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ENESAT 2020-2024

Key lessons on diversity and determinants of Centres of Vocational Excellence and main findings for policy work

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Grammarly was utilised for preliminary language correction and grammatical proofreading of the manuscript.

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PREFACE

This report has been produced by Economics & Data ED23 for the ETF. The report is only possible because of the careful self-assessments carried out by the Centres of Vocational Excellence (CoVEs) staff during the two cycles of self-assessment. The ETF designed the survey tool in consultation with members of the ETF's Network for Excellence.

Contributions by Ben Kriechel, Vanessa Diener, and Maryna Melnyk. Grammarly was utilised for preliminary language correction and grammatical proofreading of the manuscript.

CONTENTS

1. INTRODUCTION

This report analyses the three cycles of self-assessment carried out by the members of the ETF's Network for Excellence, in 2020-2021 (Cycle 1), 2022-2023 (Cycle 2), and 2023-2024 (Cycle 3), to provide statistical support for policy work and reporting on CoVEs. Thus, it provides an update to the previous report (ETF, 2024).

In 2020, the ETF established the ETF's Network for Excellence (ENE), an international network of Centres of Vocational Excellence (CoVEs), including nearly 350 vocational schools and centres from regions such as the EU, EaP, Africa, SEMED, SEA, SEET, CA (Kazakhstan), SAM (Chile), SA (Nepal). The scope of the ENE self-assessment tool (ENESAT) is to help ETF's Network for Excellence (ENE) members build a shared understanding of vocational excellence, gauging their level of development compared to what is expected of a centre of vocational excellence (CoVE). The tool also enables the gathering of information about the developmental priorities of network members. As such, it's useful for identifying key shared priorities and building partnerships. The tool enables CoVEs to identify their strengths and weaknesses and plan effective improvement strategies.

The ETF developed a framework to create evidence for excellence using an online self-assessment tool, ENESAT – ENE Self-assessment Tool. ENESAT has been developed to enable network members to understand better the different dimensions and levels of excellence, as well as their own level of development. The current version of the ENE Self-assessment questionnaire is available in three languages (English, French and Russian), is based on 10 dimensions of vocational excellence:

A. Education-business collaboration and cooperation

B. Pedagogy and professional development

C. Autonomy, institutional improvement and resources

D. Lifelong learning in VET

E. Skills for smart specialisation – mobilising innovation, ecosystems and SMEs

F. Industry 4.0 and digitalisation

G. Going green – supporting sustainable goals

H. Inclusion and equity

I. Entrepreneurship and enterprise

J. Career education and guidance

Dimensions H, I and J were added in the second cycle and continued in the third cycle. The survey assesses the organisation's path or position in achieving excellence. Within each dimension, the indicators are organised into three development levels:

- Foundational
- Developing
- Mature

The combination of items is subsumed in the Development Score of a dimension. The items within each dimension are also grouped to cover achievements at the foundational, developing and mature levels of development. Since ENE is concerned with developing excellence and its transmission, each dimension includes a 'Leadership and Collaboration' section that focuses on transmitting excellence within the specific dimension, e.g., through organising or leading networks, collaborations, and partnerships in which the school takes a leading or coordinating role. These items are subsumed into a Leadership Score (by dimension).

Within each dimension, each item or indicator is evaluated according to the following scale:

a. Yes (this is achieved or done)

b. To some degree (but not completely)

c. No (it is not implemented or done)

d. Not relevant

e. Don't know

The first three options are used in the analysis of the level of implementation within each indicator. As an additional follow-up, respondents who indicate that an item is not implemented, by answering 'No', are asked to indicate whether the item is planned to be implemented:

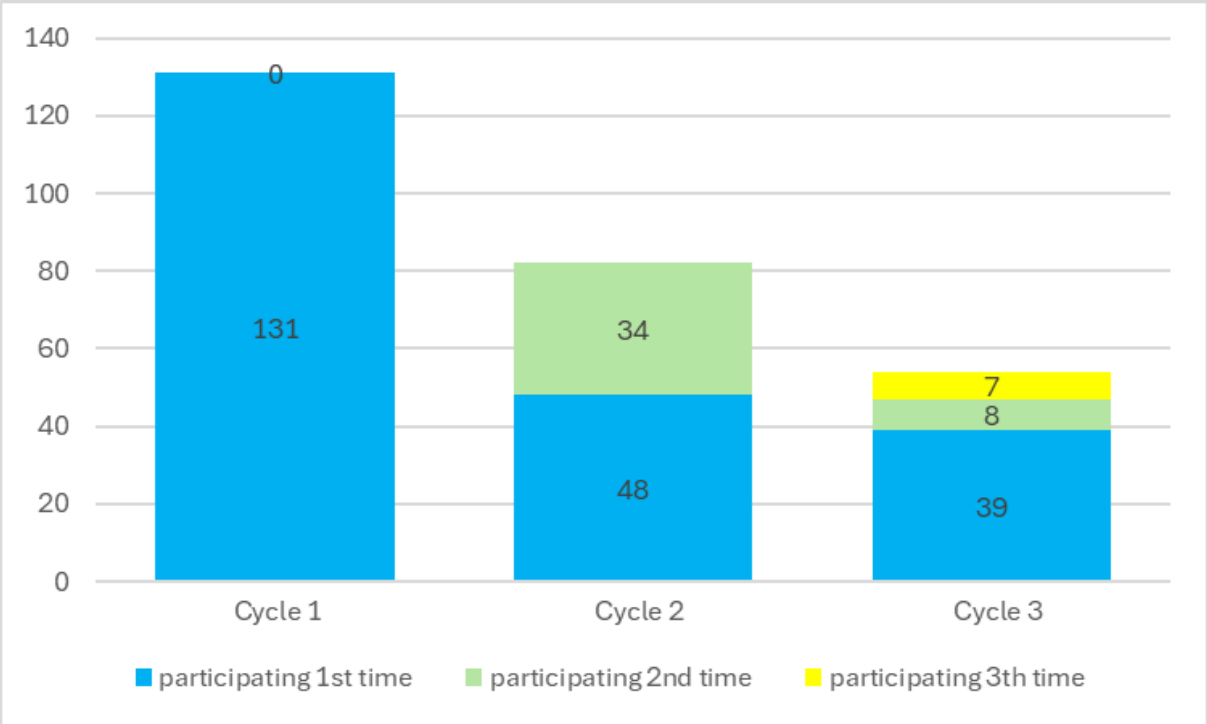
c1. We will do it within 2 years;

c2. We will do it, but it will take longer than 2 years;

c3. We are not planning to do it.

The first cycle of ENESAT was conducted using the Alchemer platform and included 131 CoVEs completing the self-assessment questionnaire. The first cycle consisted of 2 waves. In the first wave, 72 CoVEs took part, and in the second wave, another 59 CoVEs. The main questions about the dimension were the same. However, after the first wave, the background section was revised. In the second round, questions about the size, educational phases, and sector of the provided training of CoVEs were added, which were not in the first round of the first cycle.

Figure 1.1: Participation across cycles (individual organisations)



Note: Distribution of organisations responding.
Source: ENE Self-assessment database.

The second cycle of ENESAT used the LimeSurvey environment. The survey deployed during the second cycle was the same as the first, except that it added three new dimensions (H, I, J) to account for the aforementioned excellence framework and to evaluate progress. Respondents included first-

time participants (48 CoVEs) and repeat participants (34 CoVEs), yielding a total of 82 respondents in this cycle.

The third cycle of ENESAT was also conducted in LimeSurvey during 2023-2024. The questions remained the same as those from the second cycle. A total of 39 CoVEs participated in the survey for the first time, 8 CoVEs participated again, and 7 CoVEs participated for the third time, resulting in an additional 54 respondents.

A total of 267 responses were received across all cycles. These were based on 218 individual organisations, 35 of which participated in 2 cycles and 7 of which participated in 3 cycles (See Figure 1.1).

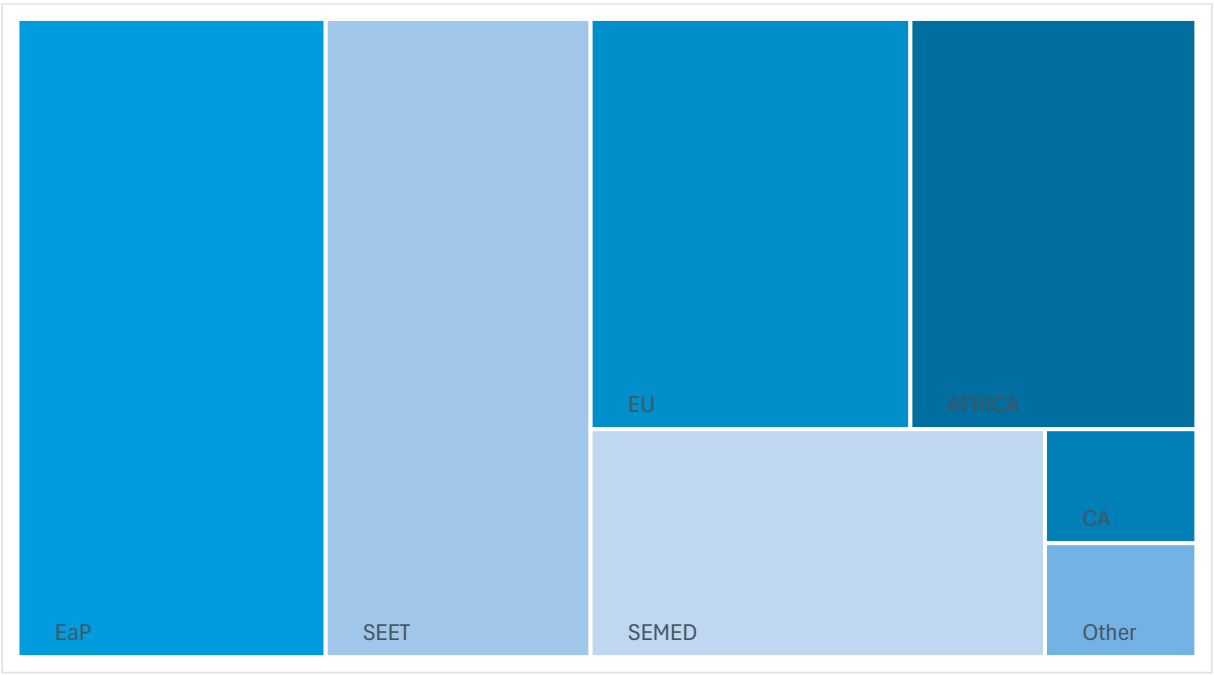
2. DESCRIPTION OF PARTICIPATING COVES

Country and region distribution

This chapter will describe the composition of the ENESAT by country, region, sector of training provided, size of the CoVEs, phases of education offered by the CoVE, and domain of excellence. 218 CoVEs responded to the survey, 7 participants in three cycles, 35 in two cycles, and 176 participants in only one cycle.

The regional distribution for all survey participants shows that 26% of the CoVEs are in Eastern Europe, 23% in SEET, 17% in the EU, 16% in Africa, and 14% in SEMED. The CA region was represented by 5 centres from Kazakhstan in Cycles 1 and 2. The Other region was represented by 1 centre from the Philippines in Cycle 2 and several representatives from Chile, Nepal, Malaysia, and Thailand in Cycle 3. (See Figure 2.1).

Figure 2.1. Regional distribution of CoVEs



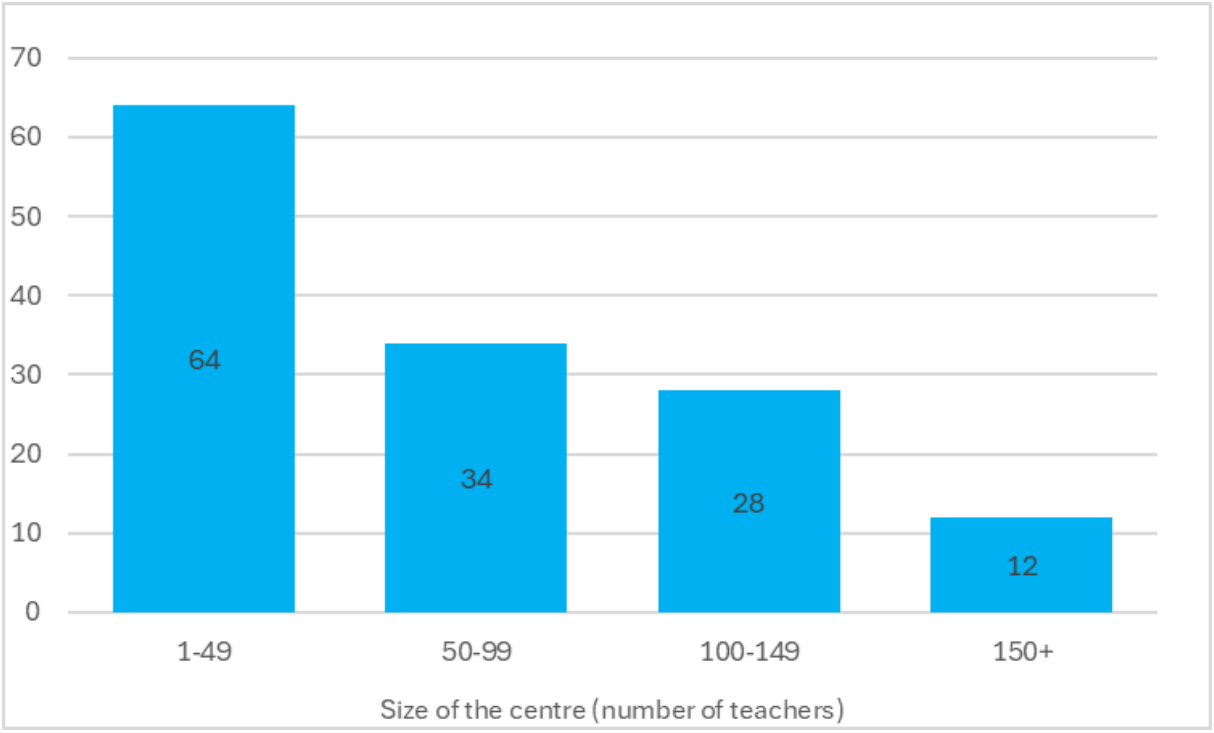
Notes: A total of 218 participating organisations participated in all Cycles.
Source: ENE Self-assessment database.

Over the 4 years of the project, there has been a significant expansion of the regional coverage of participants. In the first cycle, the largest number of participants were from Eastern Europe (42 centres, of which 27 were from Ukraine), followed by SEET (35 centres, 28 of which were from Turkey), and 26 CoVEs were from Africa. In the second cycle, EaP remained the strongest region with 25 centres, while Europe came in second with 24 participants, 15 of whom were from Spain. The third cycle was supplemented by such new countries as Jordan (12 schools), BiH (4 schools), and North Macedonia (2 schools). In this way, 19 CoVEs from SEMED, 10 from SEET and 9 from the EU participated in the survey of the 3rd cycle. It should also be noted that in the initial phase of ENE, specific CoVEs were identified, while the network was subsequently expanded to include schools that wished to participate.

Description of the participants by size

Figure 2.2 shows that most CoVEs (64 centres) have between 1 and 49 teachers. Only 12 CoVEs have a staff of over 150 employees. The size of the CoVes is based on question Q4. Respondents chose a single answer from these categories: 1-49 teachers in the centre, 50-99, 100-149, and 150+. Thirty-seven respondents did not answer, all of whom were from the first cycle. Therefore, 138 CoVEs out of 218 responded to this question.

Figure 2.2: Size of CoVEs by number of teachers (across all cycles).

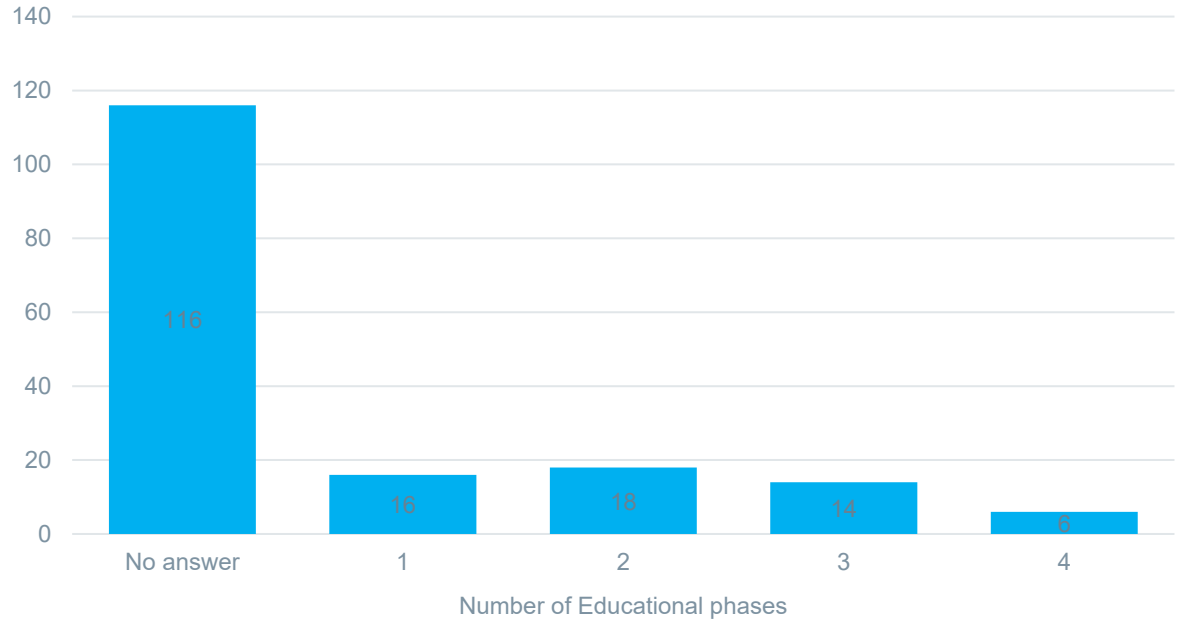


Notes: 138 CoVEs answered this question in all cycles from a total of 218 CoVEs.
Source: ENE Self-assessment database.

Description of the participants by education phase

CoVE can offer education at various levels, depending on the school, the underlying qualification framework, and how CoVEs or schools are organised. They can provide training at levels such as Secondary Education (ISCED 3), Post-Secondary, Non-Tertiary Education (ISCED 4), Tertiary or Higher Education (ISCED 5), and Non-formal Adult/Continuing Education. Multiple responses were possible. Based on the questionnaire's answers, we can only specify the composition for CoVEs from the second cycle onwards: Figure 2.3 shows that most CoVEs (116 out of 170 centres) did not answer this question. This may be due to the inconsistency or difficulty in identifying national qualifications frameworks. In future, we recommend adding a general "National education level" option to the answer choices. The remaining centres are evenly spread between 1 and 3 levels of education. Six CoVEs selected all phases of training in their activities.

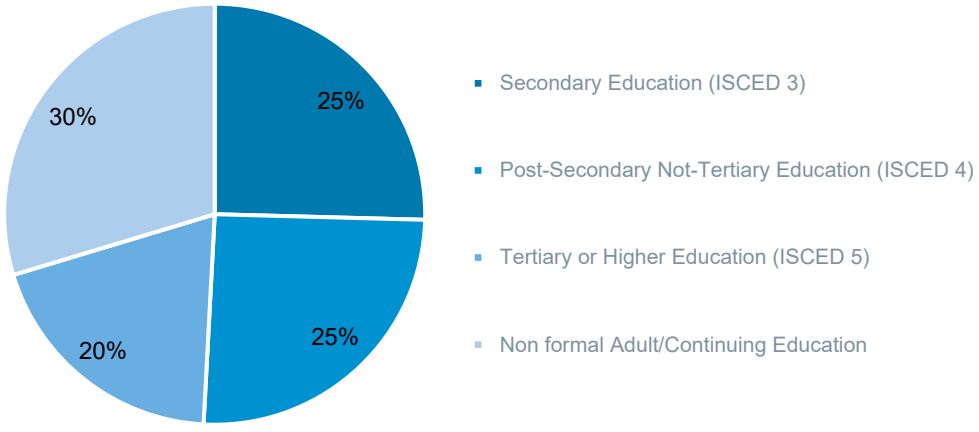
Figure 2.3: Number of educational phases in CoVEs in all cycles.



Notes: 170 CoVEs from 218 CoVes answered this question in all cycles. (cycle 2 and 3)
Source: ENE Self-assessment database.

In total, we received 118 choices by educational phase from 128 centres. The percentage distribution of these answers is shown in Figure 2.4. Services for training and education in Secondary, Post-secondary, and Informal education are equal (25%). Fewer CoVEs provide training in higher education (20%), while more do so in non-formal education (30%). Most responses to this question were from Africa and the EU centres. The CA region, represented only by Kazakhstan, made no choice.

Figure 2.4: Distribution of CoVEs by educational phases, all Cycles, %

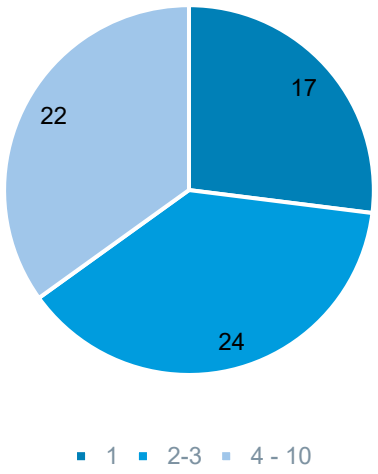


Notes: There were 170 CoVEs excluding wave 1 of cycle 1, of which 128 answered the question, and 42 were missing.
Source: ENE Self-assessment database.

Description of the participants by sector

Respondents could identify all sectors of services provided out of 15 different fields. Most respondents, 155 out of 218, did not answer this question. For example, participants from the CA (Kazakhstan) and the “Other” region did not answer this question. Those who answered the question were divided among those with one sector (17), having 2-3 sectors (24), and having 4 or more sectors (22), see Figure 2.5.

Figure 2.5.: The distribution among CoVEs of all cycles by the number of sectors indicated (count of CoVEs that provided an answer)



Notes: There were 218 CoVEs in all cycles. The counts are based on those who answered the relevant question.
Source: ENE Self-assessment database.

In total, we received 225 identified training sectors from 218 participants. Figure 2.6 shows the distribution of the schools' training fields based on all fields mentioned (multiple fields within one centre were possible). The most common fields are engineering (18%), followed by logistics (10%), agriculture (10%), and hospitality, construction, and general subjects (8% each). The least common training is in the mining and metallurgy sector (1%) and manufacturing (2%).

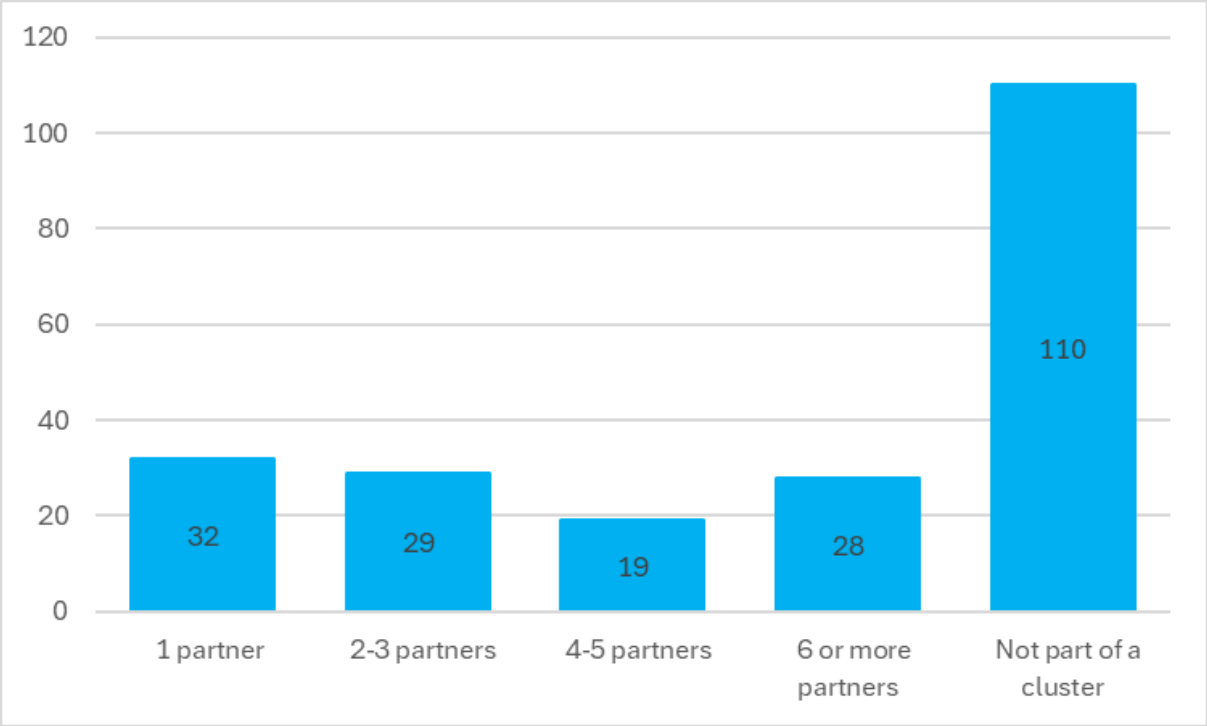
Figure 2.6.: Sectoral distribution (all cycles)

Notes: 202 sectors were selected from 218 CoVEs in all Cycles.
Source: ENE Self-assessment database.

Description of CoVEs by participation in the cluster

Of the 218 survey participants, 108 were part of clusters or associations with other vocational schools. Figure 2.7 illustrates their distribution according to the number of schools in the network.

Figure 2.7.: Participants in the cluster by number of schools in the network (counts)



Notes: 218 CoVEs from all cycles.
Source: ENE Self-assessment database.

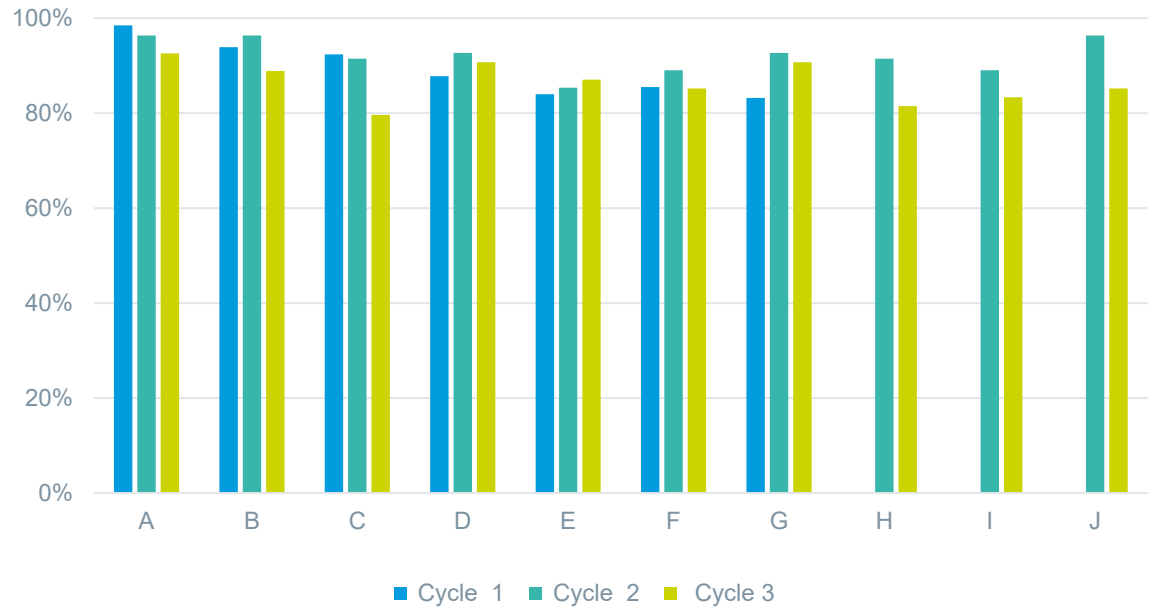
3. OVERALL ANALYSIS

Choice of Dimension

Organisations were invited to select or deselect dimensions that were relevant to them. In this way, the perceived importance of the dimensions within the ENE can be determined, and its dynamics can be understood by comparing the developments over the cycles. The propensities to answer the questions in the various dimensions were quite high. For example, 98% of the organisations in Cycle 1 answered Dimension A, while 96% did so in Cycle 2 and 93% in Cycle 3. The propensity to answer a dimension remained relatively stable, as Figure 3.1 shows. There were slight decreases in the dimensions 'Education-business collaboration and cooperation' (A) and 'Autonomy and Improvement' (C). In all other dimensions, there were slight movements. The new dimensions 'Inclusion and Equity' (H), 'Entrepreneurship and Enterprise' (I) and 'Career Education and Guidance' (J) were also answered by a large number of the respondents, all scoring close to or over 90% in Cycle 2, while the group of schools answering in Cycle 3 had somewhat lower propensity to answer these dimensions.

Overall, the propensity to select a dimension was quite high in Cycles 2 and 3, ranging from 80% to 96%. This propensity remained relatively stable across all dimensions. In Cycle 3, there was a slight decrease in the choice of all dimensions, from 2 percentage points for D – 'Lifelong learning in VET' and G – 'Going green` to 11 percentage points for J - `Career Education and Guidance` and 10 percentage points for H - `Inclusion and Equity`. On the contrary, the choice of dimension E - `Skills for smart specialisation' increased by 2 percentage points in Cycle 3.

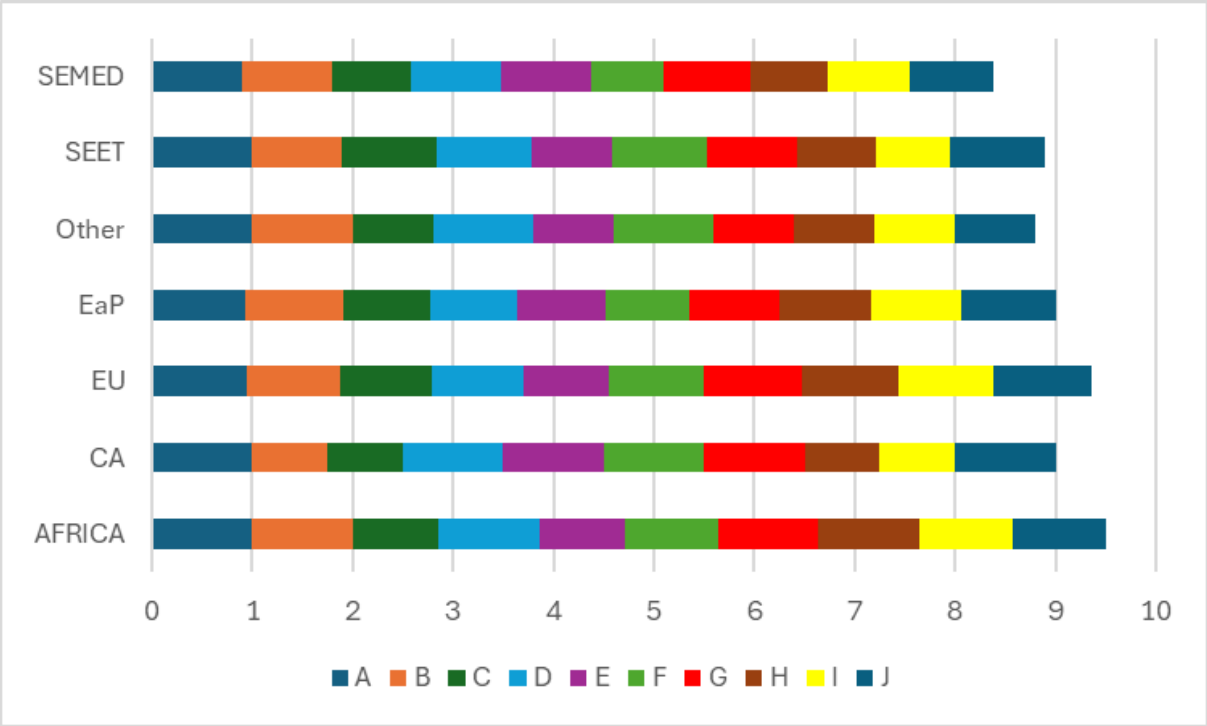
Figure 3.1: Choice of Dimension



Source: Own calculations based on ENE Self-assessment database

There is no specific regional pattern in the selection of dimensions. In Figure 3.2, using cycle 3 as an example, we observe a fluctuation in choice from 7.2 to 10 dimensions. Africa (9.5) and the EU (9.4) chose the most dimensions. SEMED chose the least, an average of 8.8 dimensions. A – 'Education-business collaboration and cooperation' was chosen most often (95% of respondents), C – 'Autonomy, institutional improvement and resources', E- `Skills for smart specialisation', and I was chosen the least by 86-87%.

Figure 3.2. Choice of Dimension for Answers by region in cycle 3



Notes: 54 respondents in Cycle 3. Source: Own calculations based on ENE Self-assessment database

Level of Maturity

The CoVE self-assessment identifies an organisation's level of maturity within the different dimensions. The self-assessment tool calculates a development score that measures the overall level of development in relation to all of the underlying indicators within a particular dimension. These indicators are ranked by category as foundational, developing, or mature.

The score is the sum of items that are fully covered (one point) and those that are partially covered (half a point). Across all items of the development level, a total Development score is derived, which is translated into the level of maturity, as shown in Figure 3.3. Based on these scores, a level of maturity, ranging from foundational to developing and mature, can be calculated.

In the figure, the share of organisations reaching the most advanced level of mature is depicted first (on the left-hand side), to which the organisations in the developing level are added, while the least developed, foundational organisations are on the right-hand side. Education organisations performed best in dimensions B - Pedagogy and professional development, A - collaboration with businesses and cooperation with other education institutions, and D - Lifelong learning in VET. The weakest dimensions were G - Going Green, E - Skills for Smart Specialisation, and F - Industry 4.0 and Digitisation. Dimension C on autonomy, institutional improvement and resources ranked in the middle. Towards the last cycle (3), the highest level of maturity is more common across the dimensions. The exception is the dimension "Going Green," which is declining across all cycles.

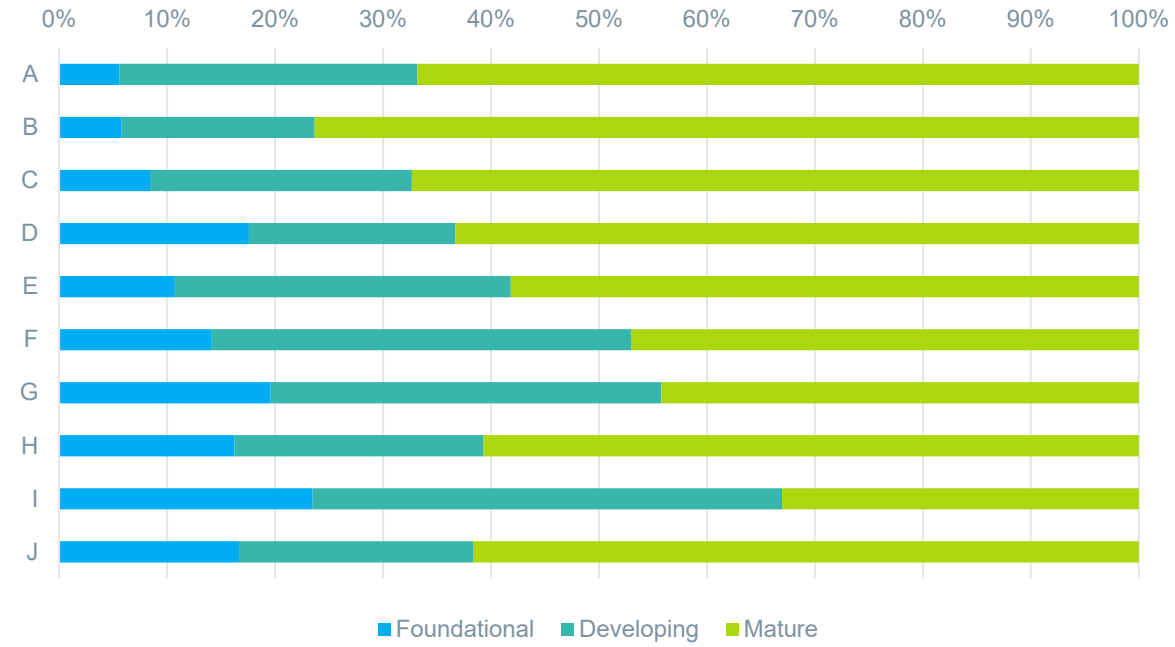
Figure 3.3: Level of Maturity (all answers)

Notes: All answers across all cycles are used. Thus, multiple answers (up to one per cycle) are allowed by a school.
Source: Own calculations based on ENE Self-assessment database

A corollary to the above is Figure 3.4, which uses only the most recent answer per CoVE. This implies that later cycles are used if an organisation has not participated in a previous cycle. The interpretation of the figure suggests that we can use the level of maturity to identify the main areas where improvements can still be made. Put simply, the higher the percentage of organisations that have not yet reached the level of maturity, the more improvements can be achieved among the organisations, and the more efforts should be focused there.

The results are similar to those shown in Figure 3.3. Many CoVEs still have room for improvement across various dimensions. The percentage of organisations reaching a mature level in each dimension ranges from 77% in dimension B to 36% in dimension I. Nevertheless, at least the developing maturity level has been attained in many dimensions. Still, larger proportions of only foundational maturity are present in dimensions D, G, and I, all of which exceed 15%.

Figure 3.4: Level of Maturity (most recent answer)



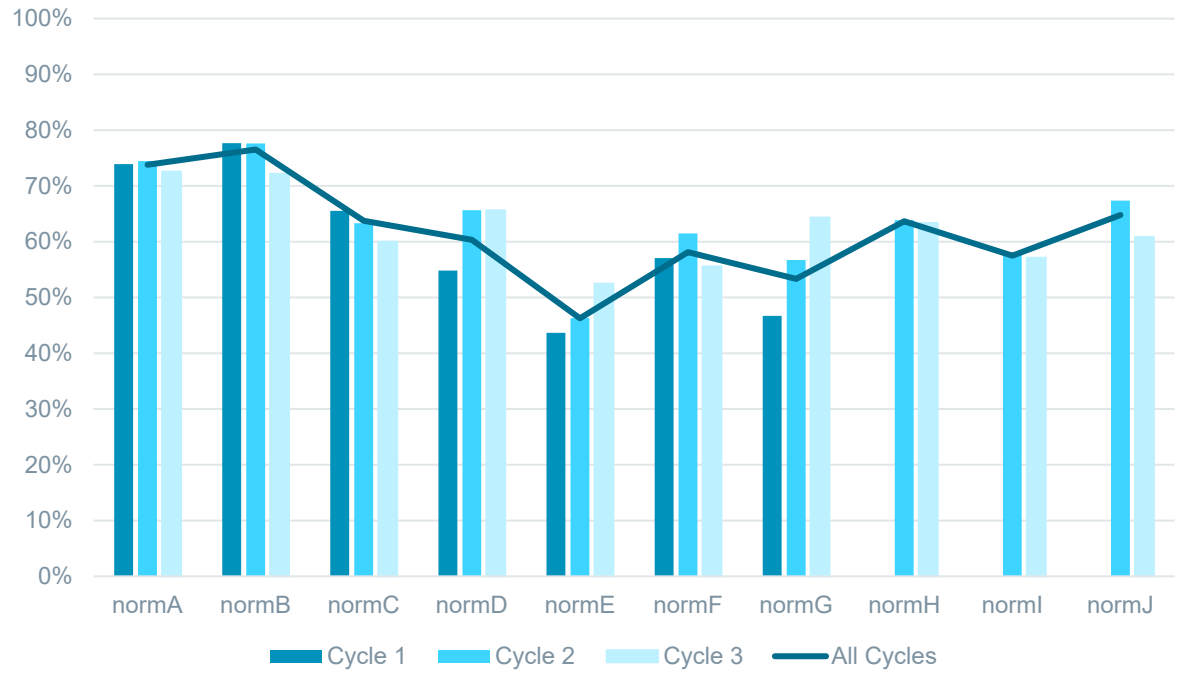
Notes: Only the last observation per CoVE is used. Source: Own calculations based on ENE Self-assessment database

Comparing Outcomes across Dimensions

To compare the outcomes by dimension, a normalisation needs to be performed. The outcome score, based on questions that assess the level of development or capabilities of a CoVE in that dimension, is divided by the maximum outcome that could be achieved. Figures 3.7 and 3.8 distinguish between the development and leadership scores. Questions that evaluate the extent to which a foundational basis within the dimension is reached are included under the development score. The second element is the leadership score, which assesses the capability of a CoVE to organise and lead networks, providing mutual learning benefits within established networks and collaborations. As the dimensions are not equal in terms of underlying indicators or questions, we provide a normalised outcome expressed as a percentage achieved within a dimension. Thus, 100% represents a self-evaluation in which all questions have been answered, indicating that the element has been fully achieved.

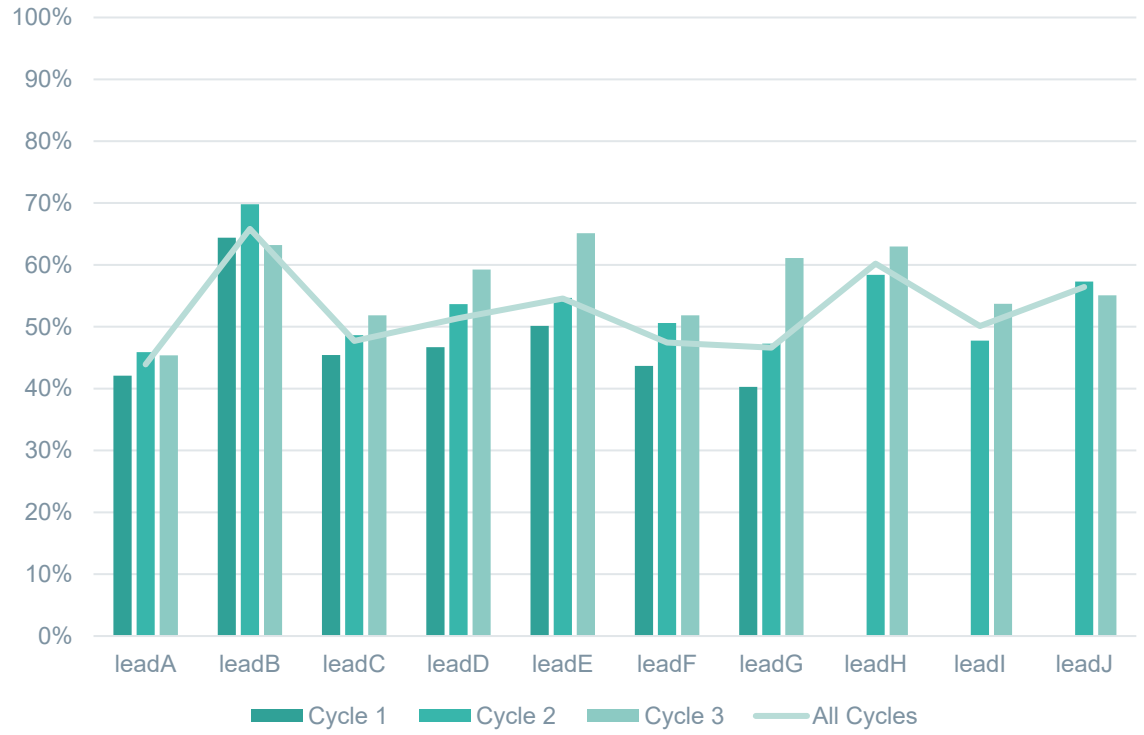
Figures 3.7 (Development Score) and 3.8 (Leadership) provide the outcome across all cycles. The line provides the outcomes across all cycles, whereas the individual (three) bars for each dimension stand for the outcome based only on a specific cycle. We can thus also easily see the development over time. Unlike the previous section, we now analyse not in terms of categories and across development and leadership points together, but by averages. Thus, the dynamics can be slightly different.

Figure 3.7: Outcomes of Development Score by Dimension (% of Total)



Source: Own calculations based on ENE Self-assessment database

Figure 3.8: Outcomes of Leadership Score by Dimension (% of Total)



Source: Own calculations based on ENE Self-assessment database

The development score (Figure 3.7) is highest in the Dimensions B, A, C, and J. The majority of schools are well-developed in Pedagogy and Professional Development (B), Education-Business collaboration (A), score well on Autonomy (C), and Career and Education Guidance (J). While there is

a slight decline in these dimensions, it is more pronounced for Autonomy (C); most of this is likely due to minor changes in the composition and underlying institutions of the answering CoVEs. There is also a noticeable improvement in scores for dimensions D – Lifelong Learning (LLL), E – Skills for Smart Mobilisation, and G – Going Green.

The leadership score is high in B—Pedagogy and Professional Development, followed by dimensions C (Autonomy), D (LLL), E (Skills for Smart Specialisation), and H (Inclusion and Equity). There is an upward trend for the dimensions that were already strong, namely C (Autonomy), D (LLL), E (Skills for Smart Specialisation), and H (Inclusion and Equity).

Regional and Institutional Differences

In this subsection, we examine some results and developments at the level of country groups (also referred to as regions in terms of country areas). We seek specific developments that can be linked to institutional differences across these regions. Under certain institutional frameworks, particular aspects may favour the development or leadership outcomes of a CoVE, while under others or different traditions, this might be reversed. An example of this is size: in some countries (regions), smaller CoVEs perform best, whereas in others, larger CoVEs do. We believe this is not merely coincidental but related to the foundational institutions that provide the legal and historical context for an education system, as well as the development and success of Coves. However, the number of observations is limited, so we cannot rule out the possibility that the outcomes are partly influenced by the selection and response behaviours of individual CoVEs.

The discussion by country group should thus offer some qualitative insight into possible relationships and aid in connecting institutions (which are not identified here or within ENESAT). Across all country groups, we can observe that regions with more partnerships tend to score higher in certain Dimensions (the development scores for C – Autonomy, G – Going Green, and I – Entrepreneurship, as well as the leadership scores for C – Autonomy and H – Inclusion and Equity). While a stronger link between leadership scores and networks is expected, the connection between the development score and networks is promising. Ideally, networks also foster collaborations that benefit schools in all or specific aspects (dimensions) of their work. Whenever a strong network member provides insights or concepts that are transferable to other CoVEs within the network, one of the main goals of having a network is achieved. It is likely to be more significant for the dimension mentioned above than for others, but the ENESAT data does not provide enough insights to determine the underlying reasons.

We only discuss regions with more than ten observations, which allows us to ensure the validity of the results. The regions are Sub-Saharan Africa, the EU, EaP, SEET, and SEMED.

Sub-Saharan Africa

In Sub-Saharan Africa (SSA), many schools are smaller, with only 1-49 teachers. Those smaller schools also perform better in most dimensions than schools that are larger in the region. Some exceptions exist, where very large schools (150+ teachers) show the highest performance. Schools have a higher propensity to form partnerships.

The development scores of African CoVEs are above average for dimensions A—C (Education-Business Collaboration, Pedagogy, and Autonomy) and for G (Going Green). They perform below average in D (LLL), E—Skills for Smart Specialisation, F—Industry 4.0 and Digitisation, and J—Career and Education Guidance. This is also reflected in the leadership skills.

Eastern Partnership

In the Eastern Partnership (EaP) countries, we mostly observe mid-sized CoVEs. There is also a clear trend that mid-sized CoVEs perform better, with the highest scores achieved by those with between 50 and 99 teachers. The Eastern Partnership countries tend to excel in development scores (except for

dimension G—going green), while they are average in leadership scores, except for H—Inclusion and Equity, where they perform well.

South-Eastern Europe and Türkiye

The CoVEs in SEET countries exhibited lower development scores across all dimensions, which is also reflected in most leadership scores, except for leadership in C—autonomy, institutional improvement, and resources.

Southern and Eastern Mediterranean

The CoVEs in SEMED countries displayed a lower development score across all dimensions, which is also evident in most leadership scores, except for leadership in B—pedagogy and professional development and in E—skills for smart specialisations.

Schools in SEMED countries are generally small. Their larger size results in higher scores across many areas of development and leadership. Being part of a cluster also contributes to improved performance in nearly all dimensions.

4. SPECIFIC ANALYSIS BY DIMENSION

In the specific analysis by dimension, outcomes for all underlying indicators or questions are provided that contribute to the score within a dimension. The outcomes are supplied for each cycle; we use the complete data set. Therefore, CoVEs that participated in multiple rounds of the ENESAT will contribute their answers for each cycle in which they were involved.

4.1 Dimension A: Education-Business Collaboration and Cooperation

The first dimension, education-business collaboration and cooperation, refers to the partnership between educational institutions and businesses aimed at enhancing the learning experience and better preparing students for the workforce. It comprises 14 underlying elements.

Figure 4.1: Dimension A – Total Answers and Scores

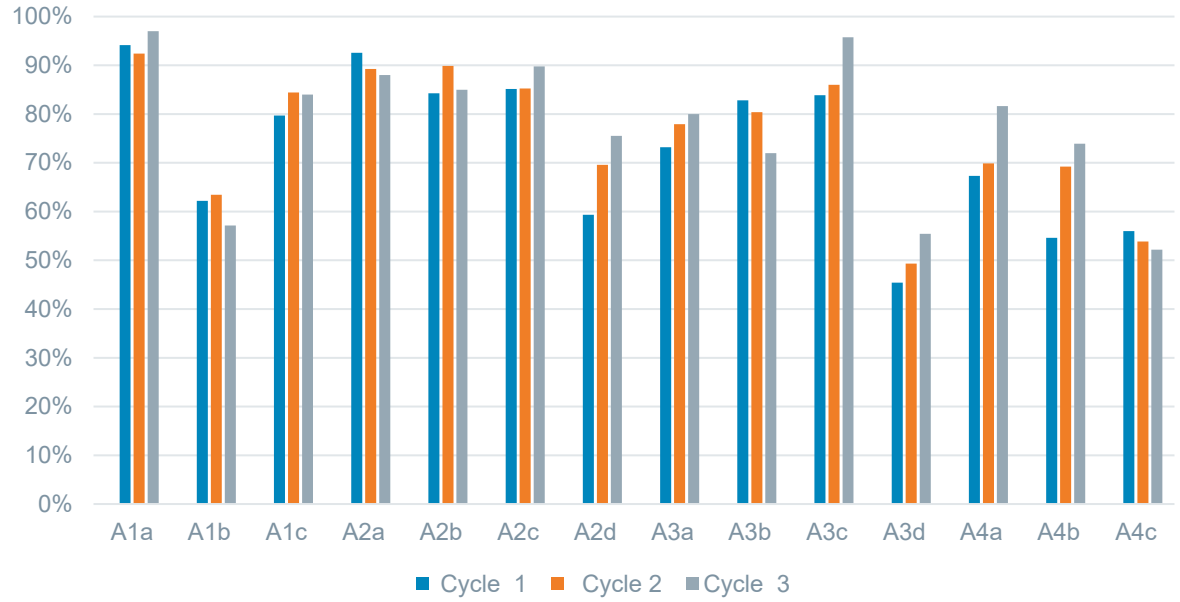
	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
A1a) The school or centre cooperates with enterprises so that all learners can carry out learning in the workplace (placements or internships) to meet formal requirements specified in the relevant qualification or curriculum frameworks.	130	93%	80	93%	50	97%
A1b) Representatives from employers are formally involved in school governance, for example, they are included in the Governing Body.	125	61%	79	64%	49	57%
A1c) The school or centre regularly consults employers in relation to the curriculum.	130	78%	78	85%	50	84%
A2a) A senior person (for example, Deputy Principal) in the school or centre leads and coordinates school-industry cooperation.	130	91%	80	89%	50	88%
A2b) The school or centre has signed long-term memoranda of understanding with at least two enterprises which bring about annual cooperation (for example, to provide work placements for learners or visits).	129	83%	80	90%	50	85%
A2c) The school or centre cooperates with enterprises to organise work placements for all learners, which are equivalent to at least 10% of curriculum time.	130	84%	79	85%	49	90%
A2d) At least one teacher benefits from at least 5 days of training or work placement (or work) in an enterprise every year.	125	58%	73	69%	47	76%
A3a) School or centre systematically develops and updates a catalogue of training programmes designed to meet the needs of identified employers for both initial and continuing vocational training.	127	72%	78	78%	50	80%

	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
A3b) Enterprises regularly contribute to assessment processes for students, for example, participating in assessment juries.	130	82%	80	81%	50	72%
A3c) Tracer studies demonstrate that at least 30% of graduates enter employment or self-employment or further study in a sector related to their programme.	129	83%	76	86%	47	96%
A3d) Enterprises contribute to infrastructure, equipment or other costs in the school or centre (value of contribution at least € 5000 over the last two years).	122	45%	75	49%	46	55%
A4a) The school or centre forms a lasting institutional partnership with specialist national or regional employer associations or sector organisations to develop skills over the medium term, for example, developing joint curricula or implementing joint skills surveys.	129	66%	79	69%	49	82%
A4b) The school or centre cooperates with other schools to coordinate placements or other work-based learning for adult learners.	121	54%	79	68%	46	74%
A4c) The school or centre cooperates with other schools to coordinate placements for teachers in industry or to organise training for teachers in the workplace.	127	55%	79	53%	46	52%

Source: Own calculations based on ENE Self-assessment database

Schools or centres collaborate with businesses to provide students with workplace learning opportunities, such as internships or placements, that fulfil formal requirements outlined in relevant qualification or curriculum frameworks (A1a). In this area, most education and training institutions perform very well. Much weaker is the representation from businesses in being formally involved in school governance, potentially serving on the Governing Body (A1b); however, among those that have not yet implemented it, half indicate that they plan to do so within two years or after two years. It is more common for schools or centres to regularly consult businesses regarding curriculum matters to ensure relevance and applicability in the workplace (A1c). There have been only slight changes across these elements over the cycles.

Figure 4.1: Dimension A – Underlying Scores



Source: Own calculations based on ENE Self-assessment database

Four elements assess the development of education-business collaboration. It aims to further strengthen cooperation between education and industry. Schools tend to score highly on the first two items: a senior person is usually available in the school or centre to coordinate collaboration with industry (A2a). Additionally, it is common for schools or centres to establish long-term agreements with at least two businesses for annual cooperation, including providing work placements for students or organising visits (A2b). A third item (A2c) measures whether the school or centre collaborates with businesses to organise work placements for all students, accounting for at least 10% of curriculum time. Most organisations are able to provide this. The score is quite low on the fourth item (A2d), which measures whether teachers benefit from at least 5 days of training or work placement in a business each year. However, this has improved significantly from cycle 1 through cycle 3. This also aligns with the school's intentions. They indicated, in the first cycle, that about 40% of those who had not yet implemented any measures planned to do so within 2 years, with an additional 30% planning to do so after two years.

In the third group of items, which measures maturity, individual items should reflect the extent of well-established and systematic cooperation between the school or centre and businesses. Here, item A3a indicates that the school or centre systematically develops and updates a catalogue of training programmes designed to meet the identified needs of employers for initial and ongoing vocational training. Businesses should regularly contribute to student assessment processes, potentially participating in assessment juries (A3b). To assess the school-to-work transition, tracer studies should demonstrate that at least 30% of graduates enter employment, self-employment, or pursue further study in a sector related to their programme (A3c). These three items generally score quite well. However, the final item, which involves businesses contributing to infrastructure, equipment, or other costs in the school or centre, with a contribution of at least €5,000 over the past two years (A3d), scores lowest in this dimension. Nevertheless, it shows upward development across cycles.

The final group of indicators – lead and coordination – focuses on cooperation among schools and education centres. On average, scores in this group are lower than in the previous groups. Elements include that the school or centre forms lasting institutional partnerships with specialist national or regional employer associations or sector organisations to develop skills over the medium term. This could involve developing joint curricula or implementing joint skills surveys (A4a). Additionally, the school or centre collaborates with other schools to coordinate placements or other work-based

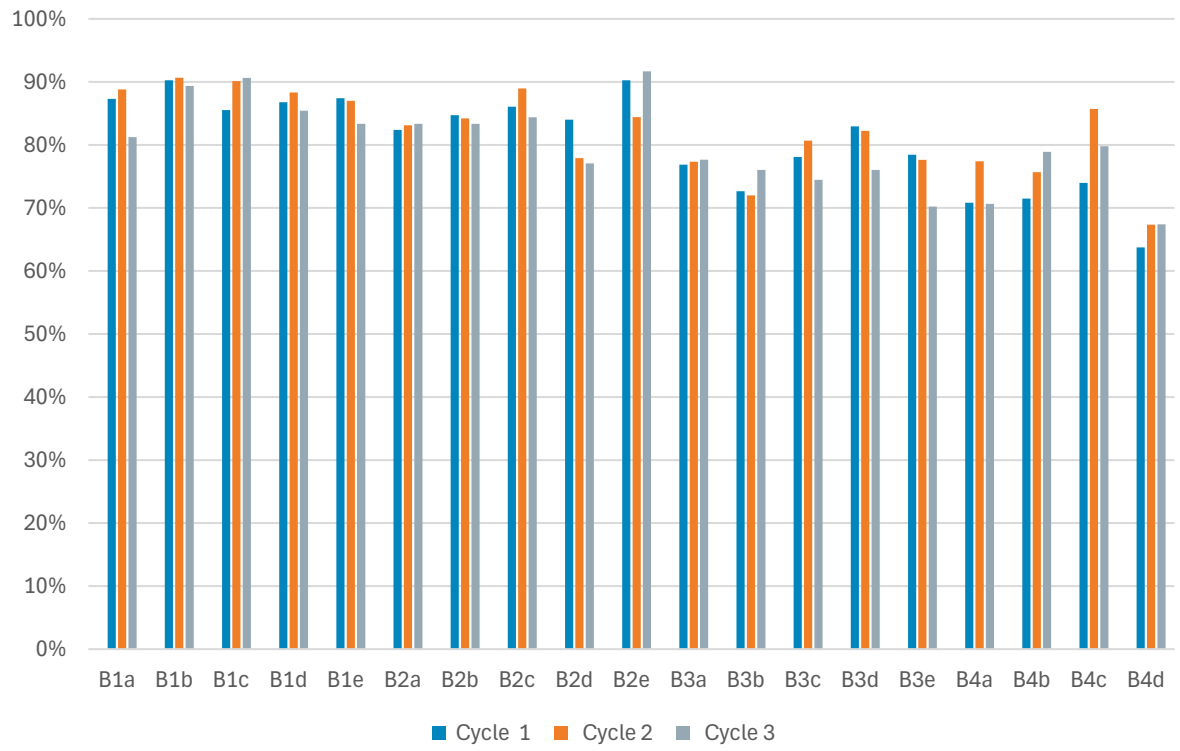
learning opportunities for adult learners (A4b). Although still weaker compared to earlier groups, this item has shown significant improvement in the second cycle. This is expected, as two-thirds of those without implementation had indicated plans to do so within or beyond two years. Finally, there is room for improvement in the score regarding how the school or centre collaborates with other schools to coordinate placements for teachers in industry or organise workplace training (A4c).

4.2 Dimension B: Pedagogy and professional development

The second dimension offers insights into the pedagogic and professional development within education and training institutions. Overall, the scores are high. Only in questions about leadership and coordination roles are the responses somewhat lower.

In the first set of criteria, the school or centre must establish the foundation for pedagogical and professional development, including appointing a pedagogue, pedagogical coordinator, or lead teacher responsible for professional development (B2a). There is a slight decline in the second cycle, but overall results remain high. Additionally, the school or centre should offer mentoring and induction for all novice teachers (B2b), both of which are vital for outstanding performance. At least 75% of the teachers at the school or centre have participated in at least one in-service training event, such as a seminar or workshop, within the past 12 months (B1c). Item B1d assesses the extent to which the theory taught and learning tasks are connected to real-world situations that students will face in their future work. Lastly, the technical, pedagogical, and personal knowledge, skills, and competencies of all staff members are suitable for teaching, collaboration, and supporting the welfare of learners (B1e).

Figure 4.2: Dimension B – Underlying Scores



Source: Own calculations based on ENE Self-assessment database

Five items assess the development of pedagogic and professional growth. Most items score highly again, although the average in cycle 2 is generally slightly higher than in cycle 1, while cycle 3 is somewhat weaker again. This does not apply to the fourth measure: Senior managers and

pedagogues regularly observe teaching and give feedback to all staff (B2d). All other measures remain reasonably stable: the school or centre systematically identifies training needs for all staff, for example, through interviews or surveys (B2a). All teachers at the school or centre consistently practise a range of pedagogies suitable for vocational subjects and diverse learners (for instance, active approaches like group work, problem-solving, critical thinking, and role play), item B2b. The school or centre systematically uses assessment data to evaluate and improve its performance, as measured in B2c. The school or centre regularly assesses the needs of all learners and offers specialised support to meet individual learning and wellbeing needs where appropriate (B2e); Cycle 2 scores slightly worse, but cycle 3 shows a recovery in this score.

The maturity is assessed based on five additional criteria, with lower scores noted in this area. Specifically, item B3b, which states that all educators and trainers must have relevant industrial or professional experience gained through work outside of teaching or through relevant enterprise placements and training, performs relatively poorly in this respect. This is likely to persist, as almost no organisation has indicated a planned improvement. To meet its training plan, the school or centre schedules its in-service training events at least three times a year (beyond attending external training), as assessed in B3a. While this score is toward the lower end, about one-third of the non-implementers plan to do so within two years. To maintain a connection to the labour market, at least 80% of educators and trainers collaborate regularly to prepare and support their instruction through activities such as mentoring, team teaching, or joint lesson planning (B3c). Systematic learning assessments are used to identify suitable learning tasks for individual and group learners (B3d). Lastly, the institution or centre evaluates the impact of professional development on teaching and learning quality. The collected data informs the development of future professional development programmes (B3e).

Table 4.2: Dimension B – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
B1a) The school or centre has a person (pedagogue or pedagogical coordinator, or lead teacher) in charge of professional development.	130	82%	77	89%	48	81%
B1b) The school or centre provides mentoring and induction for all Beginning Teachers.	131	85%	76	91%	47	89%
B1c) At least 75% of the teachers in the school or centre attended at least one in-service training event (for example, a seminar or workshop) in the last 12 months.	129	80%	77	90%	48	91%
B1d) Teachers of theory and of skills regularly set learning tasks that closely resemble real, up-to-date tasks in the world of work.	129	81%	78	88%	48	85%
B1e) All staff have appropriate knowledge, skills and competences (technical, pedagogical and personal) which qualify them to teach, collaborate and support the welfare of learners.	131	82%	78	87%	48	83%
B2a) The school or centre systematically conducts training needs identification for all of its staff, for example, through interviews or surveys.	130	77%	78	83%	48	83%
B2b) All teachers at the school or centre regularly practise a range of pedagogies that are appropriate to vocational subjects	129	80%	77	84%	48	83%

	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
and to different learners (for example, active approaches like group work, problem solving, critical thinking, role play).						
B2c) The school or centre makes systematic use of assessment data to evaluate and improve its own performance.	130	81%	78	89%	48	84%
B2d) Senior managers and pedagogues regularly observe teaching and provide feedback to all staff.	130	79%	78	78%	48	77%
B2e) School or centre regularly assesses needs of all learners and provides special support to meet individual needs (with respect to both learning and wellbeing) where appropriate.	131	85%	78	85%	48	92%
B3a) The school or centre plans its own in-service training events at least three times each year to achieve its training plan (in addition to participating in external training events).	125	68%	76	77%	47	78%
B3b) All teachers and trainers have relevant industrial or professional work experience, which they have either obtained outside of teaching or through placements and training in relevant enterprises.	129	73%	76	72%	48	76%
B3c)	121	76%	75	84%	47	74%
B3d) Regular assessment of learning is used systematically to decide what learning tasks should be set for individual learners and for groups of learners.	131	78%	76	81%	48	76%
B3e) The school or centre evaluates the impact of professional development on the quality of teaching and learning, and the information is used to plan future professional development.	131	74%	77	78%	47	70%
B4a) The school or centre supports the development of pedagogy across a group of other schools or learning centres, for example, through the offer of in-service training or by sharing instructional materials.	128	66%	74	77%	46	71%
B4b) The school or centre works in partnership with industry, universities or donors to design and organise in-service training for teachers and trainers.	129	67%	75	75%	45	79%
B4c) The school or centre participates in national or international networks to share good practices or research in teaching and learning.	129	69%	78	86%	47	80%
B4d) The school or centre has a budget to develop and provide in-service training (or can charge for in-service training).	128	60%	76	68%	46	67%

Source: ENE Self-assessment database

This section assesses the leadership and coordination of the school or centre in working with other institutions. The individual items are listed below. The school or centre promotes the enhancement of teaching practices through collaboration with other schools or learning centres. This is achieved by providing in-service training or sharing teaching materials. Additionally, the school or centre partners with industry, universities, or donors to design and organise in-service training for educators and trainers. Furthermore, the educational institution collaborates with national or international networks to

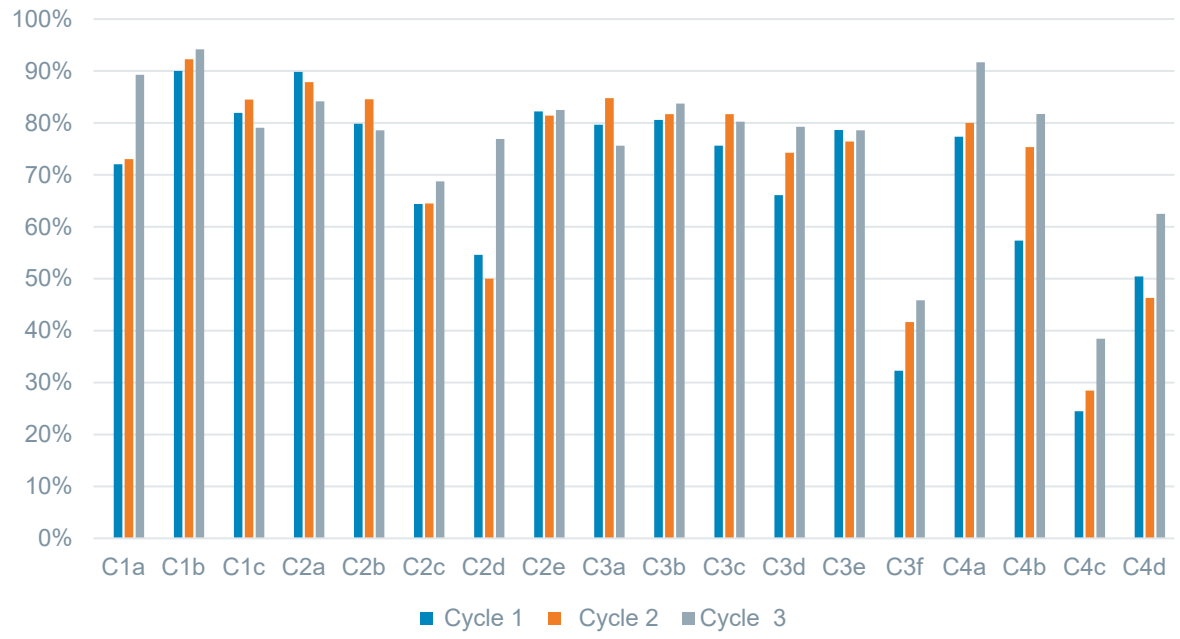
exchange effective methodologies and research in teaching and learning, which has grown significantly in Cycles 2 and 3. It also has adequate funding to create and deliver in-service training or the capacity to charge for it.

4.3 Dimension C: Autonomy, institutional improvement, and resources

This group of items assesses the availability or implementation of various services or processes that may be occurring in the school or centre, providing evidence of autonomy development, capacity for improvement, and resource availability.

Among the three foundational elements, scores are calculated. Generally, the observed averages are high, except for the first item, which assesses whether an independent Board of Governors with some elected members exercises authority and holds the principal accountable within the organisation. Planned improvements on this item are limited. The other two items—where the organisation has defined its own mission and institutional development plan (C1b), and where the school or centre has an institutional quality assurance system that it implements (C1c)—score higher. There is little change across cycles, except for the initial elements in Cycle 3.

Figure 4.3: Dimension C – Underlying Scores



Source: ENE Self-assessment database

Among the indicators reflecting developmental progress, three items are relatively straightforward: (C2a) The school or centre has the authority to enter into contracts independently with other organisations, such as businesses, training providers, and donors, e.g., to buy or sell services or equipment. (C2b) The school or centre can generate and retain income (for example, by selling training services); and (C2e) The school or centre has the authority to appoint its own fixed-term staff (for example, part-time teachers, maintenance staff). However, two items scored relatively low in both cycles: (C2c) The school or centre can modify nationally defined curriculum frameworks or profiles to tailor the curriculum to local needs, and in item (C2d) the Governing Body has the authority to appoint and dismiss the principal, with a slight decline in cycle 2 and a notable increase in cycle 3.

Among the items indicating mature development, only the final one appears to be problematic, as there is an increase in cycles 2 and 3: (C3f) The school or centre has the authority to take out loans, for example, to fund investment. The other items score highly in both cycles: (C3a) The school or centre plans and monitors its budget, deciding independently how to use the resources. (C3b) The school or centre has appropriate and sufficient laboratories, classrooms, and workshops, which enable it to develop the competences required by employers. (C3c) The school or centre has the appropriate and sufficient tools, equipment, infrastructure, and consumables necessary to develop the competences required by employers. (C3d) The school or centre has the authority to decide which learning programmes will be offered in the future and to discontinue current programmes if they are no longer needed.

The scores for lead and coordination are divided. While the first two scores are high, the last shows lower values in Cycle 2 but recovers in Cycle 3. Therefore, coordinating and planning collaborations and leading initiatives appears feasible: (C4a) The school or centre coordinates the planning and provision of training programmes with other skills providers. (C4b) The school or centre leads and sometimes initiates national or international projects involving more than one other organisation. The next item seems problematic (C4c): The school or centre operates a joint budget or owns assets or enterprises with other schools or organisations, such as a training company, and scores low in both cycles. About 20% of the non-implementers indicate they plan to consider this measure in the future. Additionally, (C4d), which involves the school or centre sharing services or staff with other schools (such as accounting services, technical maintenance, etc.), also scores relatively low.

Table 4.3: Dimension C – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
C1a) The school or centre has an independent Board of Governors with some elected members that exercises authority and holds the principal to account.	128	66%	64	73%	42	89%
C1b) The school or centre, in consultation with its stakeholders, has defined its own mission and institutional development plan.	130	83%	72	92%	43	94%
C1c) The school or centre has an institutional quality assurance system that it implements.	129	76%	72	85%	43	79%
C2a) The school or centre has the authority to enter independently into contracts with other organisations such as businesses, training providers and donors, e.g. to buy or sell services or equipment.	128	83%	71	88%	41	84%
C2b) The school or centre can earn and retain income (for example, by selling training services).	129	74%	69	85%	42	79%
C2c) The school or centre can make changes to nationally defined curriculum frameworks or profiles to adapt the curriculum to local needs.	128	59%	70	65%	40	69%
C2d) The Governing Body has the authority to appoint and dismiss a principal.	108	50%	64	51%	39	77%
C2e) The school or centre has the authority to appoint its own fixed-term staff (for example, part-time teachers, maintenance staff).	128	76%	71	82%	40	83%

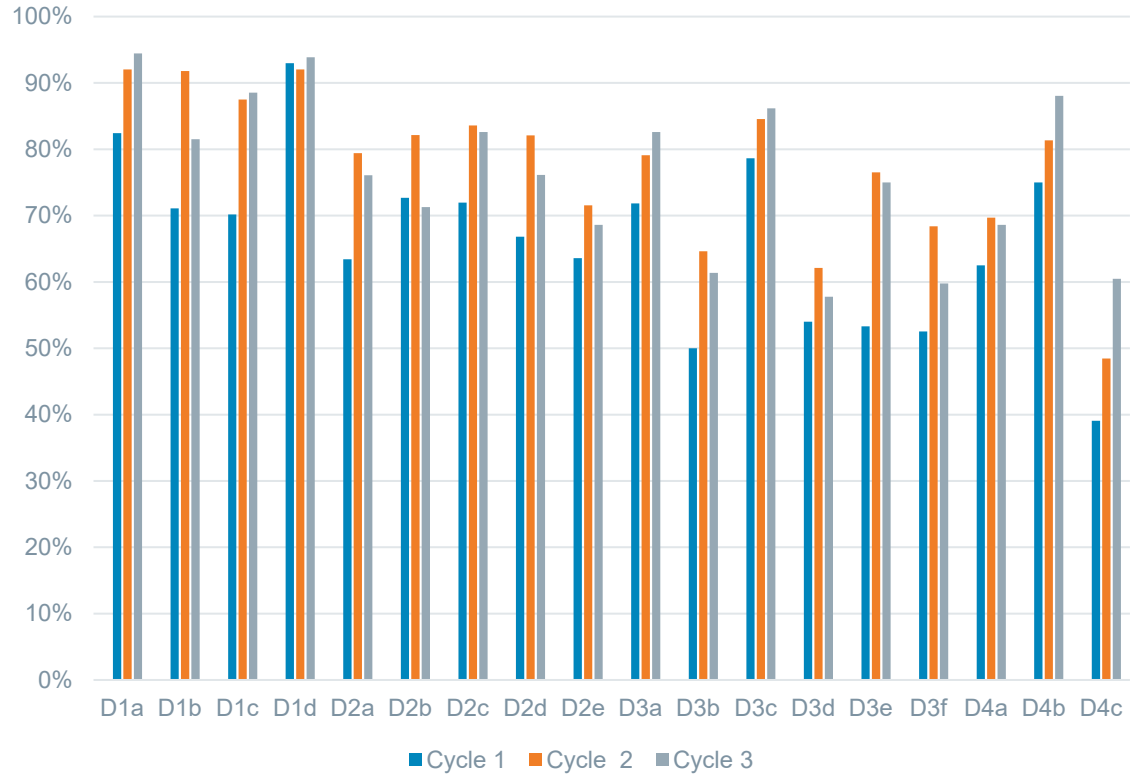
	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
C3a) The school or centre plans and monitors its own budget, deciding independently how to use the resources.	128	73%	70	85%	41	76%
C3b) The school or centre has appropriate and sufficient laboratories, classrooms and workshops which permit it to develop the competences required by employers.	131	74%	72	82%	43	84%
C3c) The school or centre has appropriate and sufficient tools, equipment, infrastructure and consumables which permit it to develop the competences required by employers.	131	70%	72	82%	43	80%
C3d) The school or centre has the authority to decide which learning programmes will be offered in the future and to close down current programmes if not required.	128	61%	69	75%	41	79%
C3e) The school or centre has the authority to appoint full-time, permanent teaching staff, subject to approval.	127	72%	71	77%	42	79%
C3f) The school or centre has the authority to take out loans, for example, to fund investment	106	29%	61	43%	36	46%
C4a) The school or centre coordinates the planning and provision of training programmes, together with other skills providers.	127	71%	70	80%	42	92%
C4b) The school or centre leads and sometimes initiates national or international projects involving more than one other organisation.	126	53%	72	75%	41	82%
C4c) The school or centre operates a joint budget or joint owns assets or enterprises with other schools or organisations, for example, a training company.	110	22%	65	29%	39	38%
C4d) The school or centre shares services or staff with other schools (for example, accounting services, technical maintenance services, etc.).	122	49%	69	46%	40	63%

4.4. Dimension D: Lifelong learning in VET

There are 19 elements in the dimension of lifelong learning. Five items each are at the foundational, developing, and mature levels, while four items are on leadership and coordination.

The first set of outcomes is high and increases over the cycles. Therefore, the items (D1a) The school or centre has an explicit mission to provide education or training programmes to adults; (D1b) The school or centre has delivered at least one adult education programme lasting at least 8 weeks for 20 or more adult learners in the past two years; (D1c) The school or centre is formally accredited as a provider of adult education; (D1d) The school or centre systematically supports the development of key competences (including soft skills as well as basic skills) for all learners; all seem to be generally fulfilled.

Figure 4.4: Dimension D – Underlying Scores



Source: ENE Self-assessment database

We also observe a steady rise in scores within the second set of elements. All items achieve a relatively high level: (D2a) The school or centre has consistently delivered at least three different programmes for adults over the past two years. D2b) Various types of learning programmes are offered to adult learners to meet their needs (for example, part-time courses for employees, elementary courses for adults without basic skills, etc.). D2c) The school or centre provides specialised advice on training and careers to adult learners. D2d) Teachers and trainers have received training or specialised support that has helped them develop skills to support adult learning and career counselling. Several organisations indicated that they plan to work on these items if they have not already done so; this was especially true for D1b and D1c.

In the third group, the overall outcomes are lower, but increases in Cycle 2 continue. D3e shows the greatest increase among the mature items. Therefore, it is common for schools or centres to offer adult education programmes outside (partially or entirely) of a school setting, such as at the workplace or online. All leadership scores improved slightly. However, within D3b, dedicated funding for adult learners, several schools indicated they expect it to be implemented soon or in the mid-term. This aligns with the interest in providing adult education outside of the institution (D3e), which several institutions plan to pursue.

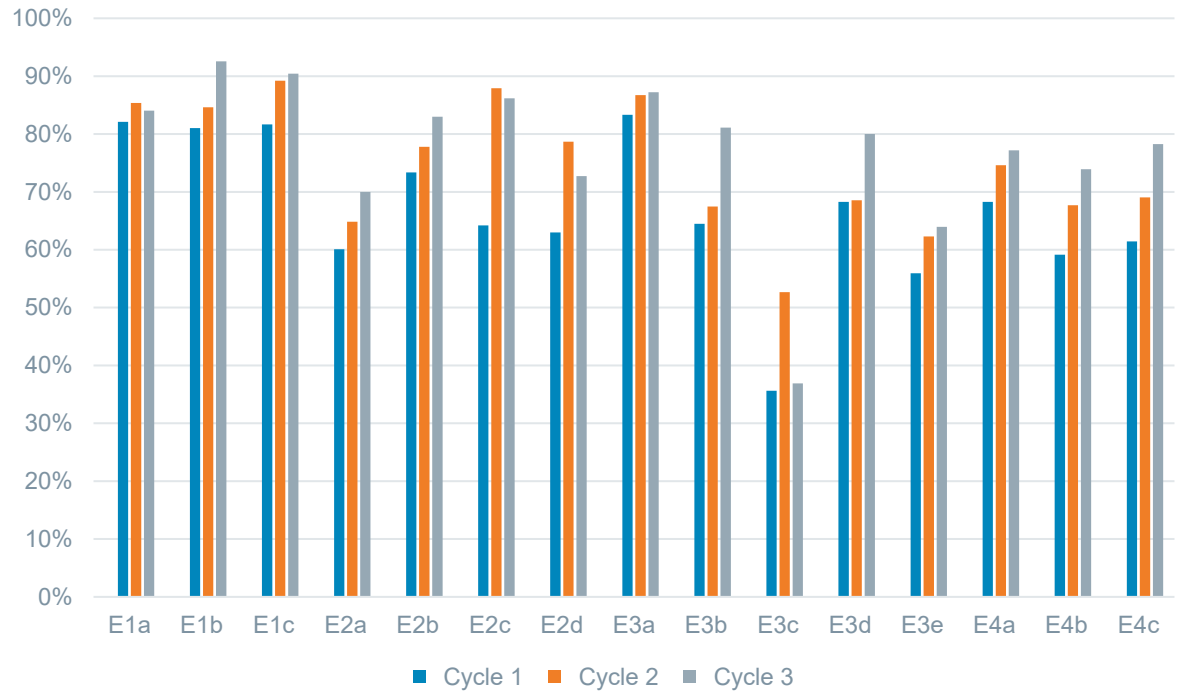
Table 4.4: Dimension D – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
D1a The school or centre has an explicit mission to provide education or training programmes to adults.	127	72%	69	92%	45	94%
D1b The school or centre has delivered at least one adult education programme with at least 8 weeks duration for 20 or more adult learners over the last two years.	125	62%	67	92%	46	82%
D1c The school or centre is formally accredited as a provider of adult education.	125	61%	68	88%	48	89%
D1d The school or centre systematically supports the development of key competences (including soft skills as well as basic skills) for all learners.	130	82%	69	92%	49	94%
D2a The school or centre has delivered at least three different programmes for adults continuously over the last two years.	124	55%	68	79%	46	76%
D2b Different kinds of learning programmes are offered to different kinds of adult learners, to meet their needs (for example, part-time courses for employees, elementary courses for adults without basic skills, etc.).	124	63%	70	82%	47	71%
D2c The school or centre offers specialised advice on training and careers to adult learners.	123	63%	67	84%	46	83%
D2d Teachers and trainers have received training or specialised support that has helped them to develop skills to support adult learning and career counselling.	123	58%	67	82%	44	76%
D2e Learning outcomes (or competences) from adults' skills programmes are assessed using criteria that have been validated by employers (or their representatives).	119	55%	65	72%	43	69%
D3a More than 50% of programmes provided by the school or centre are also accessible to adult learners, either as special courses or adults can join existing programmes.	116	63%	67	79%	46	83%
D3b There is dedicated funding which makes it possible for adult learners to study.	111	43%	65	65%	44	61%
D3c Learning from adults' skills programmes is accredited, i.e. the programmes lead to diplomas which have value on the labour market.	119	68%	67	84%	47	86%
D3d Graduates from adult programmes are regularly tracked (e.g. by tracer studies) to monitor destinations and/or future learning needs.	116	47%	66	62%	45	58%
D3e The school or centre provides adult education programmes outside (either partially or fully) of a school environment (for example, in the workplace, online, etc.).	122	46%	66	77%	46	75%
D3f The school or centre recognises informal learning of adults so that they can benefit from prior learning outside of the school or centre.	115	45%	68	68%	46	60%

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
D4a The school or centre collaborates with or supports other adult education providers, for example, so that together schools can offer a wider range of programmes.	120	54%	66	70%	43	69%
D4b The school or centre has well-established partnerships with businesses or employment agencies, for example, to provide training.	124	65%	67	81%	46	88%
D4c The school or centre has a coordinating role with respect to adult education (for example, it coordinates adult education across several organisations, campuses, or neighbourhood centres).	112	33%	65	48%	43	60%

4.5 Dimension E: Skills for smart specialisation

Figure 4.5: Dimension E – Underlying Scores



Source: ENE Self-assessment database

The schools and training centres achieve high scores on the foundational items of this dimension. The majority of schools gather and analyse labour market intelligence to guide their work (E1a), foster alliances with local and regional economic development bodies (E1b), and collaborate with local businesses (E1c). They also design and deliver tailored programmes to align with the present and future workforce requirements of local and regional enterprises (E3a). In all these areas, they also increased the scores in Cycles 2 and 3.

The scores for "smart skills specialisation" (E2a) were somewhat lower. Not all schools are fully involved in activities that help identify regional economic development priorities. However, many schools plan to implement these within two years or later. Schools also report weaknesses in contributing to the regional research strategy (E3b), especially in providing incubation services (E3c).

Between 30-40% of those without such programmes say they will introduce them within two years or later. Cycle 3 shows a notable improvement in these scores. Better results were seen in collaboration with industry, which can lead to new training programmes (E3d) and those focused on innovation aligned with regional strategies, as well as formal agreements between private and public sector organisations to address local or regional economic needs (E3e). Overall, all items in these areas showed higher averages in the later cycles. Significant improvements were observed in the weaker item E3c, as well as in E2c, which previously had an average performance. Regarding network coordination and collaboration, only all elements related to leadership received high scores.

Table 4.5: Dimension E – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
E1a) The school or centre gathers and analyses labour market knowledge (for example, information on employers' needs) to inform its work.	130	69%	65	85%	47	84%
E1b) The school or centre collaborates with local or regional bodies responsible for local/regional development (for example, with the Regional Development Agency).	129	68%	65	85%	47	93%
E1c) The school or centre collaborates with the local or regional business associations and civil society (for example, Chambers, employers' associations, NGOs, etc.).	130	69%	65	89%	47	90%
E2a) The school or centre is involved in activities that help the region to identify priorities for the economic development ("smart skills specialisation").	125	50%	64	65%	45	70%
E2b) The school or centre has developed or modified its curriculum or the range of programmes that it offers in response to labour market analysis in the last three years.	128	61%	63	78%	47	83%
E2c) he school or centre provides enterprise/entrepreneurship skills to 75% of its adult learners.	123	53%	62	88%	47	86%
E2d) The school or centre provides training or other services targeting Small and Medium Enterprises (SMEs).	125	52%	61	79%	44	73%
E3a) The specialist programmes offered by the school or centre match well with the current and future employment needs of local and regional enterprises.	129	70%	64	87%	47	87%
E3b) The school or centre contributes to the regional research strategy, for example, by helping to transfer and apply new knowledge and technologies.	128	54%	63	68%	45	81%
E3c) The school or centre provides incubation services, i.e. support for new business start-ups, such as accommodation, mentoring or loans.	115	29%	56	53%	42	37%
E3d) The school or centre collaborates with industry to create new training programmes which address innovation (for example, take-up of new technologies), in line with the regional strategy.	125	57%	62	69%	45	80%
E3e) The school or centre has entered into formal agreements with private and public sector organisations to jointly address local or regional economic needs, for example, the ones expressed in the regional strategy.	122	46%	61	62%	43	64%

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
E4a) The school or centre leads or coordinates building partnerships, for example, by hosting meetings or mobilising alumni, for the benefit of the region.	125	57%	63	75%	46	77%
E4b) The school or centre leads or coordinates collaboration with other schools, centres or research organisations locally, across regions or internationally, for example, to develop project or training programmes, e.g. on emerging technologies.	125	49%	65	68%	46	74%
E4c) The school or centre is formally recognised to have a lead role in the development of identified specialised skills or technologies at the regional or national level.	126	51%	63	69%	46	78%

Source: ENE Self-assessment database

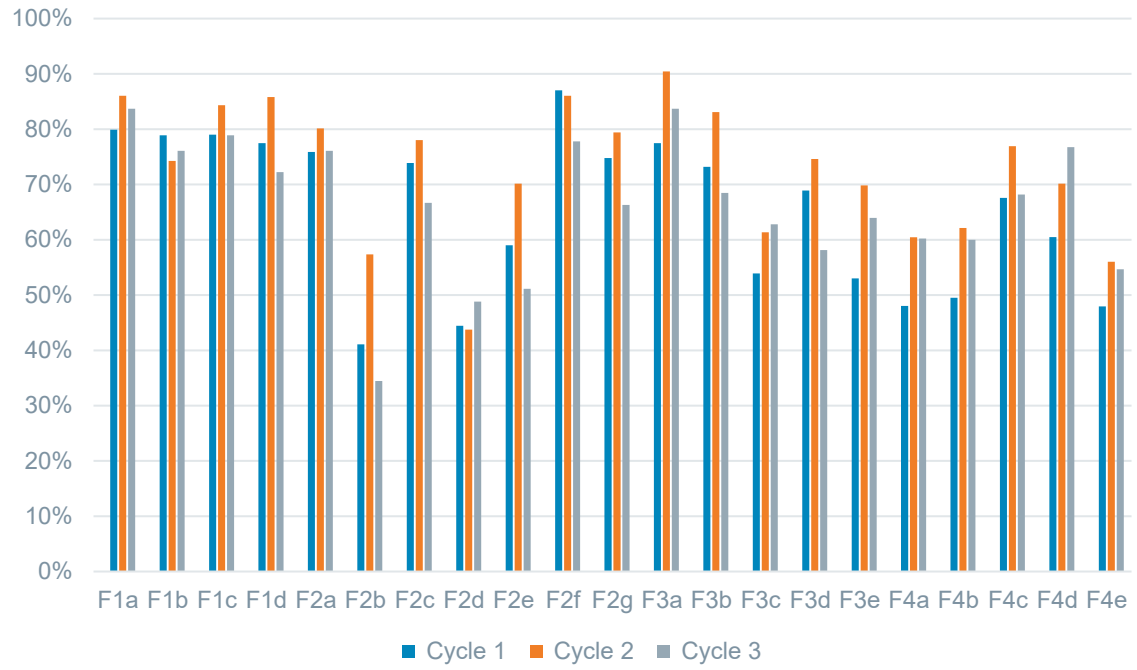
4.6 Dimension F: Industry 4.0 and digitalisation

The evolving labour market within the context of workplace digitisation and the importance of themes in industrial production, grouped under "Industry 4.0", are incorporated in dimension F. This includes the development of specific skills in this environment, along with the use of digital technologies both as tools and instructional aids. Many schools or centres have established networks and digital collaborations with other skills providers, for example, through e-twinning, videoconferencing or platforms (F4c).

Schools tend to score highly on items where digitisation is utilised in instruction. There is a tendency for these scores to be lower in Cycle 3, which could be due to a different type of school participating, the effects of COVID-19-induced digitisation wearing off, or a higher level of critical evaluation in this final cycle. Most schools provide digital tools for distance learning (F1c; F3b), almost all schools use digital learning environments (Microsoft 365; Moodle, etc.) in their teaching and assessment (F3a; F2f), and the school develops digital competences among its staff as part of the institutional and workforce development plan (F2g).

Lower scores are observed in the staff's Digital Competence (DC) benchmarking, assessed through tools like the EU's SELFIE or similar frameworks (F2b), which showed some improvement in the second cycle. Digital skills such as coding (F2d) and industrial digital technologies (F3c) also record lower scores, although these are more relevant to industrial or IT programmes. Not all schools offer multiple specialised qualifications that focus specifically on digital skills needed for Industry 4.0 (F3e).

Figure 4.6: Dimension F – Underlying Scores



Source: ENE Self-assessment database

The low leadership scores have been improving towards cycle 2. This aligns with the organisations' expectations, as those without such implementations, ranging from 30% to 50%, expressed their intention for future implementation.

Table 4.6: Dimension F – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
F1a) The school or centre develops the digital skills and competences of learners in at least five different learning programmes.	131	68%	68	86%	46	84%
F1b) Digital and online instruction is regularly used on campus as a mode of teaching and learning by at least 50% of learners.	128	67%	68	74%	46	76%
F1c) The school or centre can use digital tools to provide distance learning to 80% of its students.	131	68%	67	84%	45	79%
F1d) The school or centre promotes and uses Open Educational Resources.	130	66%	67	86%	45	72%
F2a) An explicitly defined set of Digital and Online Skills is taught to all learners as part of their key competences.	131	65%	68	80%	46	76%
F2b) The Digital Competence (DC) of staff and learners is benchmarked, e.g. using the EU's SELFIE tool or another framework.	120	35%	68	57%	45	34%
F2c) The school or centre uses digital and online learning to provide work-related learning situations (for example, video simulations, business games, videos of the workplace, VR).	130	63%	66	78%	45	67%

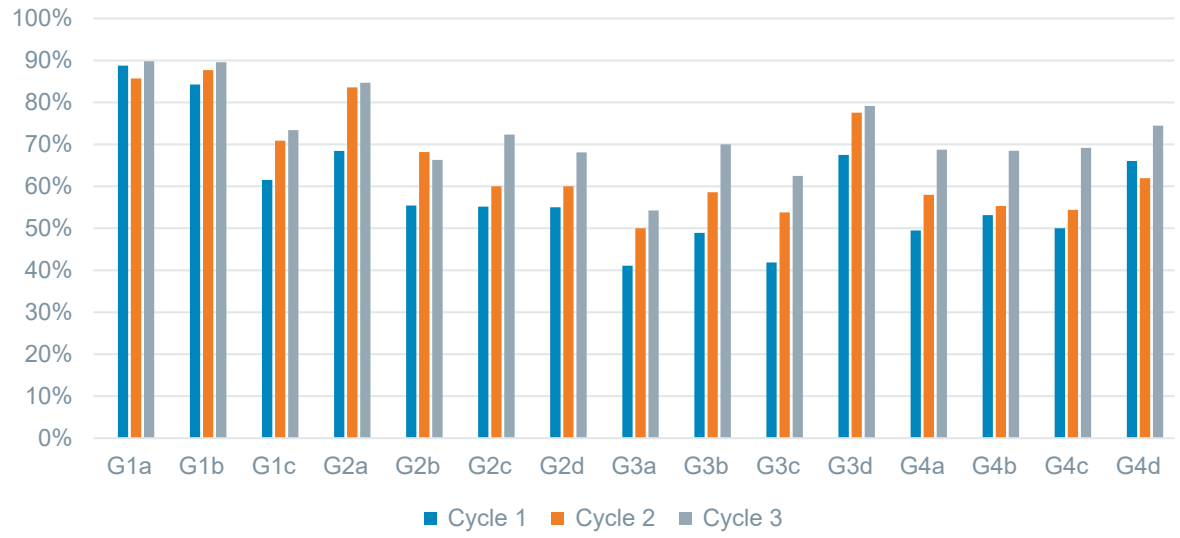
	Cycle 1		Cycle 2		Cycle 3	
	n	Score	n	Score	n	Score
F2d) At least 50% of learners learn coding and computational thinking.	118	37%	64	44%	42	49%
F2e) The school or centre has a digital strategy (for example, incorporated into the institutional development plan).	130	50%	67	70%	44	51%
F2f) The school or centre ensures safety, privacy and responsible behaviour in digital environments.	127	74%	68	86%	45	78%
F2g) The school or centre develops digital competences of all staff, in line with the institutional development plan or the workforce development plan.	130	64%	68	79%	46	66%
F3a) Most teachers and learners use digital learning environments or systems for learning and assessment (for example, Moodle, Microsoft 365, etc.).	130	66%	68	90%	46	84%
F3b) Digital learning technologies are used to provide anytime/anyplace learning for all learners.	129	62%	68	83%	46	68%
F3c) At least 50% of learning programmes develop the competence of learners to make use of up-to-date industrial digital technologies, e.g. CAD, CAM, 3D printing.	121	46%	66	61%	43	63%
F3d) The school or centre has medium- and long-term plans to ensure that the development of its own digital infrastructure is in line with pedagogy and curriculum, and industrial practice, and the plans are implemented.	130	59%	65	75%	43	58%
F3e) The school or centre provides at least two specialised profiles (qualifications) that explicitly address digital competences relevant to Industry 4.0. (for example, robotics, AI, website designer, data scientist).	119	45%	63	70%	43	64%
F4a) The school or centre works in partnership with employers to address new digital technological development (for example, through investment, sharing of technology and know-how and continuing training for advanced digital competences).	120	40%	67	60%	44	60%
F4b) The school or centre works with research partners to address new challenges and exploit new digital technologies.	124	42%	66	62%	45	60%
F4c) The school or centre networks and collaborates digitally with other skills providers, for example, through e-twinning, videoconferencing or platforms.	130	58%	65	77%	44	68%
F4d) The school or centre supports or encourages the development of digitalisation in other skills providers, for example, by providing professional development and, development of assessment.	124	51%	62	70%	43	77%
F4e) The school or centre is formally recognised to have a national or regional mission to lead development in the provision of digital skills and/or the use of educational technologies.	117	40%	58	56%	43	55%

Source: ENE Self-assessment database

4.7 Dimension G: Going green – supporting sustainable goals

Going green by supporting sustainable goals and collecting programmes and ideas aimed at greening the labour market and educational institutions. As expected, scores at the foundational level are relatively high. Some activities focus on awareness, included in training programmes' competences, and—more briefly—the broader discussion on climate change and potential technological responses. On average, responses from Cycles 2 and 3 tend to be higher than those from Cycle 1.

Figure 4.7: Dimension G – Underlying Scores



Source: ENE Self-assessment database

In this dimension, development and maturity indicators tend to be somewhat weaker, except for explicitly addressing sustainability issues in its institutional strategy (for example, concerning energy, curriculum, and consumables), which score slightly lower. Consequently, it is less likely that the school or centre offers at least one training programme that explicitly covers a current or emerging green occupation (for instance, environmental management, photovoltaic installer, recycling worker), or that the school or centre systematically develops skills in green technologies such as solar or wind power, insulation, and electric batteries. Schools expressed their intention to strengthen their work in this area; for instance, 40% of organisations without a programme to address climate change indicated they would develop such a programme in the future.

Building networks around these issues seems effective. Many schools agree that they help learners and staff to innovate and collaborate towards a sustainable economy. They also tend to rank quite highly in leading or coordinating networks within this area. Naturally, part of this may also come from increased awareness and funding opportunities.

Table 4.7: Dimension G – Answers and Scores

	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
G1a) Some awareness-raising activities have already taken place in the school or centre (for example, campaigns to reduce and/or carefully manage waste).	129	74%	70	86%	49	90%
G1b) Where appropriate, the learning programmes provided include competences that are relevant to making the economy sustainable ('green skills'), for example, knowledge about energy conservation, skills in waste reduction.	127	70%	69	88%	48	90%
G1c) The school or centre supports learning, addressing the science of climate change and exploring critically economic, political and technological responses to environmental change.	125	51%	67	71%	47	73%
G2a) The school or centre addresses explicitly sustainability issues in its institutional strategy (for example, with respect to energy, curriculum, consumables).	125	56%	70	84%	49	85%
G2b) The school or centre provides at least one training programme that explicitly addresses a current or emerging green occupation (for example, environmental management, photo-voltaic installer, recycling worker).	123	46%	67	67%	46	66%
G2c) The school or centre systematically develops skills in green technologies, for example, solar or wind power, insulation, and electric batteries.	119	45%	65	60%	47	72%
G2d) The school or centre audits and controls its own environmental footprint.	122	45%	70	60%	47	68%
G3a) The school or centre is providing adult training programmes that provide green skills, give access to green technologies and open up green occupations.	112	33%	65	50%	47	54%
G3b) The school or centre is helping to develop new programmes, curricula or technologies associated with green skills, occupations and technologies.	115	40%	64	59%	45	70%
G3c) On course to reduce carbon footprint in line with 2030 targets	114	34%	66	54%	44	63%
G3d) The school or centre empowers learners and staff to innovate and collaborate to bring about a sustainable economy.	125	56%	69	78%	48	79%
G4a) The school or centre is collaborating with industry or research institutes to develop or provide learning programmes which address sustainability, for example, through projects or platforms.	116	40%	69	58%	48	69%
G4b) The school or centre is collaborating with other skills providers to support or provide learning programmes which address sustainability, e.g. through clusters or in-service training.	117	43%	66	55%	46	68%

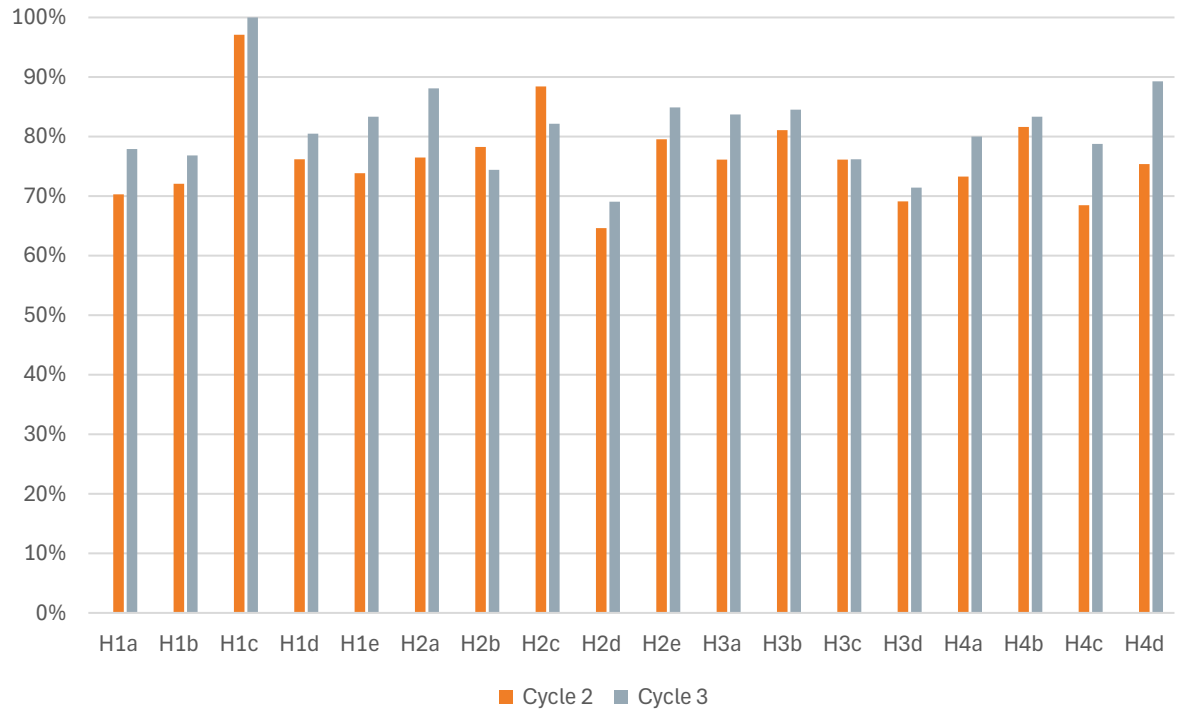
	Cycle 1		Cycle 2		Cycle 3	
	Total	Score	Total	Score	Total	Score
G4c) The school or centre is working with industry or sector associations to provide employee training programmes focusing on sustainability.	114	40%	68	54%	47	69%
G4d) The school or centre is collaborating with other stakeholders (for example, local government, NGOs, parents, adult learners, employers) on actions to bring measurable progress in achieving collective sustainability goals.	125	54%	67	62%	47	74%

Source: ENE Self-assessment database

4.8 Dimension H: Inclusion and Equity

The inclusion and equity aspect was added in Cycle 2, making it difficult to compare responses directly to Cycle 1. This aspect concerns providing equal opportunities for learners, including vulnerable or disadvantaged groups, in education and in the implementation of projects and programmes that can enhance educational and labour market outcomes. The curriculum may need to be delivered or taught in a different way to suit disabled learners who require special attention.

Figure 4.8: Dimension H – Underlying Scores



Source: ENE Self-assessment database

Areas such as awareness and assessment of special needs have relatively low scores in this dimension (H1a; H1b; H1d). Conversely, the fundamental element (H1c) scores highly. The educational institution promotes respect and equality among its members, regardless of their gender, cultural background, language, ethnicity, religion, or sexual orientation. Any reports of harassment, bullying, or discrimination are investigated formally. In the developing item (H2c), steps are taken to

promote careers and pathways for women and to facilitate their participation in all vocational learning programmes at the centre and in the workplace.

The lowest average is in (H2d). The centre systematically monitors and reports on educational outcomes and progression by gender, racial or ethnic origin, disability, linguistic minority, and socio-economic status. Additionally, (H3d), which measures whether the school or centre has successfully addressed gender stereotypes and barriers related to training—resulting in more females and males pursuing non-traditional pathways both as learners and as teachers or trainers—scored relatively low. Among the Leadership and Collaboration items, particularly (H4c), leadership in networks or projects focused on developing innovative ways to promote inclusion and/or equity shows lower average scores.

Table 4.8: Dimension H – Answers and Scores

	Cycle 2		Cycle 3	
	Total	Score	Total	Score
H1a) All teachers receive training to help them recognise and meet the special and diverse educational needs of all learners.	69	70%	43	78%
H1b) All learners are assessed for special learning needs and, where appropriate, are further assessed by specialists to determine what additional assistance they need.	68	72%	41	77%
H1c) The school or centre promotes respect for all members of the centre, whatever their gender, their cultural, linguistic, ethnic or religious background or their sexual orientation and complaints about bullying, discrimination or harassment are formally investigated.	69	97%	43	100%
H1d) The centre reaches out to recruit learners from disadvantaged and under-represented groups and seeks to reduce barriers to their participation (by providing transport, language teaching, and free school meals).	63	76%	41	80%
H1e) Learners with physical disabilities, for example, hearing-impaired or visually-impaired or mobility-impaired learners, have access to appropriate learning spaces and digital technologies and receive support.	65	74%	42	83%
H2a) The school or centre facilitates the participation of learners in activities that contribute to the welfare of disadvantaged individuals and groups, for example, extra-curricular charitable activities, social enterprises.	68	76%	42	88%
H2b) Targets are developed for the reduction of ‘drop out’ and under-achievement by disadvantaged and special needs learners are included within the centre’s development plan.	69	78%	43	74%
H2c) Actions are taken to promote all careers and pathways to females and to facilitate their participation in all vocational learning programmes in the centre and in the workplace.	69	88%	42	82%
H2d) The centre monitors and reports systematically on educational outcomes and progression by gender, racial or ethnic origin, disability, linguistic minority and socio-economic status.	65	65%	42	69%
H2e) Disadvantaged and special needs learners and learners from under-represented groups participate in many of the centre’s study programmes and, where appropriate, receive additional support to help compensate for their disadvantages and needs, e.g. language support, learning assistants.	66	80%	43	85%

	Cycle 2		Cycle 3	
	Total	Score	Total	Score
H3a) The school or centre has consulted upon and formally adopted a policy that addresses all aspects of inclusion, equal opportunities, and non-discrimination and is implementing it, for example, through reviews of admissions and teaching.	67	76%	43	84%
H3b) Learners and teachers at the school or centre interact openly, effectively and positively with diverse groups and individuals within and beyond the centre, as shown, for example, by high levels of participation in inter-cultural or ecumenical exchanges, community actions and sport.	66	81%	42	85%
H3c) Staffing, learning spaces and equipment, access, assistance and specialist support are sufficient to make it normal for disadvantaged, special needs or under-represented learners to fully participate in any study programme offered by the school or centre.	67	76%	42	76%
H3d) Students with limited financial resources are financially assisted so that all students have the conditions and resources for successful learning, for example, food, lodging, work clothes, health care and hygiene services, access to computers and broadband for remote study, free travel, and textbooks	68	69%	42	71%
H4a) The governing body or council of the school or centre includes representatives of the diverse communities and stakeholders that it serves, including learners and employers, and it reviews the implementation of the centre's inclusion policies.	58	73%	40	80%
H4b) The centre collaborates with other organisations to support the learning, full participation, and progression of disadvantaged and special needs learners (e.g. psychological specialists, employers, researchers, careers advisers, and employment offices).	68	82%	42	83%
H4c) The centre leads or collaborates within national or international projects to develop innovative ways to pursue inclusion and/or equity.	65	68%	40	79%
H4d) Learners study, work, and cooperate with others from different cultures and backgrounds, for example, from other schools or centres, other countries or other parts of their own society.	65	75%	42	89%

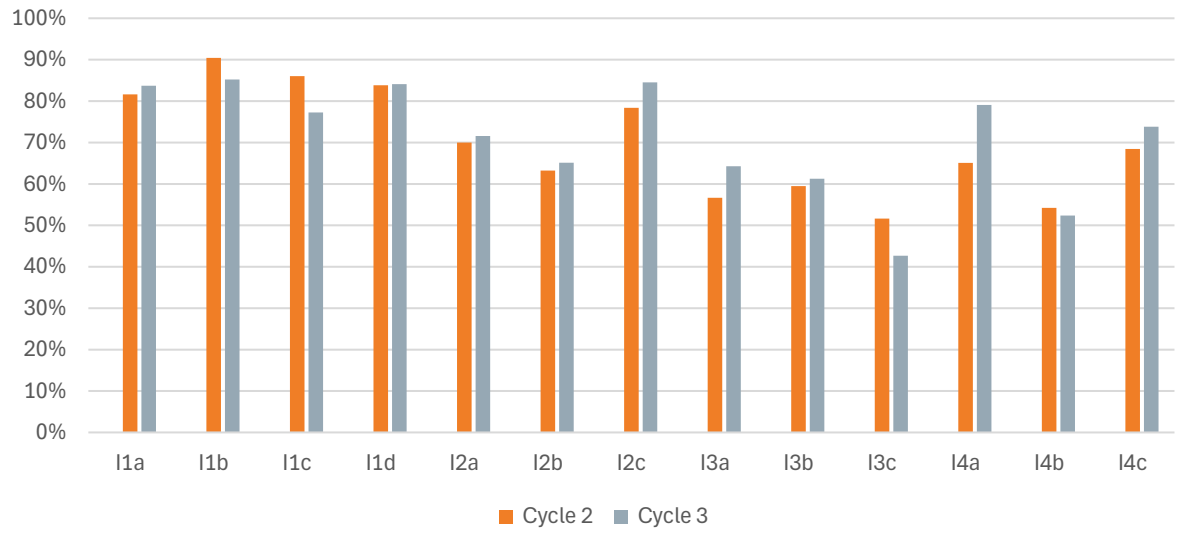
Source: ENE Self-assessment database

4.9 Dimension I: Entrepreneurship and Enterprise

Dimension I assesses aspects related to the development of entrepreneurial skills and entrepreneurship. This includes strategic organisational development and evaluation, staff training, recognition and curriculum for learning, extracurricular activities, and collaboration with businesses, start-ups, as well as regional and international organisations.

The indicators are categorised according to levels of development: Foundational, Developing, and Mature. The fourth group of indicators evaluates how far the school or centre has taken on a leadership or coordinating role in relation to other schools, centres, or organisations.

Figure 4.9: Dimension I – Underlying Scores



Source: ENE Self-assessment database

The highest scores are found in the initial set of elements (foundation), particularly in the second and third items. (I1b) Programmes of study explicitly focus on enterprise and entrepreneurship skills; and (I1c) the school or centre regularly offers learners diverse opportunities to develop their entrepreneurial competences (e.g., mini-enterprises, enterprise clubs, simulations, competitions, social enterprises). Furthermore, the other two items with high averages are: (I1a) many teachers within the school or centre are familiar with enterprise and entrepreneurship skills; and (I1d) the organisation's strategic plan includes entrepreneurial objectives and activities.

Somewhat lower scores are observed in the second (developing) and third (maturity) groups of items. The lowest scores are in (I3c), where the school or centre consistently maps all its entrepreneurial skills development and activities and assesses the impact of its entrepreneurship strategy. Furthermore, (I3a), active participation in entrepreneurial activities throughout the year, is a vital part of staff evaluation and promotion and presents an area that can be further improved.

Table 4.9: Dimension I – Answers and Scores

	Cycle 2		Cycle 3	
	Total	%	Total	%
I1a) Many teachers in the school or centre are familiar with enterprise and entrepreneurship skills.	68	82%	43	84%
I1b) Some programmes of study explicitly address enterprise and entrepreneurship skills.	69	89%	44	85%
I1c) The school or centre regularly offers learners diverse opportunities to develop their entrepreneurial competences (e.g. mini-enterprises, enterprise clubs, simulations, competitions, social enterprises).	69	85%	44	77%
I1d) The organisation's strategic plan includes entrepreneurial objectives and activities.	69	83%	44	84%
I2a) The school or centre formally recognises entrepreneurial learning outcomes (e.g. through diplomas or through students' records of achievement).	66	69%	44	72%

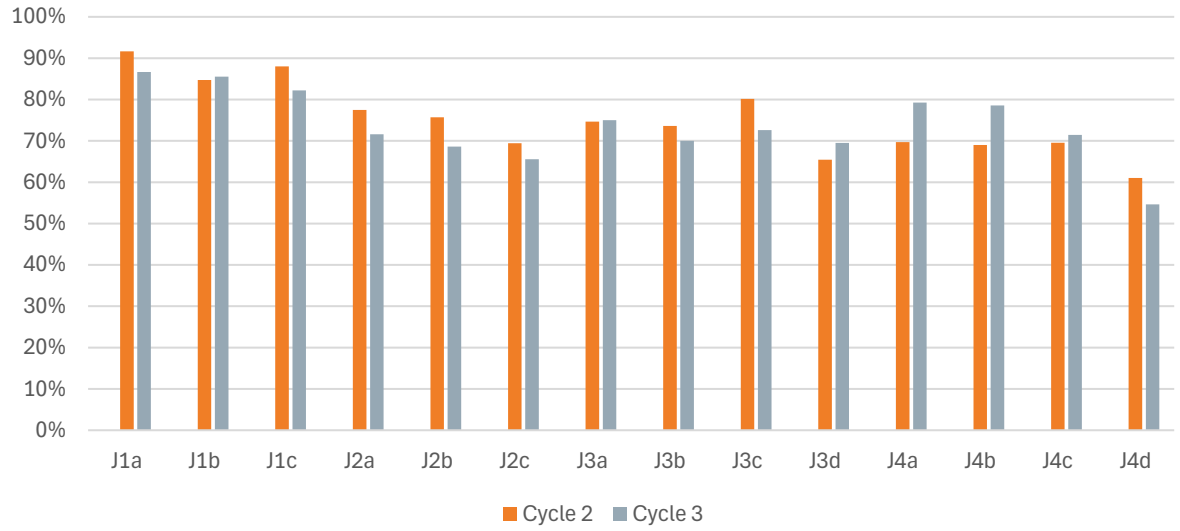
	Cycle 2		Cycle 3	
	Total	%	Total	%
I2b) Most staff have received professional development to help them integrate entrepreneurship skills into what they teach or to support entrepreneurship activities.	69	62%	43	65%
I2c) The school or centre generates revenue through a diversity of sources (e.g., training, consultation, research, funded projects) and the centre actively pursues additional sources of revenue.	68	77%	42	85%
I3a) Active participation in entrepreneurial activities throughout the year is an integral part of staff evaluation and promotion.	61	56%	42	64%
I3b) The school or centre is an accredited provider of education programmes in entrepreneurship for adults.	59	58%	40	61%
I3c) The school or centre regularly maps all of its entrepreneurial skills development and activities and evaluates the impact of its entrepreneurship strategy	61	52%	41	43%
I4a) The school or centre leads or coordinates entrepreneurial events and activities with other organisations at a local, regional, national or international level.	63	65%	43	79%
I4b) The school or centre offers technology transfer and innovation consulting services to businesses and other organisations.	59	54%	42	52%
I4c) The school or centre regularly organises networking events or mentoring sessions that bring together learners and teachers with entrepreneurs and businesses.	65	68%	42	74%

Source: ENE Self-assessment database

4.10 Dimension J: Career Education and Guidance

This aspect of items relates to “Career Education and Career Guidance”. The respondent received definitions on career education - programmes and activities of learning designed to help people develop the skills necessary to manage their career and life pathways (career management skills); on career guidance: a range of face-to-face and online activities that enable citizens of any age, at any point in their lives, to identify their capacities, competencies, and interests; to make meaningful educational, training, and occupational decisions; and to manage their life paths in learning, work, and other settings; and on career counselling: an individual or group process that emphasises self-understanding and facilitates the development of a meaningful life/work direction as a basis for guiding learning, work, and transition decisions over the lifespan and responding to change.

Figure 4.10: Dimension J – Underlying Scores



Source: ENE Self-assessment database

The highest scores are in the foundational elements, especially in having a person responsible for career education and guidance (J1a), but also in providing information and assessments that support career guidance for both current and potential VET learners and in challenging career stereotypes (e.g., gender, ethnicity) in J1c. The person responsible for career education and guidance is also often trained regularly (J3c), as the high agreement on these items suggests. Lower scores are seen in the availability of dedicated spaces for career information (J2c) and within the context of leadership and networking, such as the schools' participation in international projects on mobility (J4d).

Table 4.10: Dimension J – Answers and Scores

	Cycle 2		Cycle 3	
	Total	Score	Total	Score
J1a) The school or centre has a person in charge of Career Education and Career Guidance with appropriate knowledge, skills and competences which enable the person to coordinate school-wide work with internal and external stakeholders.	73	90%	45	87%
J1b) The school or centre occasionally involves local companies, public employment service officials, parents, trade unions, alumni and other educational institutions in the implementation of Career Education and Career Guidance.	73	84%	45	86%
J1c) The school or centre offers information and assessments that support career guidance for both current and potential VET learners and challenge career stereotypes (e.g. gender, ethnicity).	72	87%	45	82%
J2a) The school or centre explicitly includes offline and online Career Education and Career Guidance in its development plan or strategy and in its quality assurance processes.	72	76%	44	72%
J2b) All teachers, trainers and school leaders meet with the centre coordinator for Career Education and Guidance at least once a year to ensure that they are all engaged in Career Education and Guidance work.	71	75%	43	69%

	Cycle 2		Cycle 3	
	Total	Score	Total	Score
J2c) The school or centre offers a physical space for extracurricular individual or group careers guidance and counselling with access to materials and online resources for learners and parents.	73	68%	45	66%
J3a) The school or centre offers career education as an integrated element of the curriculum to all learners as they progress through the school and offers career guidance to individuals and groups depending on their needs in cooperation with external partners such as parents, schools, employers and the public employment service.	72	74%	44	75%
J3b) Potential future VET learners are invited to taster sessions (e.g. where they experience practical learning) and receive career guidance relating to work (e.g. labour market trends, salaries) and further learning (e.g. apprenticeships, higher education), which explicitly challenges gender-based prejudices.	73	73%	45	70%
J3c) The person in charge of Career Education and Career Guidance participates in training at least every two years to ensure professional growth and to update skills and knowledge of all dimensions of career education and guidance.	69	79%	42	73%
J3d) Most subject teachers and trainers participate at least once every two years in a training on career education and guidance.	69	64%	41	70%
J4a) The school or centre forms lasting institutional partnerships with specialist national or regional employer associations or sector organisations, public employment service offices and trade unions to co-design methodologies and tools, and co-implement Career Education and Career Guidance activities	72	69%	41	79%
J4b) The school or centre initiates collaboration with external partners to develop new provision, projects or resources to support Career Education and Guidance.	72	68%	42	79%
J4c) The school or centre supports other educational institutions by sharing good practices or resources in Career Education and Career Guidance or providing relevant services to them, e.g. training.	70	69%	42	71%
J4d) The school or centre participates in international projects or international mobility related to Career Education and Career Guidance	69	60%	43	55%

Source: ENE Self-assessment database

CONCLUSIONS

The self-assessment tool underwent three data collection cycles from 2020 to 2024. It provides a convenient way to evaluate the maturity levels of the ENE CoVEs. By incorporating relevant dimensions within the evolving context of the schools, the team aims to identify new developments, topics, and challenges essential for attaining excellence in VET.

The third cycle introduces a slight additional time dimension and a higher overall response. Therefore, many conclusions from the previous analysis remain unchanged. It can be confirmed that, in many aspects, the overall scores have been improving.

The tool's main strength, analysing plans for future improvements and then examining their successes, remains promising. However, the limited number of organisations that participated across the cycles presents challenges for formal statistical analysis. The differing compositions and backgrounds across cycles make a temporal evaluation difficult.

Analysing three cycles of development and leadership scores across different dimensions revealed an overall positive progression among the institutions. The level of maturity increased, as reflected in rising development scores and improvements in leadership scores.

CoVEs consistently report high maturity in foundational areas; however, much lower scores are observed in new and future-oriented dimensions such as “Skills for Smart Specialisations” (E), Industry 4.0 and Digitalisation” (F), and “Going Green” (G). While this is somewhat expected, given these are areas still in development, the lower scores emphasise the need for further advancement in these sectors.

Uncovering the reasons behind strong performance is a challenging task. Generally, possessing certain strengths at the development level is essential for greater involvement in the organisation or management of networks and collaborations. High-quality work often leads to effective leadership.

Across multiple dimensions, CoVEs score lower on indicators related to systematic monitoring, evaluation, and strategic assessment. This indicates a gap between implementing activities and assessing their impact. Examples include benchmarking the digital competence of staff and learners, monitoring and reporting on educational outcomes for inclusion and equity, and mapping entrepreneurial activities and assessing the impact of the institution’s entrepreneurship strategy.

The available background information indicates that regional clusters have certain strengths or weaknesses that can influence their country-specific context and institutional traditions. In this renewed analysis, we include an additional examination at the regional country group level to explore the varying effects of outcomes such as size, participation in networks, clusters, or partnerships within regions.

A potential weakness is the distance between the teaching staff and the workplace. Low scores for teachers undertaking placements in enterprises and for ensuring that all teachers have relevant industrial work experience could indicate such a gap.

One factor that seems to boost the likelihood of success is participation in clusters. The significance of collaboration and networking appears to help achieve higher development scores and, ultimately, excellence. However, this is an expected outcome and has also been noted in previous studies. The size of a school seems to influence results depending on the country (region) where it is located. Small, medium, or very large organisations performed best depending on the region. This indicates that size reflects an element within a country's institutional framework that allows more or less success in the ENESAT evaluation framework.

POLICY RECOMMENDATIONS

- The ENESAT environment provides a voluntary tool for collecting information on CoVE's development across several key areas. It is essential to acknowledge that some variation in outcome scores may stem from evolving expectations or understanding among respondents, particularly in the context of rapid digitisation. As a result, **our measurement frameworks should be adapted to match current developmental stages.**
- Additional **qualitative information**, whether from best practices or through meeting discussions, should be incorporated into the quantitative body of knowledge and considered a vital element of the ENESAT process.
- **A nuanced understanding** of the quantitative outcomes **will help prevent the misinterpretation of data as mere performance improvement** when, in fact, it may reflect changing success criteria. Applying realistic and context-sensitive measurements alongside qualitative interpretation will encourage genuine developmental progress.
- **Foster leadership development**: Enhancing a CoVE's leadership capabilities can result in the multiplier effect of sharing some of its best practices throughout its network and partners.
- To bridge the **gap between pedagogy and work**, programs and incentives should be created for teachers to spend time in enterprises. This directly addresses the weaknesses in teacher work placements and industrial experience and is critical for keeping curricula relevant.
- As CoVEs in the SEET and SEMED demonstrated lower overall development scores, targeted **regional interventions** and **peer-learning opportunities** should be established for these regions. Support should be tailored to their specific institutional contexts, leveraging insights like the observed benefits of cluster participation in SEMED countries. This could also be embedded in the next point:
- **Supporting the establishment of regional or even national networks**. To focus on creating and maintaining schools that excel in vocational training and serve as leaders within local, regional, and national networks. These schools can act as hubs for collaboration, sharing best practices and innovative strategies that enhance vocational education standards.