

Development of SME Policy in the Areas of Entrepreneurship Education and Vocational Education and Training

on behalf of the Federal Ministry for Digital and Economic
Affairs, accompanied by winnovation – Open Innovation
research & consulting



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The image features a large yellow rectangular area containing stylized text. The text is arranged in three rows. The first row contains 'e', '2', and '0'. The second row contains 'u', '1', and '8'. The third row contains 'a' and 't'. The letters 'e', 'u', 'a', and 't' are rendered in a blue, 3D-style font with a gradient. The numbers '2', '0', '1', and '8' are in a white, bold, sans-serif font. The letters 'u' and 'a' have a green-to-blue gradient on their right side.

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Preface

At the onset of the 21st century, the world is changing dynamically, having a great impact on the working world and thus making new demands on the occupational skills of qualified employees. Increasing skills requirements and ever-changing job profiles at all qualification levels call on VET systems to be responsive to rapid changes linked to our complex knowledge-based economy, while maintaining their necessary stability and predictability. Consequently, a recent survey shows that companies in Austria are confronted with a skilled labour shortage. Nearly all of the 4,500 companies surveyed are affected by the skilled labour shortage and therefore apprenticeship diplomas are the qualifications in highest demand.

What we are facing today is a challenging environment for skills development. Increasing demand for qualified workers on the one hand and rapidly evolving and changing competences due to digitization, industry 4.0 but also globalization on the other hand are challenges that we have to tackle. And in the context of high youth unemployment, economic crises and rapid changes, it would appear that transversal skills, particularly entrepreneurship, are essential if young people are to become active, creative and entrepreneurial citizens. We have to recognize that entrepreneurship education is showing benefits for the individual as well as for society and the working environment.

For this reason the topics “entrepreneurship education as a tool to guide, inspire and support young people on their way to a fulfilled and self-determined life”, “internal and external mobility as one solution to diminish a regional skills mismatch” and “transparency of skills including permeability to tertiary vocational training” were addressed in the framework of our project “Reality Check” based on the “European SME-Action Programme” and using Open Innovation methods. To gain a deeper inside view, we invited different stakeholders usually not involved in policy development to input their individual ideas and views.

The results and proposed measures generated in this innovation process under the title “Reality Check” are summarized in this policy paper that shall provide new impetus for the European discussion process as well as for the further development of national policies, especially in the light of “VET post-2020”.

Presenting ideas is one thing but we also need to make them happen, to turn them into reality. I hope you will join me in making every effort to implement them to further support our SMEs on their successful path.

Dr. Margarete Schramböck

Austrian Federal Minister
for Digital and Economic Affairs

1. Objective and Process

Entrepreneurship education, dual vocational training and job mobility play an important role in the European VET (=Vocational Education and Training) and SME policies. The discussion is currently shaped by the challenges of digitization, regional distribution of occupational learners and qualified, changes in demography and skills requirements of the economy. They lead to new fields of tension, but also create opportunities for innovation.

Based on this, Dr. Margarete Schramböck, the Federal Minister for Digital and Economic Affairs (BMDW), initiated an innovation process under the title "Reality Check", which should provide new impetus for the European discussion process as well as for the further development of national politics.

The "European SME-Action Programme" (esp. Fields of Activity 4.1, "Entrepreneurship education", and 5, "Skills and training"¹), which was developed by the SME-Envoy Network, represents the starting point and background of this project. More specifically, the goal of the innovation process was to further develop the topics entrepreneurship education and vocational training within the scope of the Austrian EU Council Presidency in 2018, putting particular focus on:

- developing innovative approaches to the advancement of the "European SME-Action Programme" and
- examining the functionality of European instruments of cooperation on vocational education and training, especially in the light of "VET 2030".

1.1. Objectives

Political objectives and measures will only be effective, if stakeholders fully accept and even appreciate them. This project, directed by the Austrian Federal Ministry for Digital and Economic Affairs (BMDW) and more specifically its departments responsible for *Horizontal Enterprise Policy*, especially *SMEs and Vocational Training, Engineering*, sets the following objectives:

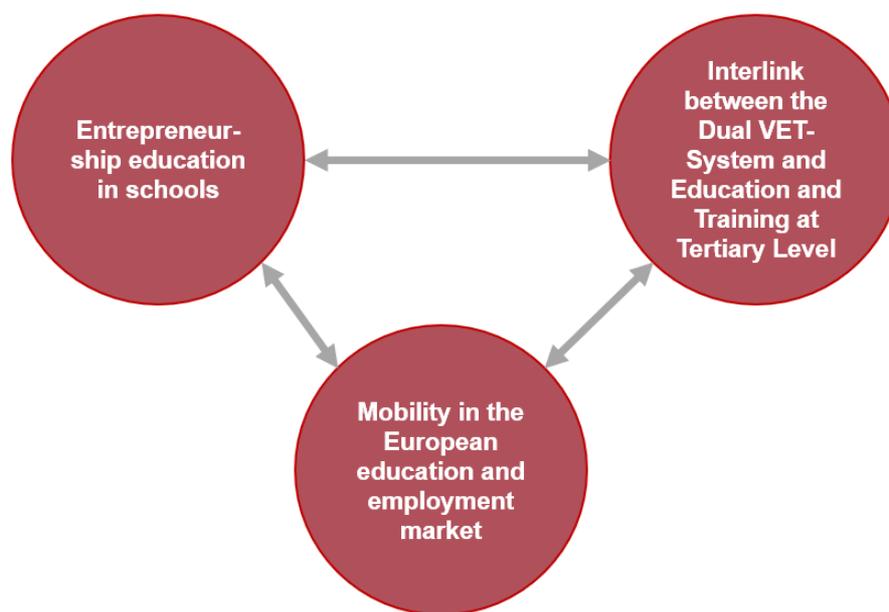
1. Identification of the needs and requirements of relevant stakeholders in the areas of entrepreneurship education, dual vocational training and job mobility by including stakeholders for whom entrepreneurial or operational practice are of particular importance. Hence, an actual reality check was performed.
2. Development of measures and (policy) recommendations at national and European level based on the results of point 1.

¹See also: <https://www.eurocommerce.eu/media/143276/European%20SME-Action%20Programme.pdf>

1.2. Open Innovation Process

In order to effectively include stakeholders in the innovation process and generate meaningful results, Open Innovation methods were used. These were designed and implemented by the Federal Ministry for Digital and Economic Affairs and supported by the research and consulting company winnovation (www.winnovation.at).

Figure 1: The topics of the co-creation workshops



At the center of the participation process was a series of three co-creation workshops in three different regions of Austria and the search and identification of relevant users as participants of the workshops.

These users and other stakeholders identified and developed needs, requirements and solution ideas in the fields of entrepreneurship education, interlink between the apprenticeship system and tertiary education and job mobility. The results of this process form the basis of this strategy paper.

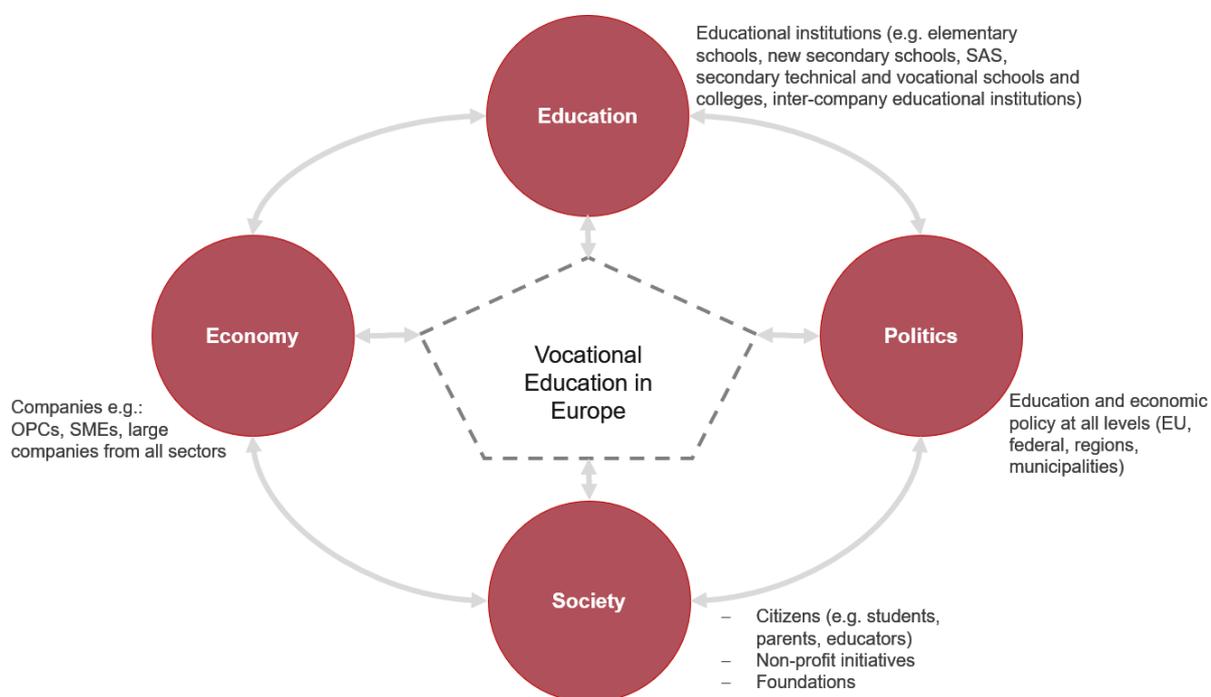
Due to the challenging and indeed very specific topics, the process owners decided to use specific Open Innovation search and co-creation methods which would involve relevant users and stakeholders (individuals, companies, non-profit organizations, etc.) in a target-oriented way, but excluded online methods such as crowdsourcing, where achieving high-quality results was considered too unlikely.

By applying the Lead User Method of Prof. Eric von Hippel, MIT (Massachusetts Institute of Technology), external knowledge sources which are unusual in public policy development were identified for each workshop, integrating this expertise systematically into the co-creation

workshop settings. Key element of the Lead User Method is the collaboration with leading and advanced users from different levels.

To find different perspectives on the topics, the mix of workshop participants was chosen deliberately to represent diverse and heterogeneous groups (see Figure 2). A special focus was put on the perspective of users. Considering the thematic context, participants were selected according to their ability to contribute practical knowledge from their wealth of experience to the respective topics. For example, apprentices, young founders, students as well as entrepreneurs, employees and apprentice tutors were invited to the workshops. In addition, school directors, educators and scientists were specifically asked to participate. The aim was to create solutions that are based on the actual needs and practical demands.

Figure 2: Integration of unusual knowledge providers - potential participants of the works



During the preparation of the three workshops, a total of 271 external knowledge providers were identified and more than 200 of them directly addressed. 119 potential participants from the private sector, 59 experts from the education sector, 30 experts from politics and 17 representatives from society (e.g. citizens, foundations) were contacted and invited to one of the workshops. Out of these, 52 persons finally participated in one of the three workshops and collaboratively worked in small group sessions on challenges and innovative solutions in predefined fields.

1.3. Design of the Co-Creation Workshops

During three full-day co-creation workshops, the participants worked in small groups and plenary sessions. Both formats were moderated by experienced Open Innovation experts from the winnovation team led by Dr. Gertraud Leimüller. Challenges were initially developed in the

field of three predefined core issues (see Figure 3) by using Open Innovation methods (pyramiding, co-creation and design thinking, in particular the persona method). Based on this process, concrete proposals for measures and (policy) recommendations were developed and specified at national and European level.

Figure 3: Dates, locations and main questions of the co-creation workshops

1. Workshop: 07. May 2018, Linz

Main question: How can the transparency of professional qualifications in Europe be increased and job mobility be supported?

2. Workshop: 15. May 2018, Vienna

Main question: How can the entrepreneurial thinking and acting of children and adolescents be sustainably strengthened?

3. Workshop: 17. May 2018, Graz

Main question: How can the tertiary education sector be systematically and more intensively interlinked with dual education and vice versa?

Excursus: The chosen Open Innovation methods

Pyramiding: An actively managed online and offline search method that is used to identify individuals or companies with specific innovation knowledge.

Co-creation workshop: A format promoting interaction that enables collaborative innovation or experimentation across industry, disciplinary and organizational boundaries (heterogeneous participation) and is aligned with the innovation goal.

Design thinking: The creativity method of design thinking focuses on user desires and needs. By using experimental and creative methods (e.g. prototyping, persona method) the focus on the users is ensured and outside-the-box thinking promoted.

Persona method: Personas are virtual persons who represent typical users of a target group, i.e. specifically developed stereotypes in this context, clarifying important characteristics of the target group and helping with decisions in the development phase. They are based on real, concentrated and pointed information about the target group. Usual information about a persona is e.g. name, demographic information (age, education), goals and wishes. For each small group in the workshops, a persona was prepared.

In case of the topic entrepreneurship education, the following persona was prepared: Barbara Steinhauser is the Director of the Secondary Academic School (SAS) in Mutters/Tyrol. She complains: "After the lower grades, a lot of students are leaving. At the moment, we still have enough students to open up upper classes, but from year to year we're struggling more and more to reach the minimum number of students per class." As a director, she faces the challenge that the number of students enrolled in the lower grades exceed the capacity of the school, while in upper classes the school hardly manages to reach the minimum number of pupils because lots of them change to colleges for higher vocational education. She is aware of the challenge to adapt the training at her school to current expectations and requirements.

Based on the results of the workshops, the strategy paper describes the three action fields and then derives specific challenges, measures and (policy) recommendations for addressing these challenges in the national and European context.

1.4. Complementary Data Collection

Accompanying the first and third workshop, a questionnaire was distributed to the participants (see Appendix for questionnaire and results). The data are qualitative (and not representative), but can be understood as a sentiment of the attending participants. The structure and contents of the questionnaire should be used as a starting point for similar future surveys.

The questionnaire addressed the following two topics:

- The Austrian vocational training system
- Vocational training at the European level

Results

The following points were of particular importance for the participants²:

- The enforcement of entrepreneurial spirit in university education as well as in SAS (Secondary Academic Schools) needs a more intensive support.
- The dual system (teaching and vocational school) is challenged to improve in the fields of foreign languages, intercultural competence and general education. Apprenticeship training is seen as very useful in gaining professional competences (skills that can be used in the labor market). In addition, apprenticeship training is seen as the best preparation for work life (top marks of gaining expertise in the fields of professional competence and entrepreneurial spirit).
- As far as European instruments and activities are concerned, their visibility is lower than their practicability and benefits. A particularly useful tool is the Erasmus plus program, whereas ESCO (European Skills, Competences, Qualifications and Occupations) and EAfA (European Alliance for Apprenticeships) are rather unknown. The benefits of ECVET (European Credit System for Vocational Education and Training) are also seen as being rather low.
- From the point of view of the participants, language promotion programs, the support of educational and labor mobility as well as the development of comparable transparency and classification tools within the EU are of vital importance.

² The exact statistics can be found in the Appendix.

2. Action Fields and Challenges

The main stakeholders of vocational education and training at national and international level can be found in business, politics, education and society. Each of these groups consist of a variety of stakeholder groups.

To address current and future challenges of the business location, convey the necessary professional skills and create suitable framework conditions, stakeholders and actors will be forced to collaborate in better and more intensive ways in the future. Only then the gap between the prevailing supply of qualifications in the labor market and the current as well as future demand of the economy can be closed.

During the innovation process, measures and (policy) recommendations for action at the national and/or European level were derived in three action fields.

2.1. Action Field 1: Entrepreneurship Education in Schools

Strengthening entrepreneurship education is a key objective of national and European SME policy. Entrepreneurship education can make a significant contribution in overcoming skills shortages and strengthening the capacity for innovation in the general public. Similarly, the challenges of digital transformation impacting all sectors of society require new approaches and methods to deal with.

Entrepreneurship education does not refer to the education of children and young people as future entrepreneurs or to provide knowledge of how to start a business. Rather, young people are guided, inspired and supported on their way to a fulfilled and self-determined life. This includes the development of creativity and the spirit of innovation, the ability to assess risks and independently solve problems, but also the realization of ideas. The business location Austria and also the entire European Union need a workforce with exactly these skills to ensure its long-term competitiveness and innovation capacity.

For this reason, entrepreneurship education cannot be viewed isolated from the building of digital skills. Entrepreneurship education includes skills supporting the use of digital tools (such as solution-oriented thinking). Therefore, digitization should be seen as a facet of entrepreneurship education and both should be better linked and systematically communicated as a joint concept in the future. In order to sustainably embed already composed skills in society, entrepreneurship education should be understood to be a holistic concept and start early in the field of elementary education, requiring additional communication, collaboration, exchange and systematic cooperation among stakeholders.

Challenges defined by the participants of this workshop:

- Stakeholders from business, politics, education and society are not sufficiently aware of the importance and significance of entrepreneurship education.
- The systematic exchange of stakeholders from business, politics, education and society on future societal challenges and their implications on vocational education and training should be strengthened.
- So far there is not enough systematic exchange as far as successful initiatives and projects in the field of entrepreneurship education are concerned.
- Mutual learning should be further developed by establishing systematic collaboration.
- Conditions in schools, such as limited opportunities for self-organization and bureaucratic barriers, severely limit the implementation of entrepreneurship education.
- Schools lack incentives and support for a comprehensive implementation of entrepreneurship education in everyday school life.
- Schools need more well-trained and sensitized educators to actually implement entrepreneurship education as required in the curriculum.
- Entrepreneurship education currently has only little significance in the training and further education of educators, especially in regard to teachers at non-vocational schools.
- The systematic involvement of entrepreneurs in everyday school life or in the lives of pupils should be strengthened.

2.2. Action Field 2: Interlink between the Dual VET-System and Education and Training at Tertiary Level

The demand for skilled personnel is increasing. Technological and digital changes as well as globalization and the associated effects on production and service sectors require new competences and capabilities in the work force. A demand-oriented combination of specific expertise, e.g. in IT systems or digital technologies, profound language skills and practical competences, is gaining importance. Comprehensible educational paths building on the respective qualification logic and combining theoretical and practical knowledge represent an essential part of the solution. However, these educational paths need to be understood by all relevant actors (such as employers, employees and trainees).

A prerequisite for comprehensible educational paths is a high (factual) permeability of post-secondary and tertiary education offerings. By combining vocational education and subject-related studies, in other words: skilled workers study at the university or university students / graduates start an apprenticeship, people are able to improve their opportunities on the job

market. The combination of theoretical and practical knowledge prepares employees to deal with increasingly complex problems.

In order to interlink apprenticeships and tertiary education offers more strongly, an expansion of existing instruments for permeability and the establishment of a transparent system of classifications are needed, amongst other things. Beside informing the general public about training opportunities, legal and organizational barriers need to be systematically dismantled in order to increase the actual permeability of education pathways.

Challenges defined by the workshop participants:

- Sometimes there is minor knowledge in the areas of business, education and society about job opportunities for graduates of the dual system.
- Furtheron, actors in business, education and society have insufficient knowledge about further training opportunities (post-secondary training or further qualification opportunities) for graduates of initial VET-programs.
- Employers, employees and education providers lack knowledge about different educational opportunities and how they could be combined.
- The systematic combination of theoretical knowledge and practical skills is sometimes impeded by the lack of comparability of different learning outcomes.
- Existing educational offers are not in any case sufficiently adapted to the needs of the trainees.
- Existing educational offers (available in Austria) should always be adapted timely to the current and - more importantly - future requirements of the economy.
- Framework conditions for employers who wish to support additional training and further education of their employees should be further developed.

2.3. Action Field 3: Mobility in the European Education and Employment Market

Through globalization, digitization and the resulting social changes, labor mobility is rising in significant ways. For Austria as an export-oriented economy competitiveness in international markets is of high importance. Digital tools not only give workers and their companies more flexible job opportunities, they will create new jobs in the upcoming years and decades which are still unknown today. Digital tools also open new and diverse opportunities for the recruitment of employees even beyond Austria's geographical borders.

Both groups, employers looking for highly qualified candidates as well as employees wishing to apply their acquired knowledge, skills and competences abroad benefit from an open European education and employment market. Especially in sectors with skill shortages,

companies are looking for suitable workers across countries. International companies with branches in other European countries, for example, face the challenge of assessing qualifications acquired abroad during the recruitment process.

Therefore mechanisms and tools are needed to improve and facilitate both the mobility of workers and the recruitment process of companies in an international context.

Challenges defined by the workshop participants:

- Different vocational training systems within European countries complicate the comparability of qualifications and thus represent a barrier for job mobility between countries.
- Existing comparability tools (for example the European Qualifications Framework descriptors) are sometimes not known by stakeholders in business, education and society.
- The ease of use of existing instruments for the comparability and transparency of qualifications is low. Therefore the actual benefit for employers and employees is limited. Additionally, there is a lack of awareness about these instruments.
- The system is characterized by a sometime weak and not enough widespread comparability, especially of informal and non-formal qualifications within Europe.
- There is a lack of easy-to-use tools and mechanisms to validate formal, non-formal and informal qualifications acquired abroad.
- Work force looking for jobs abroad is currently not sufficiently informed on country-specific requirements (e.g. insurance systems, pre-employment periods) in their target countries.
- Workers and their families are not sufficiently supported outside the professional context even if these needs are directly influencing the relocation process (for example the apartment search, possibilities to learn languages or sending children to school).

3. Measures and Recommendations

Based on the action fields and associated challenges, the participants of the co-creation workshops developed and formulated concrete measures and (policy) recommendations for action at the national and/or European level.

3.1. Entrepreneurship Education in Schools

Measure 1: Implementation of a comprehensive communication campaign on entrepreneurship education to raise awareness in business, politics, education and society

Entrepreneurship education in the broadest sense includes all educational measures for awakening entrepreneurial spirit and competences. Entrepreneurship education also fosters exactly those values, attitudes and personal qualifications that will gain importance for both, entrepreneurial and employed work in the future. Within the framework of entrepreneurship education, digital skills, amongst others, can be developed, encouraging independent work. One way to expand digital skills are, for example, smart practice firms that focus on digitization, sustainability and social interaction.

Although every citizen can benefit from entrepreneurship education, there is currently little awareness of the importance and necessity of entrepreneurship education in politics, education, business and society.

A comprehensive communication campaign could illustrate what entrepreneurship education means and implies, and what positive effects it can ultimately have on economy and subsequently on society. A social media campaign in combination with an online competition is suggested, since both channels, social media and web platforms, can be used tailored to the target group's specific requirements and more cost-efficiently than classical media.

The social media campaign should address especially young people, their parents, opinion leaders in the education system and teachers. YouTube, Instagram, Snapchat and Facebook are suggested as appropriate channels. The campaign should make use of pictures, short videos and short written messages, with user-generated content from people who benefitted from entrepreneurial education, i.e. testimonials. Predominantly pupils are recommended to act as referees, telling how they experienced entrepreneurial education and teaching methods and how it was possible to build strong bridges into economy. Additionally, entrepreneurs having benefitted from entrepreneurship education in schools and pedagogues with a wealth of experience in entrepreneurship education should be featured in this campaign.

In order to be able to build up a large community in social media, the target group should be motivated to participate in various activities, e.g. to post thematically relevant photos or ideas online. This could be accompanied by an online competition, e.g. for schools and pupils, where the best participating schools and teachers can be nominated by the community and a jury finally selects winners (expert jury can be combined with an online voting in the community).

Cooperation projects between schools and companies should also be honored. The following initiatives could serve as sources for new projects: "StarteDeinProjekt" ('StartyourProject' - crowdfunding platform for school projects and workshops with young entrepreneurs), "Unternehmerin macht Schule" ('Female Entrepreneurs go to school' - school visits by female entrepreneurs), "Lehrer in die Wirtschaft" ('Teacher in business' - participation of teachers in companies), and "Junior – Schüler/-innen gründen Unternehmen" ('Junior - Students start up a business' - Junior Achievement Austria offers students in Austria the opportunity to start a business and to guide the business for one school year with the help of mentors). The projects that are chosen should show novelty, have a wide outreach and be successful in implementation and effectiveness.

Measure 2: Composition and operation of an entrepreneurship education online platform in order to improve the visibility and interlinkage of successful initiatives and projects

Entrepreneurship education is already implemented at national and EU level. But successful initiatives and projects have, however, not been presented transparently and clearly for interested newcomers as well as for established actors (e.g. school directors, educators, NGOs, parents and educational politicians). Although a systematic exchange already exists in Austria to a certain degree (e.g. Entrepreneurship Summit and Platform Entrepreneurship), there is still a lack of cooperation and knowledge exchange between actors, impeding the creation of synergies.

Therefore it is proposed to establish and operate an online platform for entrepreneurship education. It should present successful national and European initiatives and projects including contact persons. The platform can thus provide an overview of national and international activities and at the same time serve as a basis for establishing new collaboration possibilities. In the long term, a map of national and European activities in the field of entrepreneurship education and relevant stakeholders should be created. Content from existing platforms, such as compilation of best practice examples in entrepreneurship education of DG Growth, or the "Youth Start Entrepreneurial Challenges" project, with its entrepreneurship education programs, related to the practice and centered on the students, can be integrated partially into a new, more comprehensive platform.

It is essential to promote any new platform intensively, so it will become known among and used by relevant stakeholders. In addition, incentives should be created for the actors to register their initiatives and projects voluntarily and on individual initiative on the platform. Registered projects could be automatically integrated into further broad-based communication activities (for example in the online competition, see Measure 1: Implementation of a comprehensive communication campaign on entrepreneurship education to raise awareness in business, politics, education and society). In order to ensure the quality of the available data, professional support for the online platform and routine maintenance of data are required. The platform could be linked to the website of the Austrian Federal Ministry for Digital and Economic Affairs.

Besides the database, the online platform would allow to create an interactive area for the exchange between national and European stakeholders in the field of entrepreneurship education. There would be opportunities to actively collaborate with each other and initiate joint projects.

Measure 3: Founding and establishment of a national entrepreneurship education hub and systematic collaboration of hubs on the European scale

In order to emphasize the importance of entrepreneurship education in Europe, a targeted coordination of all relevant stakeholders (national and EU-wide) is desirable. To support and accelerate the collective building of knowledge and experience, different entrepreneurship education stakeholders of EU Member States should join forces to form an entrepreneurship education hub network. The individual hubs, however, would still be based on the national level, where it is intended to give stakeholders a better understanding of entrepreneurship education.

In the national hubs, relevant stakeholders from science, educational practice (schools, NGOs, etc.), politics and business should work together. These stakeholders could experience entrepreneurship education in a real world setting. School directors and educators should be able to see concretely how entrepreneurship education can be successfully embedded in everyday school life. Therefore it is recommended to implement a hub directly at or near a school that is already active in entrepreneurship education, allowing to show the practical implementation in the classroom. In this way, entrepreneurs can be better motivated to support entrepreneurship education because their engagement has a direct implication on pupils.

The entrepreneurship education hubs should thus enable concrete experiences as well as the further development of entrepreneurship education per se (including national and European exchange of ideas). They are intended to support raising awareness for entrepreneurship education in politics, business and society through targeted measures, such as open days and participation in external events. The hub could also operate the proposed online platform (see also Measure 2: Composition and operation of an entrepreneurship education online platform in order to improve the visibility and interlinkage of successful initiatives and projects).

Furthermore, the data collection in Austria and beyond could be significantly improved (monitoring function) through a systematic collection and analysis of entrepreneurship activities as well as the evaluation of entrepreneurship education through the hub. The national hub could ensure systematic coordination and strategic action at the national level, but also start and implement projects and initiatives. As already agreed under the Italian Presidency of the European Council in 2014, an analysis of the present status on entrepreneurship education in schools is to be conducted every four years. It would be possible, that the European hub network carries out these evaluations in cooperation with the national hubs, taking over as well the monitoring. The European hub network could work closely together with the Eurydice institution of the European Commission, which has already conducted comparative studies on entrepreneurship education.

Setting up an European entrepreneurship education hub network and a regular EU-wide conference would provide new opportunities for direct, immediate and personal exchange at the European level. The possibility, to use already existing national networks and initiatives as starting points for such a new hub structure need to be further assessed.

Measure 4: Targeted and systematic anchoring of entrepreneurship education elements in all types of schools as well as in the education and training of pedagogues

As many other European countries, Austria needs to strengthen its competitiveness and reputation as a business location with a highly qualified work force. Additionally, the digital transformation in the labor market requires new skills of the qualified employees. Based on this, the importance of entrepreneurship education in politics, business, education and society will increase in the coming years.

To be successful in the future, teamwork and troubleshooting skills of employees will get more and more important. Entrepreneurship education significantly helps to build and strengthen these skills. To anchor these values culturally in Austria and to train them from a young age on, entrepreneurship education should be taught systematically and purposefully in all school types. Children, adolescents, and young adults need to learn, train and practice competences and values related to entrepreneurship education along their individual educational paths (e.g. kindergarten, primary, secondary and higher education).

Studies, such as one of the Eastern Norway Institute (ENRI), show that students can only have lasting benefit from entrepreneurship education after having received a minimum of 100 overall hours of learning experience. This positively impacts students in their later work life by enabling them in the areas of teamwork and independent working. ENRI examined the impact of entrepreneurship education on students with a particular focus on junior companies (ICEE = The Innovation Cluster for entrepreneurship education) running from January 2015 to January 2018. One of the key findings of this study was that entrepreneurship education below 100 hours remained largely without creating an impact on students ("A deep dive is better than a light touch")³. Hence, it can be concluded, that the already defined goals at EU level would have to be revised and expanded to require 100 hours of entrepreneurship education experience in schools. In October 2018, one of the largest studies in the field of entrepreneurship education was published. This study forms the base for policy recommendations that will be presented later this year: Austria, Luxembourg, Slovenia, Portugal and Bulgaria participated in it. Specifically, 11,564 children were involved in a qualitative study at primary level, 18,514 were involved in a randomized field test at secondary level; additionally, 1,254 teachers and another 9,000 young people in Bulgaria were involved in this study, as well. It is undisputed that in addition to the quantity of entrepreneurial experience, its quality must also be defined.

³ „Innovation Cluster for Entrepreneurship Education“ (Research project on the influence of entrepreneurship education); Eastern Norway Research Institute (ENRI), JA Europe, Ministries of Education of Estonia, Latvia, Finland, Italy, Belgium; 2018

It is essential that the findings and policy recommendations of the study are communicated to the relevant stakeholders at EU level through various channels. As a first step, the results were communicated on the 26th of October, 2018, at a DG Growth and DG Education meeting in Brussels. Moreover, in the medium and long term, it is imperative to measure the barriers to entrepreneurship education in the existing structures and processes of the school system and to evaluate, for example, hurdles such as inflexible curricula, excessive documentation requirements and the lack of self-organization opportunities in schools. The aim would be to use entrepreneurship education to develop schools in a sustainable way and to apply it in regular lessons, for example by creating compulsory guidelines and introducing entrepreneurship education as a compulsory part of the curriculum. One example how this could be implemented on national level is the mandatory certification of schools with an Entrepreneurship Certificate in accordance with the Austrian Standard Rule (Ö-Norm Regel) 42001. These certifications have been started as a pilot project by the eesi Impulszentrum (Initiative for the Advancement of Entrepreneurship Education for School Innovation) and are now in the expansion phase. Thus, schools could be obliged to deal with entrepreneurship education in general.

Anchoring entrepreneurship education in regular lessons by stipulating a minimum number of hours is only a partial aspect. Additionally, opening and orienting schools towards the requirements of the economy and enabling systematic integration of economic aspects into everyday school life should be strived for. For example, enterprises can specifically support schools and contribute by sharing their knowledge and experience from practice in well-structured teaching units.

A stronger implementation of entrepreneurship education in everyday school life would also affect the education and training of pedagogues. Anchoring compulsory and optional entrepreneurship education modules in the education and training of pedagogues is one of the most important possibilities for the further development of entrepreneurship education in the classroom. For example, there could be developed basic entrepreneurship education modules, which are compulsory for pedagogues. In addition, interested teachers can deepen their specific and methodical knowledge on this topic. In the long term, it would even be possible that each school, depending on the type of school, would be required to have a certain predefined number of educators with in-depth training in entrepreneurship education. With the Kitzbüheler summer school there are already offers for educators who want to continue their education during summer holidays in order to build up competences and get to know tools for entrepreneurship education. This summer school is organized by the University College of Christian Churches for Teacher Education Vienna/Krems (KPH Vienna/Krems), the eesi Impulszentrum of the Austrian Federal Ministry of Education, Science and Research, the Rotary Club Kitzbühel and the Initiative for Teaching Entrepreneurship (IFTE), which also offer other events in the field of entrepreneurship education.

Additionally, an incentive system for schools to support the holistic implementation of entrepreneurship education and a comprehensive education and training of educators should be created (e.g. via targeted financial resources). In 2014, the conclusions on entrepreneurship

education of the Italian Presidency of the European Council also noted that entrepreneurial skills in teacher training and further education should be developed continuously.

3.2. Interlink between the Dual VET-System and Education and Training at Tertiary Level

Measure 1: Systematic development and expansion of an EU-wide system for comparability and linking of acquired competences including the establishment of a transparent validation system

The dual vocational training and tertiary education offerings traditionally address different competences: apprenticeships focus on practical, application-oriented skills, while tertiary education primarily conveys theoretical expertise. In order to safeguard Austria as an attractive business location, both types of knowledge are of equal importance and therefore need to be systematically linked. The prerequisite for this is a much greater comparability of the learning outcomes of the various education sectors, as well as the permeability between different offerings. In order to actually guarantee the permeability of the system, a functioning validation system has to be in place.

For this reason, it is recommended to describe occupational profiles comprehensively and holistically in professional clusters. These should follow already existing models, such as the "Cluster Holz". The different educational offers can / should be assigned to the corresponding competence levels of the EQF (European Qualifications Framework). With a learning-outcome-oriented, descriptive explanation of the educational offers at all levels (upper secondary and tertiary education level), an educative and continuous education system of individual educational paths can be created. The validation of acquired competences could be improved if certain, pre-defined training content of an initial vocational education and training is credited in a standardized way to the corresponding tertiary courses, especially at universities of applied sciences. The basis for this would be a better representation of the qualifications according to the NQF (National Qualifications Framework) or their allocation in the NQF (see also measure 4: Regular adaptation of occupational profiles and the content of vocational training to the requirements of the labor market).

The validation systems should take into account formal as well as non-formal and informal qualifications.

Measure 2: Realization of a comprehensive communication campaign on the manifold possibilities and offers in the Austrian education system in order to increase the awareness in economy, education and society

Although the Austrian education system already offers a multitude of different training possibilities for apprentices and employees to advance their education, the current societal understanding is still dominated by a traditional understanding that by far does not include all possibilities within the system. For example, dual-education pathways leading to (professional) tertiary education are unknown to many people and their families. Conversely, practical

references, which are also taught in academic education, are often unknown. This lack of transparency and knowledge unnecessarily restricts professional and educational choices.

A (more) transparent, easy accessible and clear presentation of the different educational and training opportunities and how they are interlinked should therefore be created. Different (especially digital) media channels should be used to illustrate the variety of educational paths and different options for combination. In general, illustrating the bandwidth of choices in trainings and further education possibilities is of high importance.

In multimedia communication, e.g. within the framework of a national/European platform, the possibilities of combining VET offers at different levels could be presented attractively. The information for relevant stakeholders and actors (e.g. parents, pupils, apprentices, students, employers) should be illustrated by specific examples and testimonials (for example, (professional) academics with an apprenticeship certificate could communicate the benefits they got from their mixed education). At the same time, companies could also present the various options for training and further education both within and outside the company.

Measure 3: Implementation and establishment of a national VET center for educational paths and occupations in Austria

The European Commission plans to launch the promotion of "VET Centers of Excellence" in the Erasmus plus program in the new financial period from 2021 to 2027. In principle, this new approach is very positive, as all relevant actors strive for a systematic, coordinated and goal-oriented approach. As the field of vocational education and training is significantly impacted by the development of the economy and society, changes in the field are quite complex. Therefore, intensive exchange and collaboration as well as a systematic further development of the dual education in connection with the tertiary education are needed.

Consequently, national VET centers are to be set up as "communicators" - consisting of national platforms or regional service centers. On the one hand, openly accessible rooms provide space for information, exchange and networking with the broader public on topics such as educational pathways and professional opportunities in Austria. On the other hand, VET centers can serve as a meeting point for more specialized VET stakeholders (e.g. education policy makers, advocacy groups, education institutions and companies active in further education). VET center programs could be jointly developed by public education institutions and businesses, e.g. in public-private partnerships. Under these partnerships, combined educational programs (keyword: Mutual Learning Program⁴) could be developed according to the needs of the business community. Different (already existing) cluster networks could be responsible to serve as possible regional coordinators for the establishment of VET centers.

VET centers aim to develop communication strategies and content for different target groups. Similarly, already established regional cooperations in the context of education and training, e.g. between universities and companies, could be displayed as best practices. A systematic

⁴ Mutual Learning Program: an EU initiative under the European Employment Strategy to promote and coordinate mutual learning between EU Member States.

representation of different educational ways and their entanglement should be incorporated (see also Measure 2: Realization of a comprehensive communication campaign on the manifold possibilities and offers in the Austrian education system in order to increase the awareness in economy, education and society). The aim of the national VET centers is to bundle regional VET forces in the longer term and to intensify and deepen the exchange with relevant stakeholders at the EU level (Erasmus plus network of "VET centers of excellence") in order to develop innovative strategies and opportunities for vocational education and training based on "mutual learning".

Measure 4: Regular adaptation of occupational profiles and the content of vocational training to the actual requirements of the labor market

In the context of globalization and digitization, the demands of businesses and employees are constantly changing. Teaching content that has been relevant a few years ago, no longer meets the requirements of today. In some professions there is a gap between the formally defined content of VET and competences that are actually needed in everyday work life.

Hence, both training content and occupational profiles should be regularly adjusted to the rapid pace of change in the economy and should be constantly evaluated and updated by involving representatives from industries, educators and trainees.

A more intensive modularization of vocational training can play a crucial role in the development of new occupational profiles as a rapid response to changes in the economy. The groundwork for this has already been laid with the Vocational Training Act (and already been implemented, for example, in Automotive Engineering). The advantage of individual modules of specialization is, that they could be exchanged more easily or, if appropriate, be set up across several professions with the aim of facilitating supplementary specialization in later professional careers. Another advantage of this modularization lies in the so-called "cross-fertilization", understood as a mutual fertilization of individual vocational trainings by complementary training even in diverse occupational fields.

The European Center for the Development of Vocational Training (CEDEFOP) can be best taken on for the European development in this context.

Measure 5: Development and establishment of target-group-specific support for apprentices

Citizens who pursue an additional, second path of education are sometimes confronted with inflexible support services not adjusted to the needs of a more experienced target group. Particularly for adult apprentices, who rely on a certain income or have care duties for children or family members beside working, existing individual support offers are currently insufficient and do not correspond to their actual needs. This lack of support could result in trainee decisions against further education. By this, they miss a chance for their personal know-how and career development.

Therefore, creating adequate and target-group-specific – transparent and individual - support offers is a necessity across education systems. The needs of various target groups and the availability of tailor-made offers to address individual requirements have to be evaluated. Here, digital tools could offer optimal support.

One possible offer could be a more time-flexible form of shaping apprenticeships for adult learners combined with financial support especially for parent apprentices with care responsibilities. Furthermore, higher living costs of adult trainees and financial losses caused by individual training activities could be addressed by specific measures such as individual education accounts and referring guidance for the target group.

3.3. Mobility in the European Education and Employment Market

Measure 1: Evaluation and further development of the existing transparency instruments in order to increase the comparability of qualifications within Europe

Assessing the qualifications of job candidates from abroad often presents a great challenge for employers. Taking into respect the already noticeable shortage of skilled workers in Austria and the necessity for (international) companies to recruit suitable employees for subsidiaries abroad, cross-border recruitment plays an increasingly important role. Fostering job mobility on a broad scale would require more user-friendly tools and mechanisms providing real added value for both workers and employers.

There are various transparency tools across Europe which should help to compare the qualifications of potential candidates, check their suitability and enhance the prospects for reaching a specific position in a company. These instruments, namely the European Qualifications Framework (EQF), the Europass or the European Credit System for Vocational Education and Training (ECVET), however, are currently not transparent concerning the complementarity to each other. Consequently their full potential cannot be exploited. To make the best use of existing structures, they should be evaluated on national and EU level. Their potential use in professional practice should be systematically identified and analyzed.

The goal is to develop these transparency instruments continuously by intensively involving users, i.e. employers, employees and representatives of educational institutions. Future transparency instruments designed to facilitate job mobility should take into account not only formal but also non-formal and informally acquired qualifications. To ensure a broader usage, *transparency tools should be revised in terms of user-friendliness and usability.*

Measure 2: Establishment and operation of an EU-wide online job mobility platform

Citizens looking for a job across borders need extensive, easily accessible and understandable information about employment in their country of destination. They would require specific information on labor and social law framework conditions, such as immigration requirements, applicable labor law and country-specific insurance systems. Currently this information is not

centrally available in most of the Member States. Jobseekers have to gather information from different places or acquire it through time-consuming research activities. This is challenging for cross border jobseekers, as they often do not sufficiently know the various regional structures (e.g. authorities and associated responsibilities) in foreign countries.

Consequently an EU-wide online platform for cross border jobseekers is proposed, containing all relevant information across Europe. The platform should provide jobseekers with basic information on specific labor and social framework conditions (such as the insurance or pension system) of all EU Member States and at the same time show reliable contact points in the respective countries available for further questions. Digital technologies, such as chatbots, can be integrated into the website to simplify communication processes.

Ideally, the online platform should be implemented as a "one-stop-shop" for jobseekers with information tailored to the needs of the target group. It must be verified in advance whether existing platforms, e.g. EURES - the European Job Mobility Platform -, could serve as the basis for the new jobseeker platform.

Furthermore, the platform could provide information about different support options, e.g. for funding. To facilitate job mobility across borders, information and practical tips outside the professional context could be provided to workers and their families. Being aware of the regional availability of accommodation, language training, childcare and mobility support would facilitate the movement or settling in a new country.

In addition to the online platform it would be advantageous to have real contact persons in the individual EU Member States, to whom interested parties can turn in case they have additional questions. A link to existing organizations and institutions, such as the Public Employment Service Austria (AMS), could be established.

Measure 3: Further development and systematic dissemination of already existing EU-wide job platforms in order to facilitate job mobility in Europe

Information on job vacancies and profiles of jobseekers should be easily accessible to a broad range of actors in order to ensure the filling of vacant posts and increase job mobility within the European Single Market. The European Employment Services (EURES) network has already implemented a large job search platform. European companies as well as national employment services have the opportunity to post job vacancies. Jobseekers can create their own profiles. The generated pool of vacancies and jobseekers offers a great potential to handle the shortage of skilled workers in Austria and other European countries and supports job mobility. However, this instrument is currently used very little due to the lack of awareness as well as its low adaptability to user requirements.

The EURES platform should be developed further and functionalities should be extended. In a co-creation process, users (jobseekers, employers, national employment services, recruitment agencies, companies, etc.) could be targeted to ensure a high and improved user experience in order to increase the use of the platform. An intensive multimedia communication

campaign could help to make this platform known across the EU (see also Measure 2: Establishment and operation of an EU-wide online job mobility platform).

Measure 4: Development and establishment of a legally unified and easily accessible EU traineeship

Since written application documents are usually not always sufficient for the evaluation of job candidates, personal recruiting measures (including face-to-face job interviews and participation in assessment centers) are common. Even though job interviews can be conducted online, e.g. via Skype, getting to know each other personally is nevertheless an important precondition for the final selection of applicants. Face-to-face contact helps to better evaluate the qualifications and knowledge of the applicant and match them with the requirements of the company. However, face-to-face contact is difficult in case of recruiting internationally, as jobseekers from another city or country often would not pay for travelling to job interviews or assessment centers abroad. Moreover, employers also face bureaucratic and legal hurdles if they want to offer practica in their companies (insurance cover, remuneration issues).

For potential employers and employees new instruments are needed for getting to know each other in a cross-border context. An easily accessible and implementable EU traineeship in an EU-wide standardized format could be a viable solution for both employers and applicants. Such an internship could, for example, last five working days. An EU-wide uniform format could make it possible to get to know each other without major bureaucratic and financial costs for both sides before finalizing a job decision and starting work. In addition, existing employees could, in coordination with their employer, use the EU short internship to complete further training at other companies within the EU.

4. Summary of the Results

In the course of three co-creation workshops under the title "Reality Check", the needs of relevant stakeholders in the field of entrepreneurship education and vocational training were identified and suggestions for associated measures and policy recommendations were developed by involving unusual stakeholders, in particular directly affected persons and users.

The following results were developed in the three fields "entrepreneurship education", "interlink between the dual VET-system and education and training at tertiary level" and "job mobility":

4.1. Entrepreneurship Education in Schools

As entrepreneurship education builds up key competencies (such as teamworking and troubleshooting skills) required in a modern work environment, it should be more firmly anchored in education and training systems.

A systematic exchange of relevant stakeholders in entrepreneurship education and mutual collaboration should be promoted, in particular with regard to projects and initiatives. The weight of entrepreneurial education in schools is still too low; more incentives should be created for its implementation. In addition, more sensitized and entrepreneurially trained pedagogues are needed in order to convey the importance of entrepreneurship education to pupils. A systematic involvement of enterprises would be definitely useful. In general, the high level of bureaucratic burden in educational institutions limits the rapid implementation of entrepreneurship education.

In order to raise awareness for the importance of entrepreneurship education, a comprehensive communication campaign is needed and should target business, politics, education and society. To better visualize projects, but also to create a comprehensive network of stakeholders, an online platform could be set up. In order to connect relevant stakeholders in a targeted manner, the establishment of national entrepreneurship education hubs and their systematic collaboration at EU level - including Eurydice - is recommended. Additionally, measures should be taken to embed entrepreneurship education targetedly and systematically in all types of schools. At the same time, entrepreneurship education should also become an inherent part of the education and training of educators.

4.2. Interlink between the Dual VET-System and Education and Training at Tertiary Level

In order to be prepared for a broad upskilling of the work force and new qualification requirements in the labor market, (future) employees are required to combine theoretical and practical trainings, such as a dual education with a university/tertiary degree.

Currently, there are major knowledge gaps in the economy, education system and society about appropriate educational opportunities and needs. The lack of comparability of learning outcomes complicate the actual linkage of offers for VET at different education levels.

To address these challenges, it is recommended to develop and expand EU-wide supporting systems for the comparability of different education and training opportunities across occupations. In addition, a communication campaign on the opportunities and offers of the education system and its combination options should help to create more awareness in the public about this highly relevant topic. Furthermore, VET centers are to be set up as public-private partnerships (educational institutions and companies) in the field of vocational education and training. The setup of "VET Centers of Excellence" could be funded with the planned new funding from the European program Erasmus plus. They are intended to promote the mutual exchange of approaches and experiences within Europe. Both occupational profiles and teaching contents of vocational training as well as support services should be much more targeted to the actual needs of the changing labor sector as well as diverse target groups in a lifelong learning perspective.

4.3. Mobility in the European Education and Employment Market

Job mobility is becoming increasingly important across Europe. However, the wide variety of VET systems within Europe hamper the comparability of qualifications. In professional practice, existing EU transparency instruments are not implemented intensively enough, resulting in slight knowledge about these instruments. In particular, the comparability of non-formal and informally acquired qualifications must be significantly improved and applied in cross-border contexts. Workers are also confronted with insufficient information on country-specific labor markets and job requirements and get little support in case of movement within Europe.

Therefore, existing transparency instruments should be evaluated and further developed in a targeted way. By establishing an new online platform or the corresponding further development of the EURES platform, employees should be able to obtain sufficient information about opportunities for job mobility within Europe as well as about job vacancies. In addition, an easily accessible EU traineeship could facilitate the application process and the selection of the right candidates across borders within the EU.

5. Appendix

5.1. Participant List

List of participants “Reality Check: Job Mobility” - May 7, 2018, Linz

Organisation	Name	Mail-Adresse
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List of Participants “Reality Check: Awakening and Encouraging Entrepreneurship” (Entrepreneurship Education) - May 15, 2018, Vienna

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Teilnehmer/-in einer gemeinnützigen Gesellschaft	anonymous	anonymous

List of Participants “Reality Check: Innovatively Interlinking Dual System and Tertiary Education” - May 17, 2018, Vienna

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5.2. Complementary Data Collection: Questionnaire and Evaluation

As part of the workshops on "Interlinking of Dual System and Tertiary Education" and "Job Mobility", a questionnaire was issued to a total of 32 participants. Its contents are shown below:

For the participants:

Private sector: yes/no
 Area:
 Employee: yes/no
 Entrepreneur / Manager yes/no

Questionnaire

The Austrian vocational training system

How do you rate the teaching of the following contents / areas in college / school or dual education?

Please use the school grading system 1 "Very good" to 5 "Not enough"

	Secondary Education	Duales System	BHS ⁵	AHS ⁶ / NMS ⁷	College
Entrepreneurial action and thinking					
Professional competences (skills that can be used in the labor market)					
General education (e.g. Mathematics, German, Sciences)					
Soft skills and interdisciplinary skills (e.g. communication skills, problem solving skills, etc.)					
Foreign languages and intercultural competence					

⁵ BHS: vocational school with higher education entrance qualification

⁶ AHS: SAS (Secondary Academic Schools)

⁷ NMS: New Secondary School

Vocational education at European level

Have you heard about the following European tools / activities for promoting vocational education and training (awareness)?

Have you already used the following European tools / activities for the promotion of vocational training (application)?

Were these tools / activities useful from your point of view (helpfulness)?

Please use rating 1 "Very good" to 5 "Not at all" or "Never heard of"

	Awareness	Application	Helpfulness
Program Erasmus plus			
National and European Qualifications Framework (NQF/EQF)			
European Skills/Competences, Qualifications and Occupations (ESCO)			
European Alliance for Apprenticeships (EAfA)			
Europass CV			
Europass Mobility			
Europass Certificate Supplements			
European Credit System for Vocational Education and Training (ECVET)			

Dual education at European level

Should the EU operate in the following areas and develop tools for companies or individuals to use?

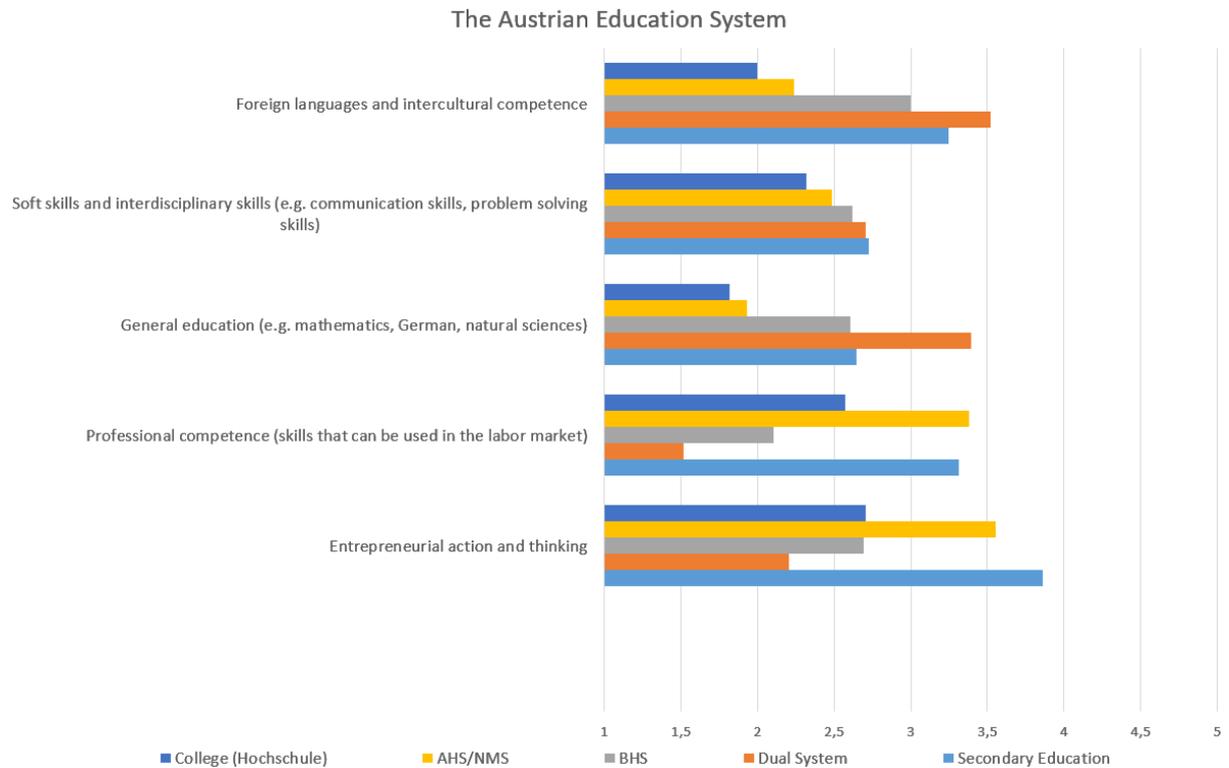
Please use rating 1 "Very important" to 5 "Not important at all".

Area	Rating
Comparable transparency and classification systems of educational qualifications within the EU	
Funding to strengthen educational and occupational mobility	
Validation of informally acquired competences (i.e. knowledge and skills acquired through professional practice)	
EU-wide uniform definition of "entrepreneurship"	
Assistance in recruiting specialists from other EU Member States ("International matching platforms", etc.)	
Promotion of internships abroad during training in BMS (school for intermediate vocational education) or BHS (college for higher vocational education) for more than 3 months	
Promotion of internships abroad during training in BMS (school for intermediate vocational education) or BHS (college for higher vocational education) for less than 3 months	
Promotion of internships abroad during apprenticeship for more than 3 months	
Promotion of internships abroad during apprenticeship for less than 3 months	
Promotion of work trials (short-term work assignments in companies) by foreign skilled workers ("recruitment assistance")	

Development of an EU-wide standardized competency terminology (extensive list of competence terms for all occupations) for the description of occupational profiles by companies.	
Language support	
Travel reimbursement in international recruitment processes	
EU-wide apprenticeship job market	
EU-wide internship exchanges / offers	
EU-wide job boards	
Development of standardized CVs	
Development of EU-wide standardized qualification profiles for job vacancies	

Evaluation

How do you rate the teaching of the following contents / areas in college / schools or dual education?



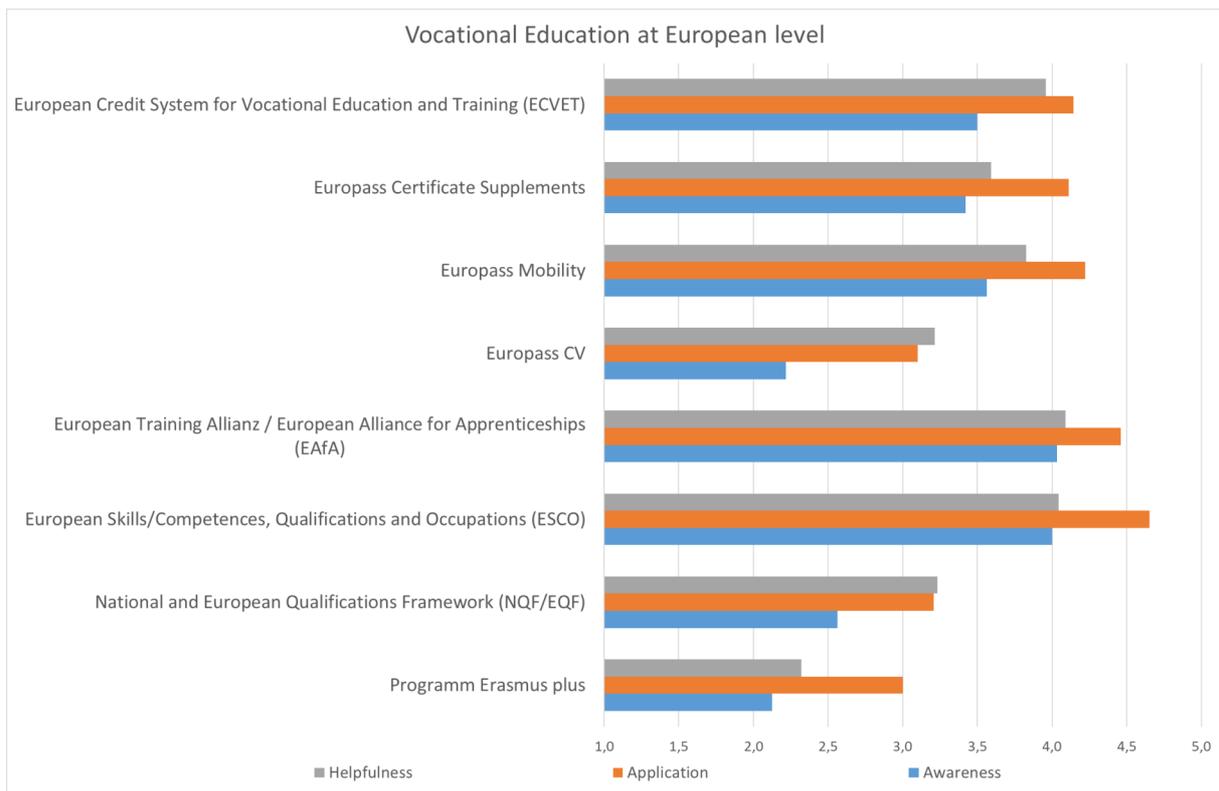
Legend

- 1: very good
- 2: insufficient

Have you heard of the following European tools / activities for promoting vocational education and training (awareness)?

Have you already used the following European tools / activities for the promotion of vocational training (usability)?

Were these tools / activities useful from your point of view (helpfulness)?

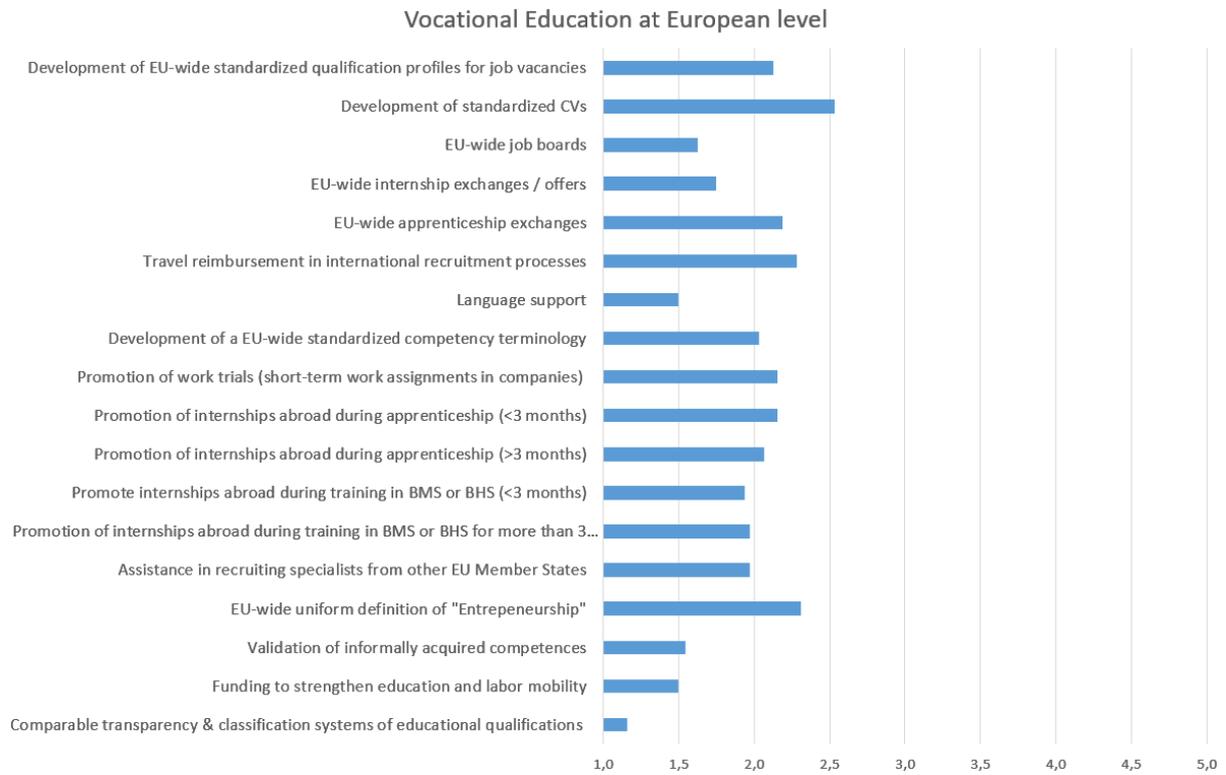


Legend

1: very good

5: not at all or never heard of

Should the EU operate in the following areas and develop tools for companies or individuals to use?



Legend

1: very important

5: not at all important