than this maximum.

“The LDE states that between 20-80% of vocational content (B1+B2) is WBL (B2). Therefore, LDE VET students can spend between 13-52% (3-year) or 11-44% (4-year) of total program time on WBL (B2). The LDE further states that at least 75% of that WBL (B2) must be done in companies. Therefore, students in LDE VET profiles can spend between 9.75-52% (3-year) or 8.25-44% (4-year) of the total program time on in-company WBL.”

Figure 2: Basic overview of VET profile time allocation



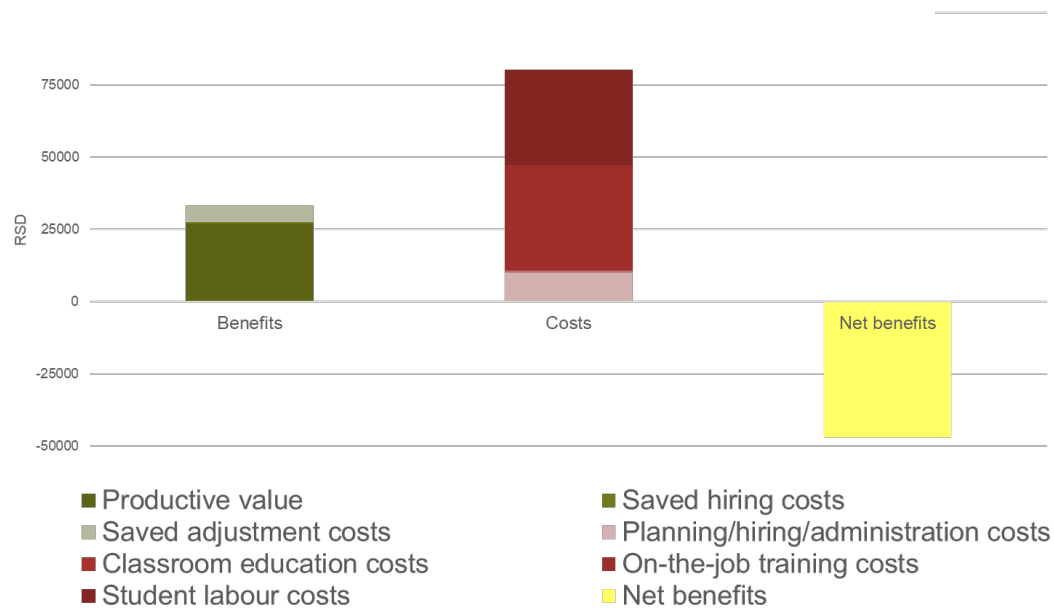
LSE VET ≤25% of Practical Forms of Teaching (PFT) can be in companies. PFT is mostly B2 but can also be B1.**
Full program professional practice in companies: 0%-16.25% (3y) or 0%-13.75% (4y)

LDE VET 20%-80% of B is B2/WBL. Full program WBL: 13%-52% (3y) or 11%-44% (4y).
No more than 25% of B2/WBL can be in schools***.
Full program B2/WBL in companies: 9.75%-52% (3y) or 8.25%-44% (4y)

*The remaining 5% comprises elective subjects. **LSE Rulebook on the implementation of practical teaching and professional practice, Art. 2. ***LDE, Article 6

This has important consequences for companies' ROI and the financial sustainability of the program. As shown in the cost-benefit analysis (Bolli et al., 2021). **Figure 3** shows that companies in Serbia are currently ending the program with net costs. In the cost-benefit study, Bolli and coauthors also simulate the program with increased WBL and find that doubling the WBL time together with an increase in productive tasks could resolve the ROI issue.

Figure 3: Net benefits of the dual education program



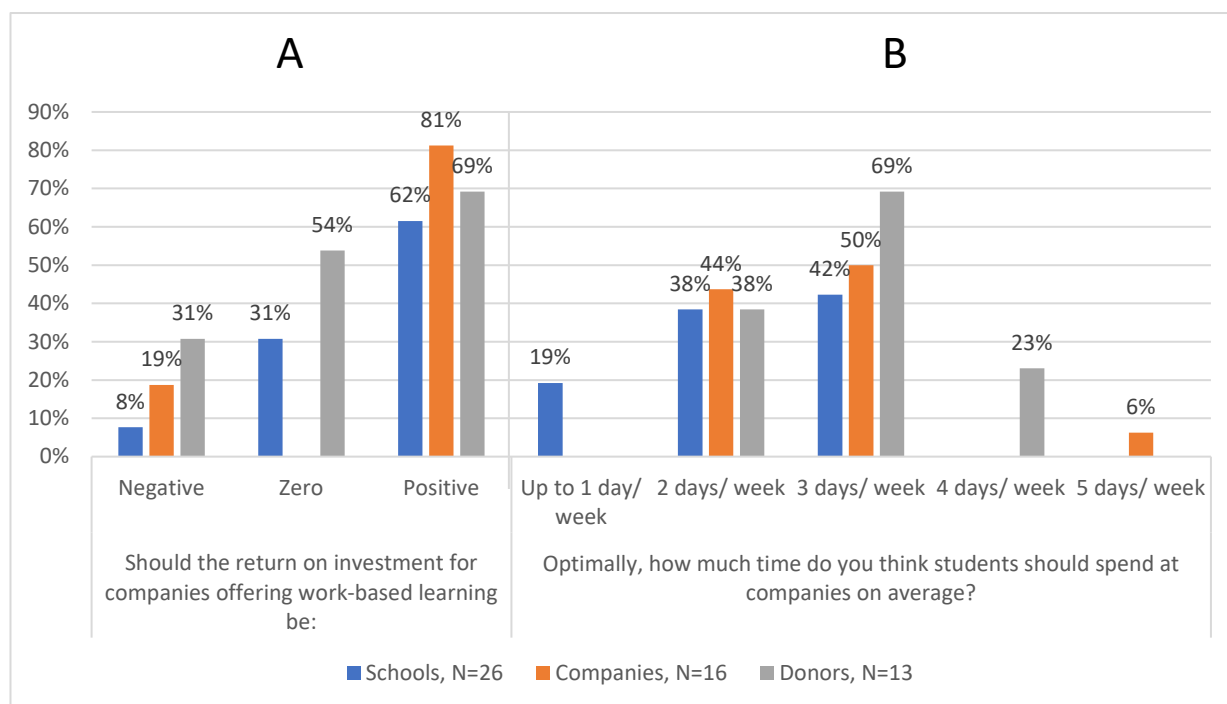
4.2.2 Focus Group Results

For the second guiding principle on increasing worked-based learning, we asked participants four questions. First, do stakeholders think that companies offering work-based learning should have a positive return on investment? **Figure 4**, part A, shows that most participants from all three groups aim for a positive return on investment, or at least break-even. Second, what is the opinion of the participants on the optimal number of days an apprentice should spend at the workplace per week? As shown by **Figure 4**, part B, the current consensus is 2-3 days per week. This is in approximately in line with the number of days per week that students in top-performing countries spend at companies, which is over 50% or at least 3 days per week.

The third question was about the timing of WBL. Should the work-based learning take place every year, from the second year onwards or only in the last two years? In **Figure 5**, part A, we see that the majority wants the work-based learning to start from the second year onwards. This in turn might have implications for the preference of a positive ROI and needs to be considered.

Our fourth question addresses the distribution of work-based learning over the years. In all three focus groups, a large majority clearly prefers a progressive distribution, as can be seen in **Figure 5**, part B.

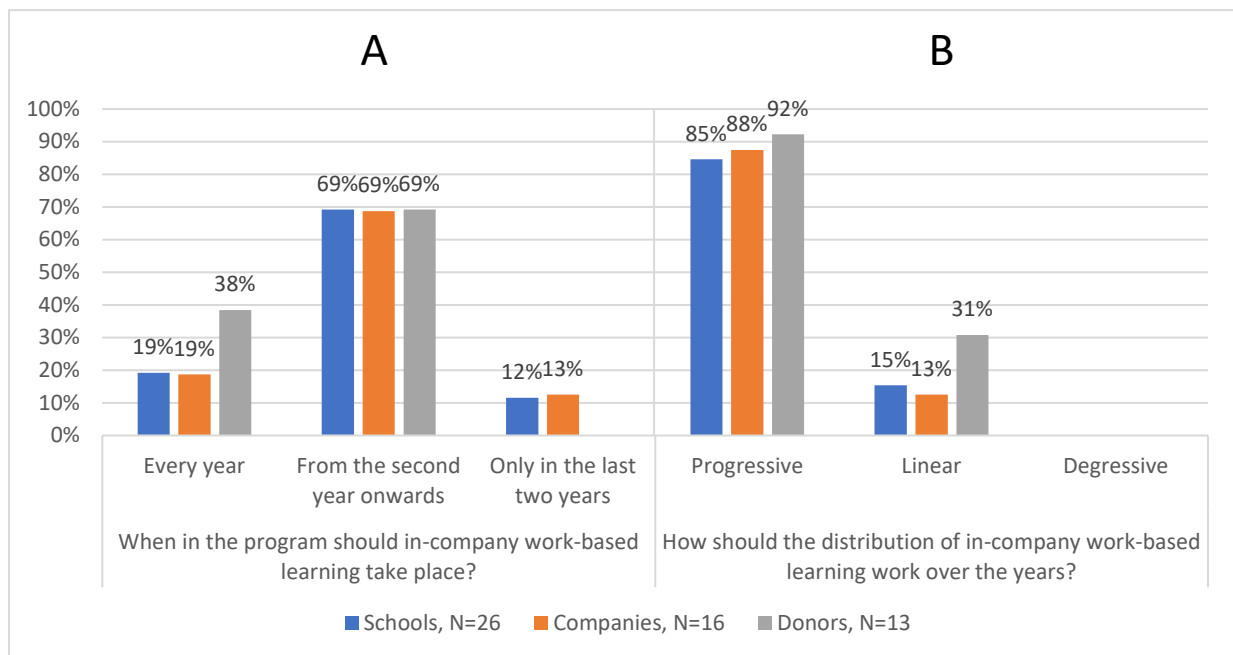
Figure 4: ROI and days per week of WBL



Legend: Figure A displays the distribution of answers to the question whether the ROI of companies offering WBL should be negative, zero, or positive. Figure B shows the distribution of how many days should optimally be spend at the company with answers reaching from one to five days per week. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners. Some participants from the donor group choose multiple answer, leading to more than 100% in total.

In further feedback, it became clear that the current WBL time regulations are unclear and not effective at promoting WBL. Because the LDE allows for such a wide range of WBL time, the minimum amount is taken in most cases. In addition, the definition of WBL in terms of the percentage of vocational content is extremely unclear and most stakeholders are unable to interpret or calculate how many days or hours are required. Allowing for variation by occupation within a much smaller range is required, however, since different occupations will have different training costs, safety concerns, and other considerations.

Figure 5: Timing and Distribution of WBL



Legend: Figure A represents the distribution of answers to when the WBL should take place. Figure B shows the distribution of answers to the question of whether WBL over time should be progressive, linear or degressive. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners. Some participants from the donor group choose multiple answer, leading to more than 100% in total.

4.2.3 Recommendations

- **Key goal: Ensure ROI (or at least break-even) for all companies. WBL policies should flow from this goal.**
- **Use a progressive model, with more WBL in later program years**
- **One to two days (20-40%) of WBL in the first year prevents second-year occupation-switching and helps support ROI while giving students an easier transition.**
- **In later years, three to four days of WBL (60-80%) aligns with international best practices, supports ROI, and helps students learn relevant skills**
- **Students must be mostly doing productive work (not watching, practicing, etc.) while in WBL. This may happen automatically with increased WBL.**
- **WBL time must be relatively consistent across schools and companies, depending on occupation.**

4.3 Revise and enforce requirements to ensure sustainability

The third guiding principle is about financing the system; the need to revise and enforce the requirements for remuneration, compensation, contracts, insurance, and others.

4.3.1 Evidence

Table 4 shows the implementation fidelity of LDE from the second survey, which includes monetary and non-monetary compensation for students as well as contracts between the company and the student respectively the company and the school.

Table 4: LDE Implementation Fidelity in 2020-2021

LDE Requirement	2020-2021 Implementation
Average WBL time (<i>Standard deviation</i>)	1.8 hours/week (3.3 hours)
Student Remuneration (%)	62%
Non-Monetary Compensation for students (%)	41%
Company-Student Contracts (%)	70%
Company-School contracts (%)	78%

Notes: Standard deviation is a measure of variation in the data. When standard deviation is higher, there is more variation in the time students spend in the workplace each week. When standard deviation is lower, student's weekly workplace learning hours are more similar across observations.

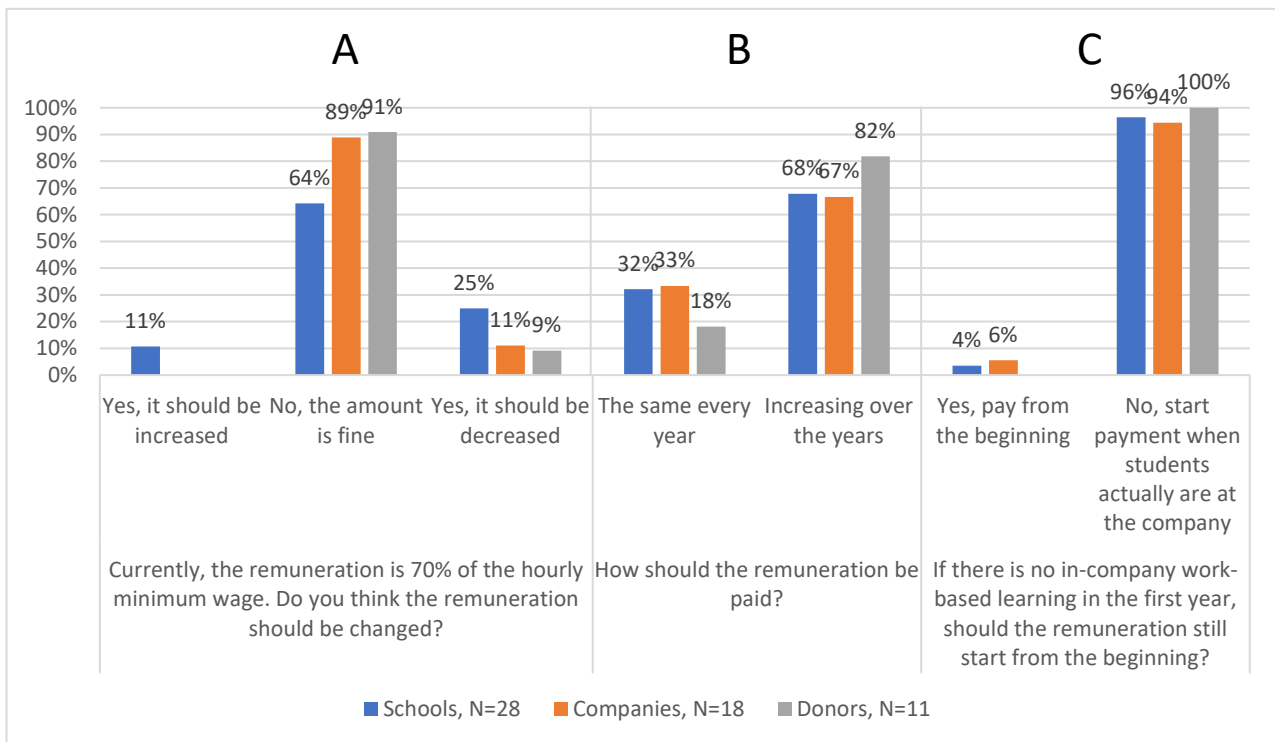
4.3.2 Focus Group Results

We prepared four questions for our focus groups with regards to remuneration and insurance. First, as can be seen in **Figure 6A**, there is a clear consensus among the participants that the current amount of remuneration, which is 70% of the hourly minimum wage, is appropriate. Participants from the school focus group are somewhat more divided in their opinions, as 25% of participants think the remuneration should be decreased, and another 11% think it should be increased.

Furthermore, in **Figure 6B** we see that the majority of all three focus groups prefers an increasing remuneration over the years as opposed to a constant one.

Even clearer are the opinions on the remuneration when work-based learning is absent in the first year of apprenticeship illustrated in **Figure 6C**. Almost all participants think the payment should only start when the students are at the company.

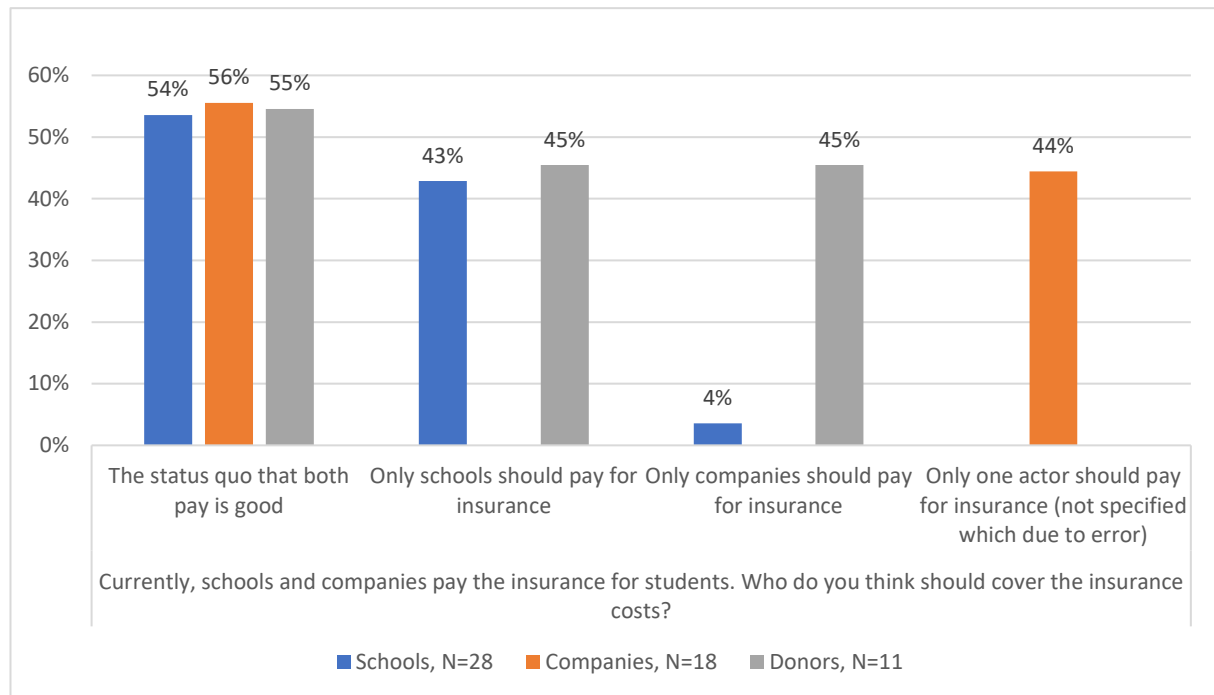
Figure 6: Remuneration



Legend: Figure A displays the distribution of answers to the whether the current remuneration is appropriate or should be increased/decreased. Figure B shows the distribution of opinions on whether the amount of remuneration should be the same every year or increasing over the years. Figure C illustrates the answers to the questions whether remuneration should start in the first year when WBL does not take place from the very beginning of the apprenticeship. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners.

Furthermore, we discussed insurance with our focus group participants. Do participants agree with the status quo, that schools as well as companies pay for insurance? If not, should schools or companies pay the insurance? In **Figure 7** we see divided opinions. In all three focus groups slightly more than half of all participants agree with the status quo, while the other half wants only one party to cover insurance. Participants from the school focus group clearly prefer schools (43%) over companies (4%) to pay the insurance. The opinion of the company participants is equally divided between them paying the insurance and schools paying the insurance. For donors preferring only one party to cover insurance, it does not matter whether schools or companies do so.

Figure 7: Payment of insurance



Legend: Figure 7 displays the distribution of answers to the question whether insurance should be paid by both, schools and companies, or only from one of the two parties. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners. Due to an error, participants from the company focus group only saw two answer options, instead of three. Those who wanted only one party to pay the insurance could not further distinguish which of the two parties should pay. Furthermore, some participants from the donor group choose multiple answer, leading to more than 100%.

4.3.3 Recommendations

- **Simulate ROI at different wage levels and progressive WBL models.**
- **Enforce requirements for remuneration, compensation, contracts, etc.**
- **Check existing insurance requirements and clarify plans.**

4.4 Eliminate all non-paid WBL

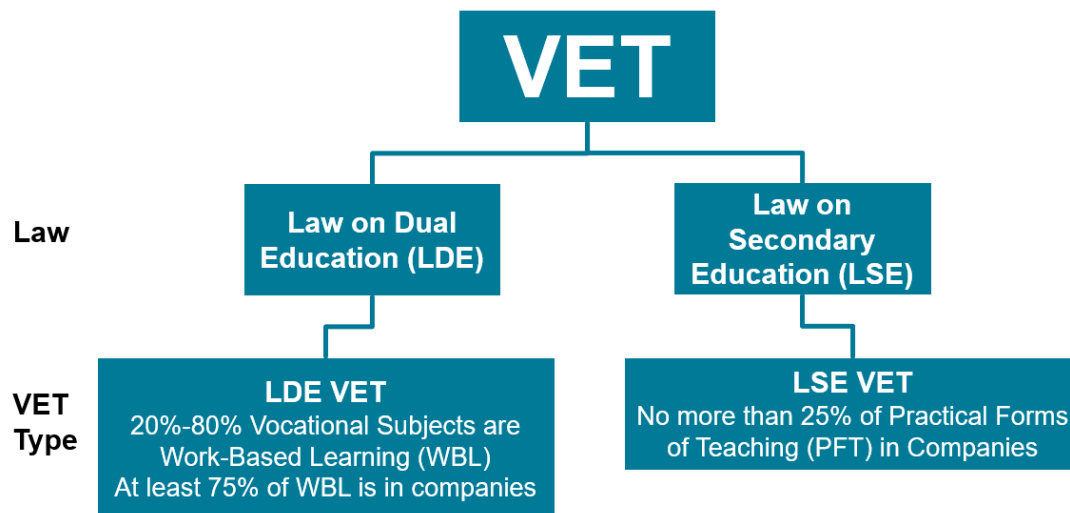
The fourth guiding principle is about eliminating all non-paid work-based learning. This is especially important in LSE VET and in public-sector jobs and occupations.

4.4.1 Evidence

In the fourth report from this project, we note the differences between VET under the LDE and the LSE. From that report:

“The LSE pre-dates the LDE and allows for various approaches to VET delivery (referred to collectively as LSE VET in this report). Specifically, LSE VET allows for the implementation of students’ professional practice in schools, in companies, and in a combination of the two. Following amendments in early 2020, the time students in LSE VET profiles can spend in companies is limited to 25% of their practical forms of teaching (PFT), which is mostly vocational practice but can also include vocational theory in some cases. [Figure 8] shows the VET delivery models to help readers understand the context and the terminology we will use in this report. Although it was previously possible for students in LSE VET profiles to do any amount of professional practice in companies, the 2020 amendments require that any amount of professional practice in companies that exceeds 25% of PFT must be done under LDE VET regulations. Therefore, LSE VET profiles cannot meet the OECD’s (2018) definition of dual VET programs. Profiles in the LDE VET model can potentially be dual VET, but only in the cases where students spend more than 25% of total program time doing WBL in companies.”

Figure 8: Summary of VET in Serbia

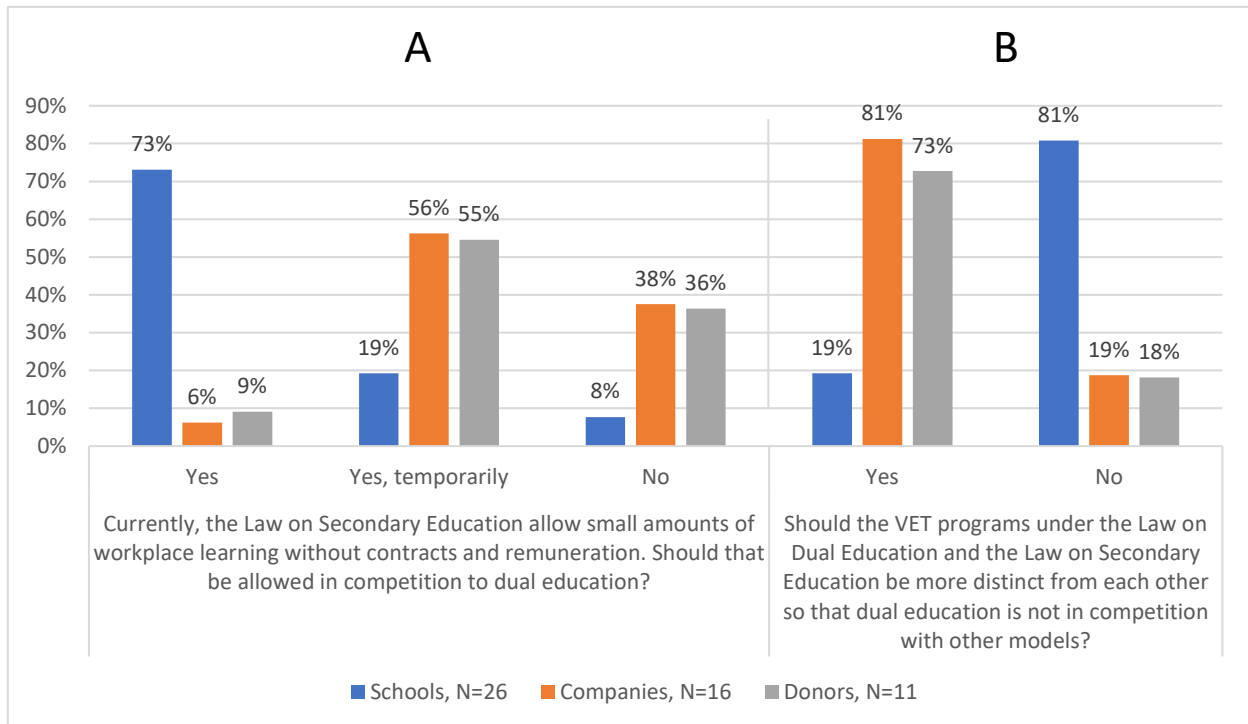


4.4.2 Focus Group Results

As mentioned above, the Law on Secondary Education (LSE) allows small amounts of workplace learning without contracts and remuneration. We asked participants in the focus groups whether LSE should be allowed in competition to dual education. **Figure 9A** shows the distribution of answers. A large majority (73%) from the school focus group is in favor of LSE and thinks it should coexist with the Law on Dual Education (LDE). However, companies and donors are more in favor of LSE only coexisting temporarily (56% and 55%). A good share of participants from companies (38%) and donors (36%) thinks that LSE should not be allowed to be in competition with LDE.

What do participants think about a greater distinction between the two programs, such that dual education is not in competition with LSE? In **Figure 9B** we see large discrepancies among the three focus groups. While 81% of participants from the school focus group do not think a further distinction is necessary, most participants from the company (81%) and donor (71%) focus group agree on the opposite.

Figure 9: Unpaid learning at companies



Legend: Figure A displays the distribution of answers to whether LSE should be allowed in competition to dual education. Figure B shows the opinions on whether the LDE should be more distinct from the LSE to avoid competition. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners.

LSE VET can still exist alongside LDE VET without the systems conflicting, but only if there is no professional practice in companies or WBL in LSE VET. All in-company learning of any form should be regulated under the LDE. LSE VET should only take place in schools or workshops.

4.4.3 Recommendations

- **Use a transitional article/sunset clause to phase out professional practice in companies in LSE VET by 2024**
- **Require remuneration for WBL in all occupations and industries, including the public sector**

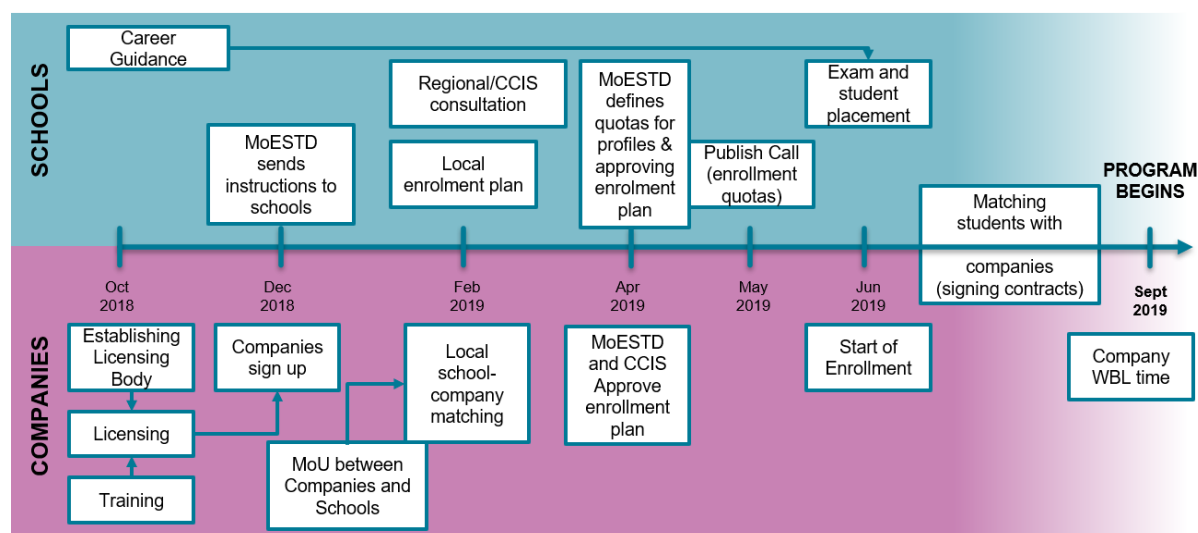
4.5 Matching students with companies

The fifth guiding principle is to match companies through an online platform and simplify the enrollment process.

4.5.1 Evidence

The process of matching students and companies needs to balance the competing demands for effectiveness, efficiency, and equity. The current process through which schools and companies offer and fill training places is highly inefficient, as shown in **Figure 10**, which depicts the process in the first year of implementation. A combination of refining the process, making it more market-oriented, and including tools like online platforms and apprenticeship marketplaces can make this process much more efficient and effective while preserving equity considerations.

Figure 10: Process for student enrollment in the first year of implementation

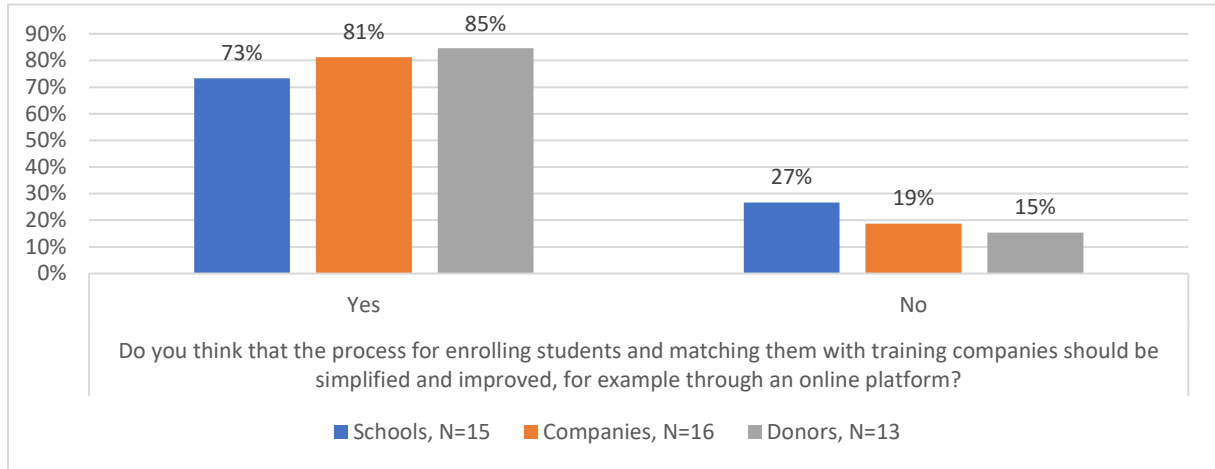


4.5.2 Focus Group Results

From **Figure 11** we see that most participants share the same opinion, namely that the enrollment and matching process of students with training companies needs improvement and should be simplified.

A simplified enrollment process could look something like this: companies self-enroll in an online platform or CCIS identifies companies and helps them enroll by a certain deadline before student enrollment starts. Schools help students identify and apply for positions, and every successful match results in enrollment. An online platform would help dramatically especially during up-scaling process of dual education in Serbia, and although the platform itself may be detailed in a rulebook rather than the LDE itself, the revision should include at least temporary funding for the creation and deployment of such a platform.

Figure 11: Simplified and improved enrollment and matching process



Legend: Figure 11 displays the distribution of answers to the question whether the process of enrolling and matching students with training companies should be simplified and improved. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor partners.

4.5.3 Recommendations

- **Simplify the enrollment process**
- **Allow for the creation of an online platform for student-company matching**

4.6 Career guidance and counseling

The sixth guiding principle is about improving career guidance and counseling.

4.6.1 Evidence

In the third report in this project, we discuss career guidance and counseling. From that report:

“Even though **career guidance and counseling** for VET students should be increased under the LDE, only 65% of LDE VET students report having **sufficient guidance** before making their choice. However, those students also report that they had **enough information** before starting WBL (4.6 out of 5 points), so any shortfall seems to be resolved before the program begins.

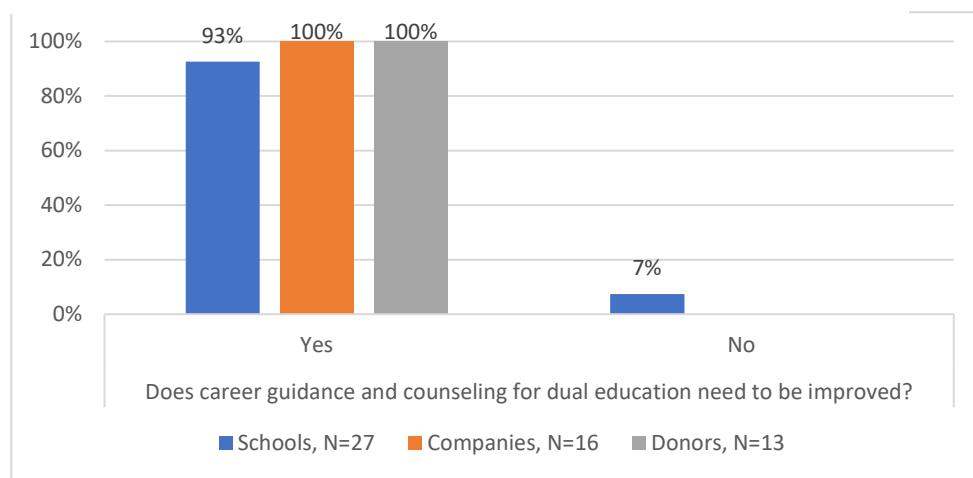
“Students typically find out about their secondary school profile from the school, either from teachers, the secondary school open door event, or informational presentations. Peers are also an important source of information, as is the Internet. However, the patterns are different for students who ended up in dual education and those who did not. In dual education, school information sources are much more important (63% for LDE VET students, 29% for LSE VET students). LSE VET students are more likely to find information on the internet (37%, 13% for LDE VET students) and from the Information Guidebook on Secondary Education (13%, 0% for LDE VET students). Both groups report using information from peers, although

LDE VET students are more likely to use this source (20%, 13% LSE VET students). Family—mainly older siblings—is a smaller information source (3% for LDE VET students, 8% for LSE VET students). “

4.6.2 Focus Group Results

As seen in **Figure 12** all participants from the companies and donor groups agree, that the career guidance and counseling for dual education needs to be improved. Same is true for a large majority (93%) of participants from the school focus group. One key improvement may be ensuring that students in the 7th and 8th grades have access to high-quality and independent career guidance and counseling.

Figure 12: Career guidance and counseling



Legend: Participants could either choose Yes or No. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor.

4.6.3 Recommendations

- **Rethink how the career guidance and counseling system will work in the future, given the fact that it needs to operate in partnership with companies and support students before their transition into secondary education.**
- **Establish career guidance centers outside schools to support all students and pathways in their choices without overloading schools with new duties.**
- **Professionalize the WBL coordinator position, create specific training for that role and for career guidance and counseling.**
- **If career guidance and counseling will add to the RSA workload, they need more resources.**
- **Post-COVID, consider whether more online information platforms can help students understand their options (companies photos and videos, occupational information, sniffing/trial placement options)**

4.7 Permeability

Our seventh guiding principle is to increase the attractiveness of LDE by adding provisions for permeability into the law.

4.7.1 Evidence

In the third report of this project, we discuss interview results about what students do after they complete different VET programs. From that report:

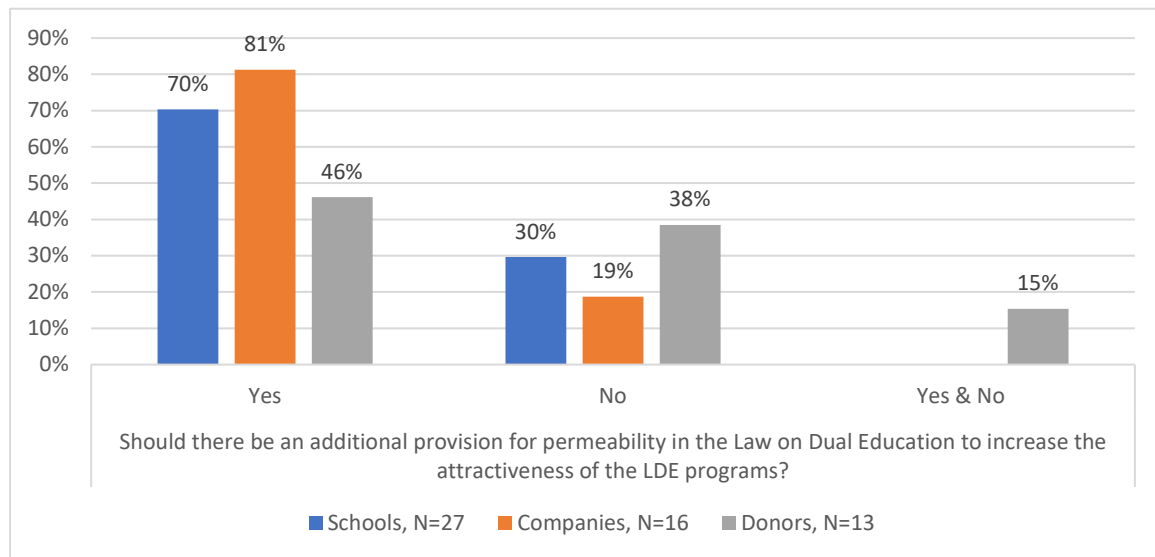
“In these interviews, the students in LDE VET tend to have different plans for after secondary school than their LSE VET peers do. Among LDE VET students, 29% plan to go on to further or higher education, while 77% plan to work (there are some who plan to do both). In contrast, 50% of LSE VET students plan to continue their education and 40% plan to work. Among those who plan to work, 32% of LDE VET students specify that they will work in the same occupation, compared to only 17% of LSE VET students. In both VET types, 10% of students state that they would like to continue working in their host companies. Although no students in LSE VET have this goal, 13% of LDE VET students report planning to start their own businesses after secondary school. It is impossible to state how much of these differences come from the programs or from the type of student who self-selects into a new education program, but the differences are noticeable.”

Generally speaking, system permeability is a precondition for program attractiveness, systemic equity, and companies' ROI. A system is permeable when there are further programs for education and training that students can access from any starting point. Further education and training opportunities attract better students, who are more productive during training.

4.7.2 Focus Group Results

Figure 13 shows the distribution of opinions on whether to include an additional provision for permeability in the Law on Dual Education. A large majority of the school (70%) and company (81%) focus group see the need for an additional provision for permeability, while only 46% of donors agree with that. However, only 38% of the donors are against an additional provision and another 15% are indecisive between the two options.

Figure 13: Additional provision for permeability in LDE



Legend: Participants could either choose Yes or No. Some of the participants chose both options. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor.

4.7.3 Recommendations

- **Discuss with CCIS and professional associations: what are career paths within companies? How do companies see people progressing within occupations/occupational clusters?**
- **Identify opportunities for PET, applied degrees, etc.**
- **Ensure 1) Further formal qualifications from all starting points and 2) clear transitions across levels and types as defined by the NQF**
- **A highly permeable system offers PET (non-university tertiary) options up to NQF level 8.**
- **When developing LDE profiles, various options for further education and/or training should be considered and shown.**

4.8 Training alliances

The eighth guiding principle is about regulating training alliances among employers, especially SMEs.

4.8.1 Evidence

In the third report from this project, we made a recommendation related to training networks and alliances. From that report:

“Recommendation 4: Explore LDE Networks for small enterprises

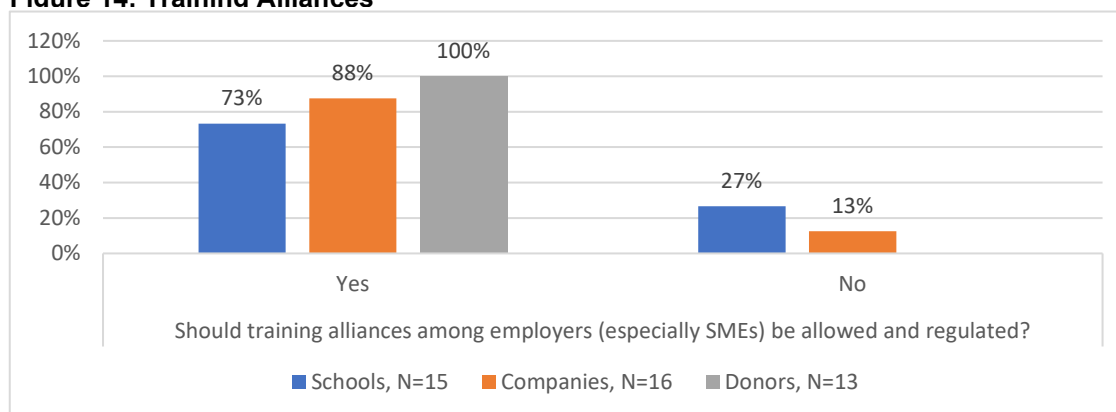
“The results indicate that small firms have greater difficulties in participating in dual education. Other countries are also confronted with this problem, which is why regional “alliances” of training companies have been created. For example, a regional CCIS office or RSA can take over the leadership and management. These LDE-networks take on tasks that are too costly for small companies. The LDE-network is remunerated by the companies for its services.”

Training alliances can help small and micro enterprises participate in training even if they do not offer the full scope of competencies required by an occupational profile. In addition, they can reduce costs for companies to facilitate ROI.

4.8.2 Focus Group Results

Figure 14 shows that especially participants from the donor focus group (100%) favor the existence of training alliances among employers. Also, the majority of participants from the company group (88%) and school groups (73%) agree on that.

Figure 14: Training Alliances



Legend: Participants could either choose Yes or No. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donors.

4.8.3 Recommendations

- Add an article to the LDE that allows for and regulates training alliances, possibly through a specific bylaw.

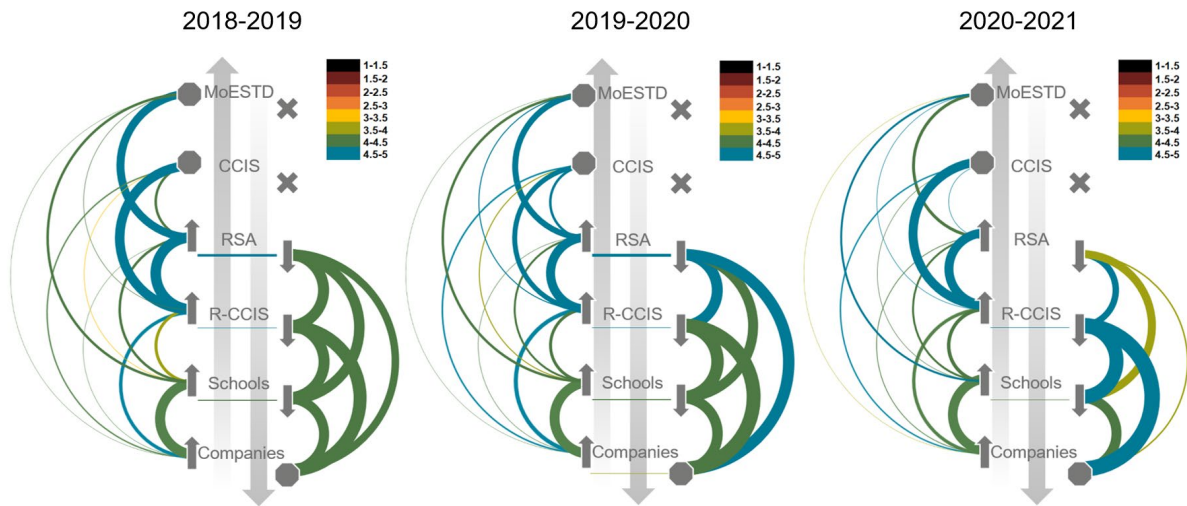
4.9 Increasing support to CCIS

The ninth guiding principle is to increase the support to CCIS and the processes for trainer training, company certification, and training alliances.

4.9.1 Evidence

CCIS is a crucial actor in the system created by the LDE. Network analysis of the relationship intensity among actor groups in the fourth report for this project shows that CCIS and its regional offices are central actors (**Figure 15**). In addition, the importance of CCIS and its regional offices have grown over time as the LDE implementation network has solidified. Supporting and including CCIS directly supports the continued improvement of LDE VET.

Figure 15: Actor networks in 2018-2019, 2019-2020, and 2020-2021



Notes: The left side of each figure shows relationships moving from actors at the bottom of the figure to those at the top, and the right side shows relationships moving down. Actors' vertical order does not represent importance or power. Line thickness represents relationship load, the product of how much respondents report working with their partners and the frequency with which members of the originating actor group report cooperating with members of the receiving actor group. Line color represents actors' satisfaction with the relationship, as shown in the legend.

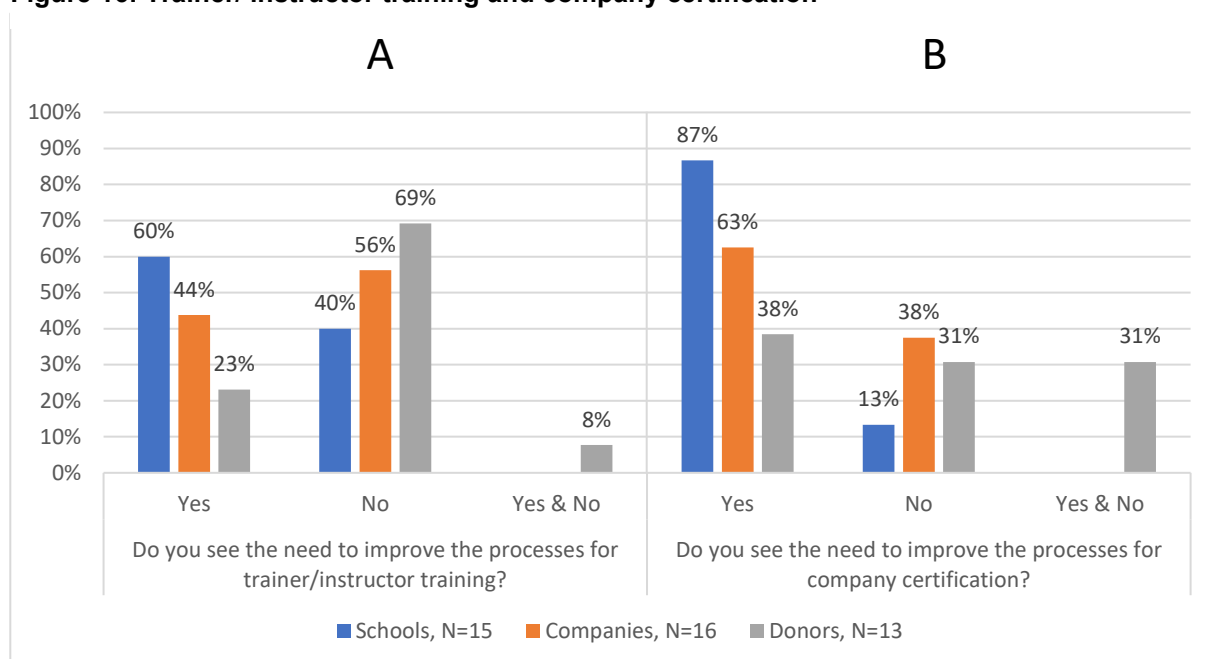
One of CCIS' most important roles in LDE VET is the training of trainers and the licensing of companies to offer training. However, the current LDE neither specifically grants CCIS a place at the leadership table nor provides direct support to the organization in carrying out its crucial tasks.

4.9.2 Focus Group Results

We asked participants whether they see a need to improve the processes for trainer/ instructor training. In **Figure 16A** we see that there is quite some disagreement among the participants. While most participants from the school focus group (60%) agree that there is a need for improvement, only 44% of companies and 23% of donors think so.

Furthermore, we addressed the necessity of improving the processes for company in **Figure 16B** certification. Most participants from schools (87%) and companies (63%) believe that there is a need for improvement, while only 38% of donors share that opinion.

Figure 16: Trainer/ instructor training and company certification



Legend: In both figures A and B, participants could either choose Yes or No, or both. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor.

4.9.3 Recommendations

- **Adjust the LDE to make the company certification and trainer training processes smoother**

4.10 Research and Development

Our tenth guiding principle is the establishment of a research and development fund to incentivize bottom-up improvement among actors in the field and stimulate the improvement of development of the system.

4.10.1 Evidence

In the second and fourth reports for this project, we asked actors about their innovation as they implement the LDE. We found that every actor group had to innovate, and typically in a variety of different ways. In addition to being crucial for LDE VET adoption, this kind of innovation can help the system move towards the most efficient model for Serbia. **Table 5** shows the types of innovation carried out by different actor groups for LDE VET in the 2020-2021 school year.

Table 5: Innovation requirements by actor

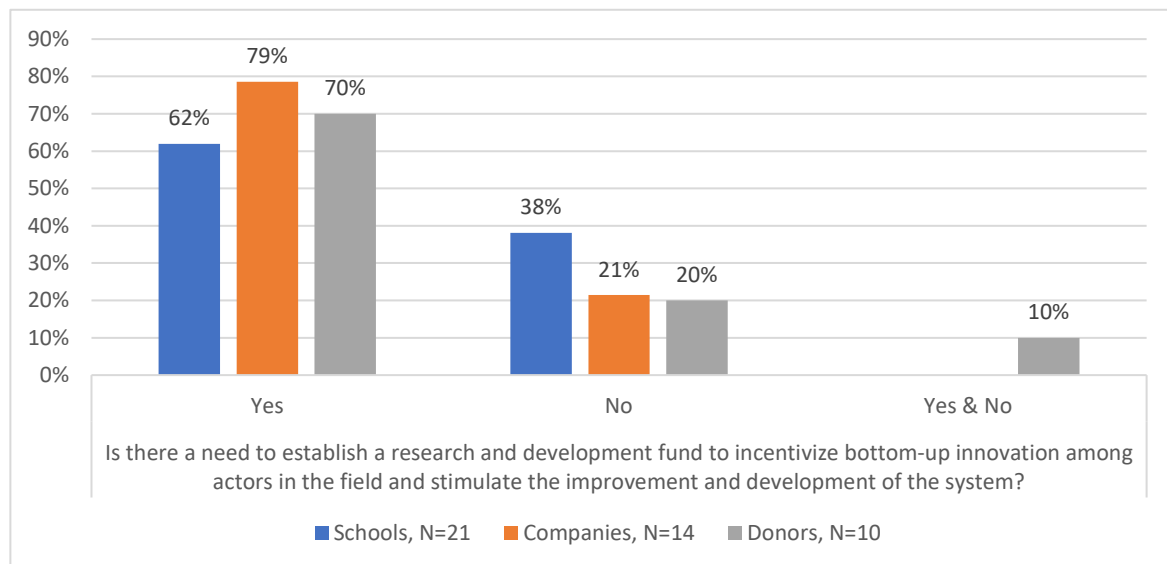
Innovation type	Schools	Companies	RSAs	Regional CCIS
Buy new equipment	16%	7%		
Develop new digital platforms for learning/training	18%	7%		
Develop new mentoring programs	30%			
Develop new procedures to ensure students' safety		24%		
Develop new processes of matching students and companies	41%			
Develop new processes to certify companies for training				10%
Develop new processes to monitor training	34%	30%	45%	40%
Develop new scheduling or organization of classes/training	36%	38%		
Develop new teaching/training materials	50%	38%	9%	60%
Develop new teaching/training methods	32%	20%		
Hire a new educational adviser/employee			64%	70%
Hire a new WBL/training coordinator	52%	4%	9%	10%
Hire new employees for human resources		5%		
Hire new employees for training		32%		
Ongoing Innovations				
Implement new cooperative activities with companies/schools	41%	26%	27%	20%
Implement new coordination activities with regional CCIS/RSAs			27%	0%
Provide new teacher/trainer/employee training	43%	31%	36%	90%
No innovation	7%	8%	0%	20%

Note: Survey participants were asked to choose all innovation types that apply to their institution, so the numbers do not sum to 100% by column. Percentages are calculated out of all respondents who got the question, that is schools and companies with students in LDE VET and RSAs or regional CCIS offices that report there are students in their areas doing LDE VET. N=44 schools, 74 companies, 11 RSAs, and 10 regional CCIS.

4.10.2 Focus Group Results

In **Figure 17** we see that the majority of all three focus groups thinks there is a need for the establishment of a research and development fund.

Figure 17: Establishment of a research and development fund



Legend: Participants could either choose Yes or No, or both. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor.

4.10.3 Recommendations

- **Add an article to the LDE on quality assurance**
- **Add an article to the LDE on research, development, and monitoring**
- **Dedicate resources and processes to these goals**
- **Emphasize areas not covered by other institutions (e.g. IIE), for example WBL**

4.11 Adding provisions for monitoring and improvement

The eleventh guiding principle is to add provisions for LDE system-level monitoring, information, and improvement across education and employment.

4.11.1 Evidence

Monitoring, information, and improvement are crucial for the system's basic functioning and for its continued improvement over time. As we found in the second and fourth reports, the implementation fidelity

of LDE VET is not perfect. We expect this because it will develop over time, but monitoring and evaluation are necessary so that policymakers have the information they need to ensure improvement. This information system should cover both the education and employment sides of LDE, and leaders from both sides should have access. **Table 6** shows the implementation fidelity results in the 2020-2021 school year to illustrate the kind of information that will need to be collected.

Table 6: LDE implementation fidelity in 2020-2021*

LDE Requirement	2020-2021 Implementation
Average WBL time (Standard deviation)	1.8 hours/week (3.3 hours)
Company accreditation (%)	76%
Instructor licensing (%)	73%
Student Remuneration (%)	62%
Non-Monetary Compensation for students (%)	41%
Company-Student Contracts (%)	70%
Company-School contracts (%)	78%

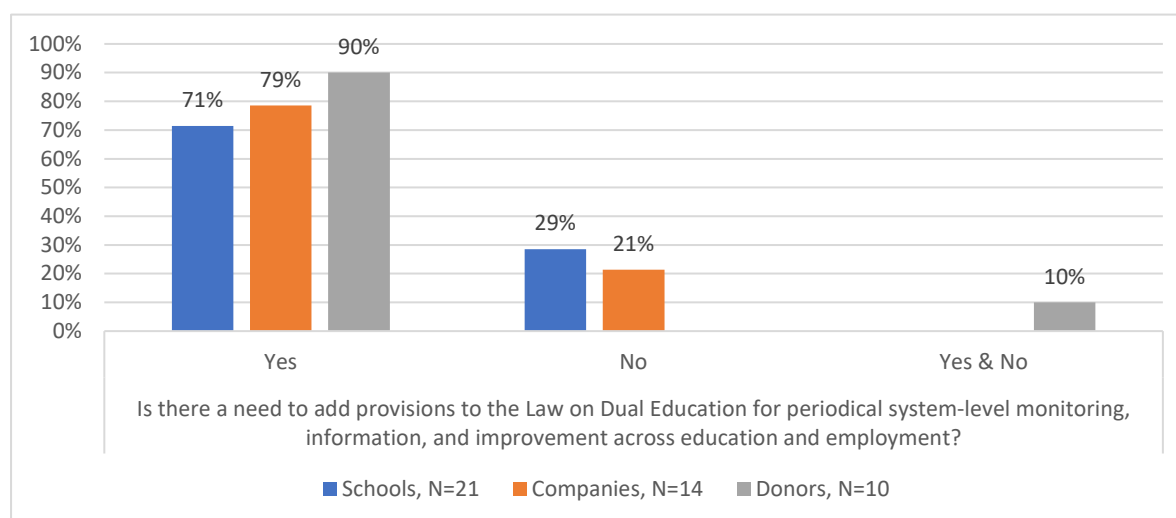
Notes: Standard deviation is a measure of variation in the data. When standard deviation is higher, there is more variation in the time students spend in the workplace each week. When standard deviation is lower, student's weekly workplace learning hours are more similar across observations.

*Used as an example of the type of data that needs to be collected and monitored.

4.11.2 Focus Group Results

We asked participants whether they think there is a need to add provisions to the Law on Dual Education for periodical system-level monitoring, information, and improvement across education and employment. **Figure 18** displays the distribution of answers, where the majority of all three focus groups thinks that there is a need for adding these provisions.

Figure 18: Adding provisions for monitoring and information



Legend: Participants could either choose Yes or No, or both. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent donors.

4.11.3 Recommendations

- Add provisions to the law describing how LDE will be monitored and what information will be collected
- Focus on the interface between education and employment (e.g., WBL)
- Publish an annual report on facts and figures related to LDE VET

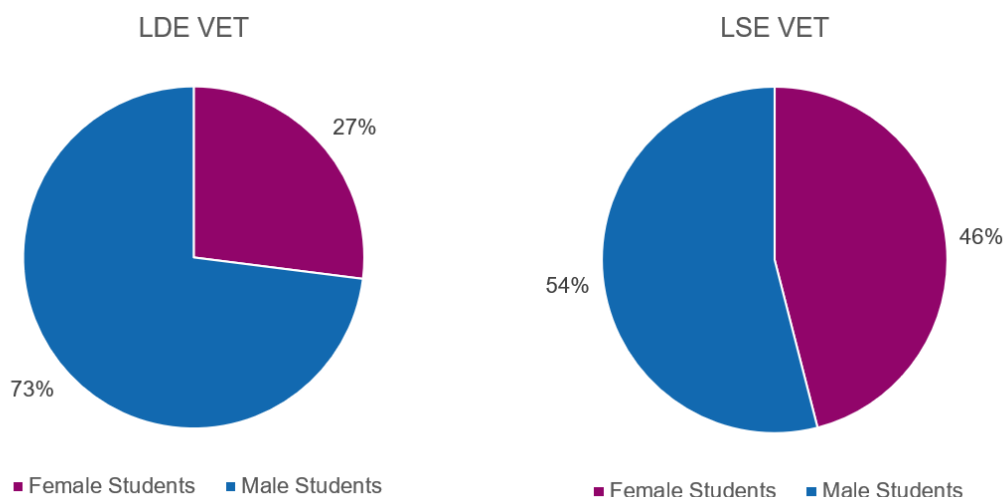
4.12 Increase the variety of LDE profiles

Our twelfth and last guiding principle is to increase the number and variety of LDE profiles, especially profiles that serve girls.

4.12.1 Evidence

LDE VET has fewer profiles than LSE VET because profiles need to be updated before they can be implemented as LDE profiles. In order to promote LDE as the mainstream version of VET in Serbia and give more students access to its offerings of WBL and better working environments, it must be a priority for LDE profiles to cover the entire labor market. LDE VET, as shown in **Figure 19** and in the second and fourth reports for this project, far fewer girls than boys are enrolled in LDE VET. Adding profiles—especially in healthcare, administration, and public sector occupations—would help reduce this gender gap while increasing the scope of students who have access to this program.

Figure 19: Enrollment in LDE and LSE VET by gender

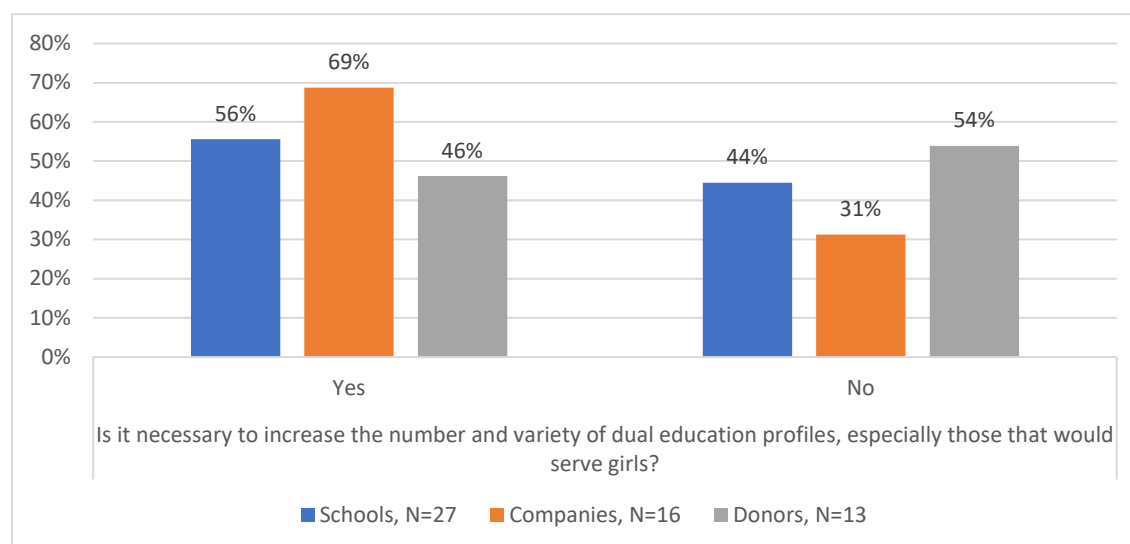


4.12.2 Focus Group Results

In our focus groups we asked our participants what they think about increasing the number and variety of dual education, especially those that would serve girls. **Figure 20** shows that the opinions vary widely.

While 69% of participants from the company focus group agree on the guiding principle, participants from the school and donor focus groups are somewhat divided. Only 56% of participants from the school focus group and 46% of the donors welcome an increase in the number and variety of LDE profiles, while the rest believes that there is no need for that.

Figure 20: Increasing the number and variety of LDE profiles



Legend: Participants could either choose Yes or No, or both. The bars represent the share of respondents (in %) for each answer option. The blue bars stand for participants from the school focus groups, the orange bars for participants from the company focus groups, and the grey bars represent the donor.

The allocation of LDE VET profiles to the NQF should be regulated in the LDE. However, a standardized certificate supplement should be created for each LDE VET occupation and qualification. These supplements should include a) the qualification's assignment to a level of the NQF; and b) a description of the knowledge, skills, and competences possessed by the person with the corresponding qualification.

4.12.3 Recommendations

- **Add a transitional article to the LDE articulating procedures for increasing the number and variety of LDE VET profiles according to labor market demand**
- **Use data from monitoring and evaluation to ensure that new profiles support equity and the inclusion of girls in LDE VET (e.g. administration, healthcare). The goal is not to force girls into existing LDE VET profiles, but to include the profiles that already serve girls.**

5 Conclusion

In addition to the specific recommendations related to the agreed-upon guiding principles for the LDE revision, two further issues have come up in this process. First is the COVID-19 pandemic, and second is the transition phase between revision and the final operational system. The COVID-19 pandemic has disrupted LDE VET over the past year and a half, necessitating changes and exceptions to normal operations. However, the adjustments related to the pandemic will not be permanent and therefore should not be included in the LDE revision.

Similarly, although there will be some implementation and adjustment between the revision of the LDE and the system's final form, the law should regulate the final system and not the start-up phase. When special regulations are required for the start-up phase, they should be included in transitional articles with clear timelines.

General recommendations

- **Distinguish between COVID-related difficulties and the normal procedure**
- **Design regulations for the operational system, not the start-up phase. If necessary, add transitional articles dedicating extra resources and special procedures to the start-up phase.**

Table 7 summarizes all the recommendations made for each of the guiding principles. Although the recommendations are specific to LDE revision, they are still general in that we do not propose specific wording or legal articles for any of these key points. That is an issue for Serbian decision makers. However, based on the evidence collected in over three years of implementation research and monitoring, feedback from schools and companies, and multiple rounds of feedback and discussion with stakeholders, these recommendations should help improve the LDE to make LDE VET more effective, efficient, equitable, and sustainable.

Table 7: Summary of Recommendations by Principle	
General recommendations	
<ul style="list-style-type: none">• Distinguish between COVID-related difficulties and the normal procedure• Design regulations for the operational system, not the start-up phase. If necessary, add transitional articles dedicating extra resources and special procedures to the start-up phase.	
13) Establish a leadership structure (commission) for system monitoring and improvement, including the education and employer sectors	<ul style="list-style-type: none">• Establish a permanent leadership commission for dual education• Include CCIS and employers in the commission• Give the employment-sector actors more power in LDE VET
14) Increase in-company WBL to at least 25% (60%?) of total program time, defined in days, and with very little variation	

<ul style="list-style-type: none"> • Key goal: Ensure ROI (or at least break-even) for all companies. WBL policies should flow from this goal. • Use a progressive model, with more WBL in later program years • One to two days (20-40%) of WBL in the first year prevents second-year occupation-switching and helps support ROI while giving students an easier transition. • In later years, three to four days of WBL (60-80%) aligns with international best practices, supports ROI, and helps students learn relevant skills • Students must be mostly doing productive work (not watching, practicing, etc.) while in WBL. This may happen automatically with increased WBL. • WBL time must be relatively consistent across schools and companies, depending on occupation.
15) Revise and enforce requirements for remuneration, compensation, contracts, insurance, etc. to ensure financial sustainability.
<ul style="list-style-type: none"> • Simulate ROI at different wage levels and progressive WBL models. • Enforce requirements for remuneration, compensation, contracts, etc. • Check existing insurance requirements and clarify plans.
16) Eliminate all non-paid WBL (LSE and public sector)
<ul style="list-style-type: none"> • Use a transitional article/sunset clause to phase out professional practice in companies in LSE VET by 2024 • Require remuneration for WBL in all occupations and industries, including the public sector
17) Match students with companies through an online platform and simplified enrolment process
<ul style="list-style-type: none"> • Simplify the enrollment process • Allow for the creation of an online platform for student-company matching
18) Improve career guidance and counseling
<ul style="list-style-type: none"> • Rethink how the career guidance and counseling system will work in the future, given the fact that it needs to operate in partnership with companies and support students before their transition into secondary education. • Establish career guidance centers outside schools to support all students and pathways in their choices without overloading schools with new duties. • Professionalize the WBL coordinator position, create specific training for that role and for career guidance and counseling. • If career guidance and counseling will add to the RSA workload, they need more resources. • Post-COVID, consider whether more online information platforms can help students understand their options (company photos and videos, occupational information, sniffing/trial placement options)
19) Increase attractiveness by adding provisions for permeability into the law
<ul style="list-style-type: none"> • Discuss with CCIS and professional associations: what are career paths within companies? How do companies see people progressing within occupations/occupational clusters? • Identify opportunities for PET, applied degrees, etc. • Ensure 1) Further formal qualifications from all starting points and 2) clear transitions across levels and types as defined by the NQF • A highly permeable system offers PET (non-university tertiary) options up to NQF level 8. • When developing LDE profiles, various options for further education and/or training should be considered and shown.
20) Regulate training alliances among employers (especially SMEs)

<ul style="list-style-type: none"> • Add an article to the LDE that allows for and regulates training alliances, possibly through a specific bylaw.
21) Increase support to CCIS and improve processes for trainer training, company certification, and training alliances
<ul style="list-style-type: none"> • Adjust the LDE to make the company certification and trainer training processes smoother
22) Establish research and development funding to incentivize bottom-up improvement among actors in the field
<ul style="list-style-type: none"> • Add an article to the LDE on quality assurance • Add an article to the LDE on research, development, and monitoring • Dedicate resources and processes to these goals • Emphasize areas not covered by other institutions (e.g. IIE), for example WBL
23) Add provisions for LDE system-level monitoring, information, and improvement across education and employment
<ul style="list-style-type: none"> • Add provisions to the law describing how LDE will be monitored and what information will be collected • Focus on the interface between education and employment (e.g., WBL) • Publish an annual report on facts and figures related to LDE VET
24) Increase the number and variety of LDE profiles, especially profiles that serve girls (transitional article)
<ul style="list-style-type: none"> • Add a transitional article to the LDE articulating procedures for increasing the number and variety of LDE VET profiles according to labor market demand • Use data from monitoring and evaluation to ensure that new profiles support equity and the inclusion of girls in LDE VET (e.g. administration, healthcare). The goal is not to force girls into existing LDE VET profiles, but to include the profiles that already serve girls.

The recommendations—and the guiding principles upon which they are based—should provide a starting point for the most important interventions and adjustments during the total revision of the LDE. Because they are based on stakeholder input and research in Serbia, they are tailored to the Serbian context while incorporating the elements necessary to make any dual education system successful.

Appendix

Previous Reports in this Project on LDE Implementation

Renold, U., Caves, K., Maldonado-Mariscal, K., Oswald-Egg, M. E., Markovic, J., Veselinovic, Z., Stankovic, D., Ceneric, I. & Todorovic, M. (2019). Implementation of the Serbian law on dual education: First report on drivers and barriers in the pre-implementation phase (No. 129). *KOF Studies*.

Renold, U., Caves, K., Oswald-Egg, M. E., Maldonado-Mariscal, K., Marcovic, J. Veselinovic, Z., & Todorovic, M. (2020). Implementation of the Serbian law on dual education: Second report on barriers and drivers in the implementation phase. (No. 7) *CES Studies*.

Renold, U., Caves, K. M., Oswald-Egg, M. E., Markovic, J., Veselinovic, Z., & Todorovic, M. (2020). Implementation of the Serbian Law on Dual Education: Third Report on Drivers and Barriers. *CES Studies*, 8.

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Renold, U., Caves, K. M., & Oswald-Egg, M. E. (2021). Implementation of the Serbian Law on Dual Education: Fourth Report on Drivers and Barriers in the Implementation Phase. *CES Studies*, 14.

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