Escape to Stay -
make VET your first choice
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Intellectual Output 1

White Paper: "What makes vocational training attractive?"
Improving the image of VET with effective educational Escape rooms

Developed by the Escape2Stay - ERASMUS+ - Project-Partnership:

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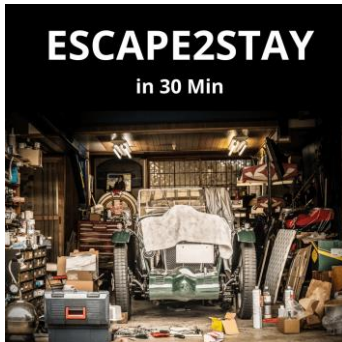
Escape 2 Stay

White Paper: What makes vocational training attractive?

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1. Introduction

The Escape2Stay project picks up the approach of game-based learning scenarios, in particular Escape room settings for the purpose of vocational guidance.

The White Paper casts new light on vocational orientation beyond traditional formats thereby emphasizing its importance. And it hopefully encourages and makes you as (in-company) trainers, teachers and vocational counsellors want to try out and create Escape Games yourself.

Vocational education and training (VET) is a specific form of education, where young people are undergoing training in a certain profession. VET can happen in a classroom setting, in hands-on practice or in companies in the form of a dual VET system.

Trainees in the dual VET system typically spend part of each week at a vocational school and the other part at a company, or they may spend longer periods at each place before alternating. There is a growing awareness across Europe and all over the world that excellent work-based vocational education and training is vital for competitiveness and social participation. Companies across Europe urgently need qualified VET specialists.

The key challenges for vocational education and training (VET) are demographic change with all its consequences including the implications for securing the skilled workforce, and internationalization in business and society and the associated task of integration. VET has a key role in providing people with the initial skills and qualifications to enter the labour market and supporting their upskilling and reskilling in a lifelong perspective to enable them to successfully manage career transitions.

The OECD data show an enormous increase in the number of participants in academic courses of education for the period from 1995 to 2010. In the same timeframe, occupation-related and practice-related courses in the tertiary sector of education are stagnating.

Already today, the skills gap is largest among people with completed vocational training: 48 percent of the companies report a shortage here, while only 27 percent complain about a lack of academics.

At the same time, even in traditional WBL countries such as Germany, vocational training is becoming increasingly less important than studies. In 2020, for the first time, more people started higher education than vocational training.

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The right Career orientation is a process with two sides: On the one hand, there are young people who orient themselves, get to know their own interests, competencies and goals. On the other hand, there are the requirements of the world of work, towards which young people are oriented.

As career choice research has shown, young people are guided by different motives in their decision-making for or against occupations.

On the one hand, young people want the job to be fun for them, and other circumstances such as e.g. working hours, salary and opportunities for advancement should also be right. On the other hand, their career choice – often not even consciously – is also driven by the desire to find social recognition with their chosen profession and to strengthen their own social identity.

Young people today get easily bored! If they are offered information and knowledge in the traditional way, they aren't interested in it. "Gaming" is the way they interact in their everyday activities.

Research has shown that the use of gamification is beneficial to engaged learning as it is active, increases motivation and satisfaction, accommodates a variety of learning styles, reinforces mastery, and provides interactive decision making context (Ansted, 2016; Egenfeldt-Nielsen, 2005).

In addition, gamification has the potential to foster curiosity and problem-solving, especially when working with complex rules and overcoming multiple obstacles. The students' skill sets are increased, as well as their sense of accomplishment and optimism (Faiella & Ricciardi, 2015).

Gamification also lacks the negative impact from wrong or unjustified choices allowing failure and the opportunity to reframe mistakes as a crucial component of the learning process (Ansted, 2016)

In our ESCAPE2STAY project, we will use ESCAPE Games to promote the attractiveness of in-company initial training and proactively inspire young people for vocational training!

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Escape rooms are a particular form of entertainment event, in which a group of people is locked in a room and has to solve puzzles and riddles to get out. A game master is available to provide hints if necessary and release them in case of emergency. Escape rooms have gained popularity in the 2010s and since then, the game format is also available as mobile/gaming applications, board game variations, and books.
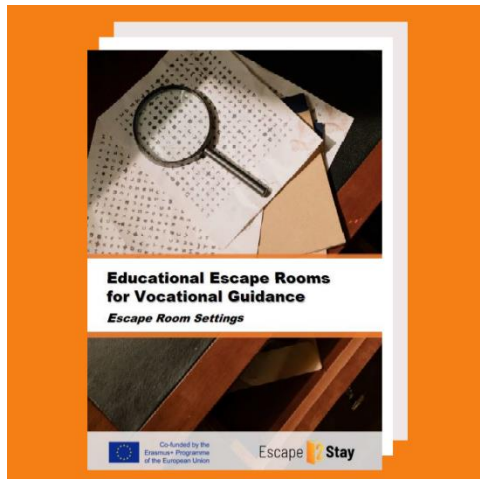
The attractive element of escape rooms for VET is that players have to demonstrate a variety of skills and knowledge to solve the game successfully. This can assess the competencies the players possess as well as make the player aware of their potentials.

On top of that the escape games are fun and are a memorable experience as the success has an empowering component as well.

Based on a data collection phase including a national desk research and focus group interviews this White Paper has been produced. It helps to understand the potential of educational Escape Games for vocational guidance and reveals concrete, attractive elements from the professional working world to be demonstrated to the target group in the Escape Room settings.

This White Paper was written within the scope of the first phase of the "Escape2Stay" project. It is a document that gathers and synthetizes the information contained in all the five national reports that were written by the five partners of the consortium (IHK-PG (DE), Auxilium (AT), CEPROF (PT), Solski Center (SLO), Camara Zaragoza (ES)) and that were based on research conducted at a national level by each one.

In the first phase of the project the objective was to do research that could shed a light on the educational potential of Escape Rooms and with this, inform young people about alternatives that exist to university studies, mainly career opportunities offered by work-based learning (WBL). In the end, the ultimate goal of the project is to get across an improved image of Vocational Education and Training (VET).

Partners researched documents (e.g. scientific papers, articles, reports, etc.) written about VET education and Escape Rooms in order to formulate a state-of-the-art status on these two subjects. The aim was to research documents related only to each partner's national reality. The work that led to the national reports was divided in two main parts: a desk research and a focus group.

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The philosophy applied in the desk research was also applied in the next phase, where partners conducted an oral research. Each member of the consortium conducted at least one focus group session with specialists that, in one way or another, are related to Escape Rooms, VET education and to other areas covered by the "Escape2Stay" project: Escape Room specialists, VET teachers and students, Career Advisors, Psychologists, IT experts, Project Managers, Learning Advisors, and others.

In the focus group interviews the partners were dealing with people from very different professional and personal backgrounds, the experiences that all participants of all focus group sessions have with Escape Rooms vary greatly:

- there are participants who deal with them every day;
- participants who have experience of teaching or training resorting to escape games;
- participants who have implemented escape games as a method of vocational guidance; participants who had their first contact with an Escape Room for entertainment purposes;
- participants who have played escape games in a mobile or board game form and participants who have yet to experience an escape game for the first time.
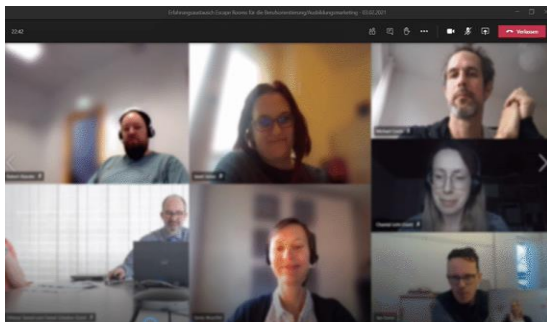
In the Focus Groups were also participants who have experience in vocational guidance and attracting students to VET programmes, mainly those who are teachers, and institutions that offer formats for vocational guidance.

The White Paper summarizes the findings that were reported in each of the five national reports. Because there were similar topics discussed in both the desk research and the focus group phases it was decided to write this document without dividing the information in different areas. The different sections found here are in regard to the most important topics discussed.

The first major chapter talks about VET education, its main characteristics and the different realities of this educational sector found in the five countries that form the project consortium: Germany, Austria, Portugal, Slovenia and Spain.

The second major chapter contains information about escape rooms, its usefulness as an educational tool and the different national contexts of the implementation of this gamification process.

The complete national reports will be available in EN and all partner languages (de, pt, sl, es) on the website of the "Escape2Stay" project: www.escape2stay.eu and in the annex of the White Paper. Anyone who is interested in reading them can download the pdf files for free.

SCAN ME

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2. Vocational Education and Training

2.1. An overview of VET education: the European context, national realities and its attractiveness

The EU Commission's 'New Skills Agenda for Europe' vowed to make VET 'a first choice' educational option for young people and stressed that businesses – and social partners – 'should be involved in designing and delivering VET at all levels, as demonstrated in the "dual system" of apprenticeships' (European Commission, 2016)

Dual VET, WBL or apprenticeship is a specific approach to vocational knowledge, skills and competences training in which a large part of the training (50 per cent or more) takes place in companies, so that trainees are both employed and paid by the companies and working towards a formal qualification recognised by the country's education system. This distinguishes dual training from other forms of workplace learning, such as internships or on-the-job training, which take place outside the education system and do not lead to a formal qualification, and from the shorter and less formalised forms of 'practice' offered to students in a school-based VET programme.

Good quality VET also contributes to the inclusion of vulnerable groups. This means that broad accessibility needs to be ensured and any remaining barriers to participation, including for people with disabilities, low-skilled adults, ethnic and racial minorities, and people with a migrant background be removed.
(EU Council recommendations 2020/0137 (NLE))

With the game-based approach the Escape2Stay project actively takes into account different needs and hurdles that might prevent young people from choosing VET. Either because they do not feel suitable for a certain profession or they are less addressed and reached with commonly used activities of vocational guidance. Vocational guidance and marketing for vocational careers are very important for European companies in the "war of talents" between vocational and academical training.

Since Escape games are well known from the entertainment sector they hold great potential to attract and integrate target groups with more challenging social or economic backgrounds, such as students with a migrant background.

Enhancing its hands-on approach it can be adapted to different guidance aims and applied for making students familiar with different vocational profiles. Qualification fitting the demands of the world of work is not only a development task for young people. It is a matter of the transition into the adult world, the task of releasing oneself from the parental home, of participating in society and to take on responsibility as citizens. Educational and professional paths determine not only the future place of employment but also have an impact on the whole living environment of those involved.

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The political support for the expansion of apprenticeships in Europe had been mobilised in the 2013 declaration of the Council of the European Union for a 'European Alliance for Apprenticeships'.

While dual VET and WBL provides very good employment prospects in occupations highly demanded on the labour market, it still faces a challenge of low attractiveness for learners and companies in most member states. This means that more efforts are needed in increasing attractiveness of VET by innovating and modernising it, notably in terms of new learning environments, pedagogies and vocational guidance.

Vocational education in the EU
(2018 data)

8.5 million pupils in vocational education at upper secondary level in the EU

48% of all pupils at upper secondary level

Among which ... 58% are boys 42% are girls

ec.europa.eu/eurostat
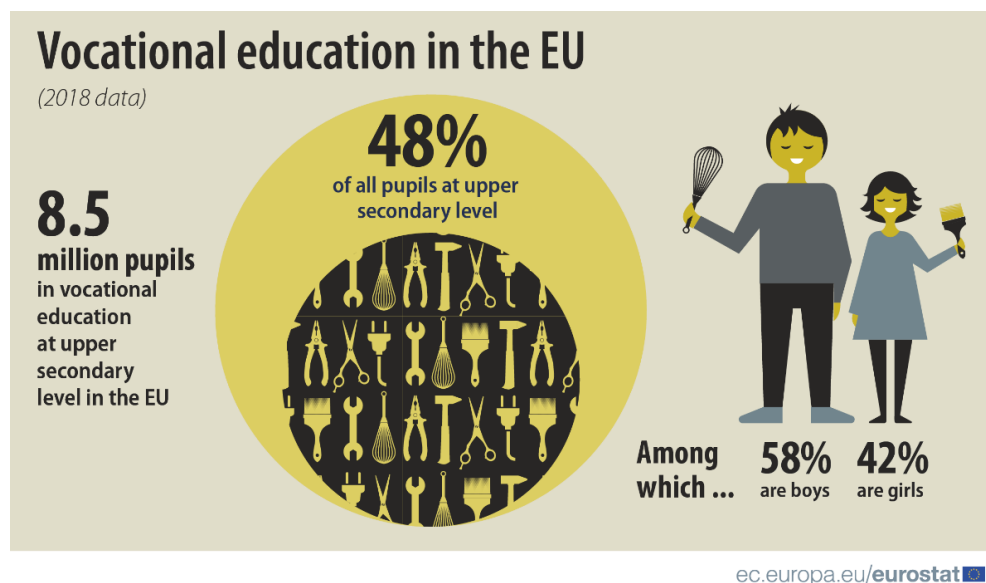
The EU does not truly have a mandate to harmonise member states' educational systems; in fact it was explicitly forbidden from doing so by the Treaty of Maastricht. Nevertheless, by setting joint targets and conducting benchmarking exercises, by providing funding for specific policy undertakings, and above all by pushing for cross-border mobility and mutual recognition of qualifications, the EU has become increasingly assertive in its role as the driver of national reforms (Loogma, 2016; Powell and Trampusch, 2012)

Effective apprenticeships must be attractive to learners, employers and to society. Young apprentices should be confident that the skills they are taught will be relevant to their long-term prospects for high-quality jobs. For employers, apprenticeship should be a cost-effective means of ensuring new recruits have the knowledge and skills they require.

When both learners and employers win from the arrangement, so does society.

Well-functioning apprenticeship programmes ensure that what young people learn will match skills in demand, underpinning personal and national prosperity, with employers contributing to the costs of preparing the next generation of workers across broad occupational sectors. It is through such a balancing of interests, driven by strong social partnership, that millions of young people can be protected from the worst consequences of the economic recession that lie ahead. (CEDEFOB "The next steps for apprenticeship")

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For the state and the apprentices themselves a broader set of skills is preferable, as it means more options in the labour market after graduation. The unions too have an interest in ensuring that the apprentices receive a comprehensive training and are not merely being used as cheap substitutes for skilled labour.

For the employers, however, this means having to provide their apprentices with skills that are well beyond what may be required by the firm itself, which both makes it expensive and exposes them to poaching by other firms that can make use of the skilled graduates without having invested in training (Acemoglu and Pischke, 1998; Becker, 1964).

Skills Development Scotland surveyed over 2,500 employers to hear their views on modern apprenticeships and the benefits they bring to their businesses. The survey has shown that employers are continuing to invest in modern apprenticeships. (https://www.sqa.org.uk/sqa/79475.html)

What employers say about Modern Apprenticeships/WBL:

Improving the workforce			Meeting training needs		
96% say those who have completed a Modern Apprenticeship are more able to do their job	92% say those who have completed a Modern Apprenticeship were more able to work with others	76% say most of the Modern Apprenticeship are new employees	84% satisfied with the relevance of training	82% satisfied with the communication from the training provider	84% with the quality of training
Improving the workplace					
75% say Modern Apprenticeships improved productivity		72% say Modern Apprenticeships improved staff morale		71% say Modern Apprenticeships improved their service or product quality	

source: https://www.sqa.org.uk/sqa/79475.html

Apprenticeships are also highly heterogeneous on an organisational level. In some countries, on-the-job training and school-based learning alternate within a week; in others two years of VET school are followed by two years in a firm. In some countries, apprenticeship pay comes close to that of a skilled worker; in others it is no more than weekly pocket money.

The new interest in apprenticeships in the aftermath of the economic crisis has also generated abundant comparative studies (Cedefop, 2018;European Commission, 2012; European Commission, 2013; OECD, 2018) illustrating differences and similarities between apprenticeship programmes.

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A proposal on how to explain these differences and similarities has recently been made by Markowitsch and Wittig (2019), who classify 40 apprenticeship programmes identified in 25 European countries according to four different institutional education logics on the basis of the programme's key purpose, organisation, and definition of content: enterprise training; professional education and training; school or university education; and public training as part of active labour market policy.

Typology of VET logics relevant for WBL / apprenticeship			
Logic	Key purpose	Ownership	Financing
Enterprise training	Fulfilment of enterprises 'skill needs	Enterprises	Enterprises (with public co-funding)
Professional education	Integration into a professional community	Professional community (employers and trade unions)	Professional community (employers)
School or university education	Personal development and citizenship	Public authorities or self-governing educational institutions	State budget
Public training Schemes	(Re)-Integration into the labour market	Public labour market service	State budget

Source: Markowitsch & Wittig; 2019

The political commitment has since been reinforced by regulatory formalisation of apprenticeships, with the Council of the EU Recommendation on a European framework for Quality and Effective Apprenticeships (Council of the European Union, 2018).

Suggestions for the reform of VET policy, often explicitly focused on apprenticeships, have also become common in the country-specific recommendations.

Countries that in the period 2012–2019 received explicit recommendations to introduce or reform apprenticeship systems, or make them 'more attractive' in order to improve employability, productivity, or social cohesion include Belgium, Bulgaria, Croatia, Denmark, Estonia, Ireland, France, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK. (CEDEFOP)

Through the European structural and investment funds, as well as through Erasmus+ and Youth Guarantee schemes, the EU financially supported most of these initiatives, and promoted partnerships between the German and Austrian ministries of education and other EU member states to develop dual training. (https://www.bibb.de/en/25377.php)

In the Escape2Stay project partners from Austria and Germany transfer their long term experiences from a real dual VET system to partners in Portugal, Slovenia and Spain.

In countries like Germany and Austria, there is a distinction between a dual system, a combination of training in a VET school and in a company (in the form of an employment relationship/apprenticeship, which can be classified as work-based learning), and a full-time school system (the first option is the most chosen).

Companies understand dual training as a way to secure their human resources. However, some are struggling more than others and need to be more active in attracting new junior staff due to a shortage of skilled workers. In terms of the productivity of apprentices, the talents of apprentices already come into play during their training. In many cases, apprentices generate more revenue than they cost. In addition, young trainees bring fresh ideas and the impetus of a new generation to the company.

Table 1: Germany - Beginners after lower secondary school in 2019 (BMBF 2020)

Beginners	Absolut	Percentage
Total beginners	1,986,564	100%
A) Vocational training	730,260	36.8%
-> dual vocational training	492,276	67.4%
-> school-based vocational training	186.048	25.5%
-> other school-based training ie. civil service training	51,939	7.1%
B) Measures in the transitional area (ie. acquisition of training maturity, bridging of unemployment, catch up school-leaving certificate)	255,282	12.9%
C) Acquisition of the university entrance qualification (typically school-based)	486,261	24.5%
D) University entrance	511,761	25.8%

The last two sectors, showing the number of students acquiring their university entrance qualification and first-year students at universities, shows quite a high number, reveal one of the challenges of companies which is the competition for new junior staff. This can be solved by training own staff, for example with dual training (apprenticeships).

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The dual VET form is widely accepted in Germany from the companies' perspective, because it holds several advantages for them:

1. Productivity of apprentices: The talents of apprentices already come into play during their training. In many cases, apprentices generate more revenue than they cost. In addition, young trainees bring fresh ideas and the impetus of a new generation to the company.
2. Access to qualified specialists: Even today, qualified skilled workers are hard to come by. Those who train prepare the next generation very specifically for the tasks in the company.
3. Lower training costs: Finding, training and qualifying skilled workers is time-consuming and expensive. Those who train themselves save time and money.
4. Fewer miscasts: Companies get to know their trainees very well in two to three and a half years: Time enough to check motivation and suitability. Expensive miscasts are much rarer than when hiring external specialists.
5. Employee identification: Training leads to higher identification of all employees with their company.
6. Image benefits: The reputation as a training company improves the image of the company.

To talk about VET education and its various forms across all 27 European Union members is a challenge, because there is not a single VET system in the associations of states. Instead, in all 27 countries, as we saw in the previous paragraph, VET education has respective particularities depending on several factors, such as the needs of the population and of the national labour market.

Despite the differences, there are other aspects that interlink all realities of the European context: the desire to improve the attractiveness of VET and its advantages; this was something that began being fostered in 2002, with the Copenhagen Process, which was launched with the priority of improving the quality and attractiveness of VET and was reviewed in 2008, with the Bordeaux Communiqué.

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The Bordeaux Communiqué pointed out several actions that could be undertaken in order to improve the image and attractiveness of VET education: guidance and counselling, equitable access and participation in VET, development of school-business partnerships, among others.

A year later, ENQA-VET, the European Network for Quality Assurance in Vocational Education and training, listed six conditions that were to be followed to make VET more attractive to learners, and that are common to VET in all countries and still very relevant currently:

1. Quality Management: this is the key to making VET attractive and covers areas like legislation, governance, information and guidance services, among others;
2. Labour market relevance: VET must lead to qualifications that are going to be relevant for the students in the job market;
3. Progression Pathways: students must be able to transition from one level of qualification to another without any major difficulties;
4. Status and Image: this is related to the way VET is promoted to the public, and that must be done in an appealing way;
5. Information and Guidance: this topic regards the way the information is presented and the quality of the advisory services offered by the institutions;
6. Learning Facilitators: the competence of the teachers and trainers is essential to the experience of the students, and if the quality of the teaching is poor, they will suffer from it.

As it is stated by ENQA-VET, the term "attractiveness" is a subjective one, and there may be some cases where what is attractive in a country is not in another. Nevertheless, ENQA-VET states that the impact on the attractiveness of VET is connected to the value that the job market and general society attribute to it.

Following that, the network lists what it considers to be characteristics of what is deemed attractive VET, and we present here a selection of them:

● Quality of research that underpins policies and practices;
● Quality of co-operation between stakeholders, like the one between VET and the labour market;
● Usage of effective learning approaches, methodologies and tools;
● Quality information, guidance and counselling services;
● An environment that is appealing to young people.

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We have discussed in the ESCAPE2STAY partnership that the link between VET provider and the companies / job market is an important one, and in fact, the period of work-based learning / apprenticeship is a kind of gateway that the VET learners can go through to enter the job market, and this has advantages for two different groups:

- The VET learners, who have an excellent opportunity of showcasing their skills to the company, which can result in a future job offer.
- The companies, because they can hire qualified and productive workforce that already knows the reality of the workplace in the company.

Generally, technical and ICT professions are the ones more in demand in our partner countries. This is the case with Slovenia which has high demand in the areas of programming engineering, mechanical engineering, electrical engineering, physics and mathematics. In Portugal the offering of VET courses was extended so it could cover areas such as renewable energies, electronics and automation and ICT.

In 2020, in Austria, the areas that were the most covered through a system of dual education were : metal technology, retail trade, electrical technology, automotive technology, installation and building technology, office clerk, mechatronics, carpentry, hairdresser/stylist, and cook.

In Spain across the intermediate and the higher levels, most of the students are enrolled in the areas of health, administration and management, computer science and communications, and socio-cultural and community services.

In Germany the majority of the workforce is represented by people who have gone through a vocational education and training. The number of new entrants to vocational training in the dual system has risen by 1.3% or 5,500. It was 437,800 in 2021 (including 36.8% women). At the end of September 2021, there were still around 63,000 unfilled training places, but only around 25,000 unplaced applicants. "Some training occupations are simply too little known, others are not in high demand for very different reasons."

One of the biggest advantages of the vocational training is that it mostly ensures that the students can enter the job market and perform right away. In Germany, a total of 67 percent of apprentices were taken on after their training in 2021. In the metal sector, the figure is as high as 84 percent.

Another big advantage of the VET education is that the students, upon completing a course that is very hands-on, are specialized in a particular field and, because they were trained for that during years, are able to perform without major problems.

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In all our five partner countries VET has been around for a considerable number of years and there are some considerations and statistics that prove how effective and accepted this system has been so far:

- In Germany, vocational training traditionally represents the largest educational pathway taken up by students after lower secondary level. The number of beginners of a VET course in 2019 made up around 37% of all starting students. Thereof, 67% choose the dual training form;
- In Portugal, more than 37% of young people chose VET in 2019 and since 2008 there has been a decrease in the early dropout from education and training;
- In Spain, in the last five academic years there has been an increase of 23% of the number of VET students (Spain is below the average of OECD countries when it comes to the percentage of students between 15 and 19 years old who are enrolled in VET courses);
- In Austria, vocational education is highly respected, as it has a high level of acceptance and social and economic status; in the school year of 2018/19, around 76% of students in the 10th grade in Austria attended a vocational school (37% were enrolled in dual education training).

The difference of VET schools compared to schools that offer VET courses lies in the type of courses offered, but one thing is common to all which is the focus on turning the students into people specialized in a certain professional field, awarding them the EQF level 3 or 4.

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2.2. Vocational guidance in VET: the goals, the target groups and the challenges faced by the practitioners

In view of the shortage of skilled labour (DE and AT) plus the trend towards academisation and VET as 2nd choice (IT and PT), there is a need in all partner countries to inform young people even better about the very good career opportunities offered by VET. In this sense the project takes up the European Competence Agenda (EC, 2016), where it highlighted the need to show young people and their parents that vocational training can be as attractive a career as general education pathways.

In the VET education system, vocational guidance is an important step in the educational life of the students. It is a guidance process conducted by a vocational counsellor and offered by the school or other institutions and has the main objective of helping the students decide which training path they should focus on. Since vocational guidance is a close guidance process regarding a student's specific situation, it should be conducted always having in mind the student's particular needs.

Source: https://www.deqa-vet.de/en/learning-in-company.php

In the ESCAPE2Stay project the terms "vocational guidance" and "vocational orientation" are understood as similar terms for the efforts to provide advice and information about the choice of a career, specifics on career requirements, how the world of work functions, good reasons for young people to choose a VET programme as well as information on the situation and development of the labour market.

In general, the main target group of vocational guidance are students around the age of 14 who are attending the equivalent of the 9th grade of regular education. These are young people who are at a decisive point in their lives where they have to choose which professionalization path they want to take moving forward.

The main challenge for VET / WBL is a realistic vocational orientation before the learner starts a vocational career, otherwise we have a high number of dropouts and frustrated learners. The dropout rate in dual vocational education and training in Germany was 25.1% in 2020 !

The main challenge for VET / WBL is to offer to school pupils a vocational orientation process that will enable them to develop a realistic idea of their own abilities and interests and to gather practical experience in a variety of occupational fields.

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Vocational orientation is a process that has two sides. On the one hand, we have the young people who are seeking to orient themselves towards their own interests, competences and objectives. The other side consists of the requirements of the world of work, to which the young people are guided. Both of these sides constantly need to be rebalanced. (https://www.bibb.de/en/46.php)

Source: https://www.berufsorientierungsprogramm.de

Early vocational orientation and clear understanding of vocational profiles help ensure a seamless and successful transition from school to the working world. Providing accessible, user-friendly and impartial information on VET is important to ensure that young people can make informed choices. It is also important to create a positive image of the learning outcome in specific occupations that the WBL is leading to.

But if we take a quick look at some specific cases of countries of the project consortium, we see that the target varies a little.

In Germany there is a distinction between two target groups:

- Students in the last three school years where the guidance covers training activities for vocational training preparation and basic vocational education;
- Young people with a migration background who are integrated in a training system and/or in the job market (assisted by the Federal Ministry of Education and Research and the Federal Employment Agency.

In Austria, vocational guidance mainly targets children, adolescents and their parents.

In Spain the target groups vary depending on the educational level:

- The target groups of Basic Vocational Training Cycles (or FPB) are students who have not completed Compulsory Secondary Education previously;
- The target groups of Intermediate Level Cycles (or FPGM) are young people, over 16 years old, who have completed Spanish compulsory basic education;
- The target group of Higher Level Cycles (or FPGS) are young people who have completed an intermediate cycle or baccalaureate, usually pursuing a specialisation in a specific professional family.

In some countries, like Austria and Portugal, vocational guidance is often based on academic achievements, which can lead to a demarcation of the good students from the not-so-good ones. In case this happens, the good ones are advised to continue to the upper levels while the others are advised not to do so.

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For those whose play the role of vocational guidance practitioners, whether a psychologist or a teacher, there is a number of challenges/difficulties that they may face during the process:

- The practitioners need to have the right qualifications;
- Use of digital learning offerings;
- Difficulty of matching skills;
- Lack of transparency and the overflow of information;
- Imparting necessary knowledge and skills to adolescents and young adults who will only be in the general education system for a limited time;
- Deal with migration and multiculturalism;
- Deal with some disturbances in social spheres of life and work that can increase the pressure on counsellors and on clients;
- The guidance of psychologically stressed or ill people;
- Vocational guidance specifically for refugees;
- Diversity in career choice skills among young people;

2.3. Vocational guidance: national definition and policies

In some countries that form the consortium of the "Escape2Stay" project, there are clear common understandings of vocational guidance and orientation which then are reflected in the implemented practices.

The common understanding in Austria and in Germany is that the guidance process is something lifelong and that it converges and coordinates two dimensions of an individual: skills, interests, knowledge and desires with the opportunities, needs and requirement of the professional working world.

On the other hand, in Portugal, although there is a common understanding that vocational education was innovative when it first appeared, there is still a lot of negativity towards VET education in general, mainly from directors and teachers of other types of institutions.

Regarding the implementation of vocational guidance guidelines, there is the case of national policies and how these can be influential. A national policy on vocational guidance is implemented with the intention of promoting it, safeguarding the best interests and needs of the students.

In Portugal, the policies face a fixed set of challenges which include the impendence of early abandonment from education, improving tutor support to learners and offering initial and continuing VET provision in line with labour market requirements. The Operational Programme for Human Capital is a Portuguese programme that gives incentives like scholarships and allowances to potential students with low income and it is one of the results of Portugal 2020, a partnership between Portugal and the European Commission.

In Spain, a plan for the modernisation of VET has been recently presented and it includes a section addressing the importance of vocational guidance and lists a number of points that will be worked on in the country over the coming years . Also, there is a law (Spanish Organic Law 2/2006 on Education) stating that the educational and vocational guidance is necessary to achieve a personalized training that educates them on knowledge, skills and value.

The Federal Government and the Länder (Federal states with sovereignty in education) in Germany carry the responsibility of the measures regarding vocational and study orientation, and they typically include competency assessments, internships (of 2 to 3 weeks) each school year and specific lessons on career choice and application procedures. Apart from that there are also other options students in Germany could consider and places they could resort to in order to get vocational guidance: training companies, Federal Employment Agency, providers of youth vocational assistance (e.g. Caritas).

In Austria's federal province of Styria, there is a regional framework titled "Styrian Strategy for Educational and Vocational Guidance (BBO Strategy)", which is a framework that touches on the development processes of vocational guidance and is made up of measures that focus on points such as assurance of quality, guidance in all phases of life and monitoring. At a national level, for the school sector, the Austrian Federal Ministry of Education, Science and Research has instituted guiding principles that promote measures for educational and vocational orientation in schools.

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2.4. Future perspectives of vocational education and training in European education systems

The future of apprenticeships depends on the role and value that society in general attaches to vocational education and training in the future and the role of apprenticeships in comparison to other forms of work-based learning.

One of the main challenges that VET is facing in the near future is the ever-expanding digitalization of our world, and, subsequently, of several careers, and topics such as Artificial Intelligence (AI), automation and data that are more present in the current discourse.

With that in mind, it is important that VET provider prepare their students for this scenario and equip them with the most recent online tools and methodologies, so they can develop skills in these areas and, therefore, would be comfortable navigating in a job market that is becoming more and more digitalized. And if that was not already understood as a primary necessity, the COVID-19 pandemic showed us how important it is to have an online presence of a certain business, or how essential it is for a citizen to have a firm grasp of these concepts.

In a report titled "Vocational education and training in Europe, 1995-2035: Scenarios for European vocational education and training in the 21st century", CEDEFOP (European Centre for the Development of Vocational Training) specifies the three future trends in VET up until 2035:

- Increase of VET at higher levels;
- Increase of work-based elements in curricula;
- Enhancing responsiveness to the labour market needs.

The respondents to the questionnaires posed by CEDEFOP on average think that there are two equally possible future scenarios concerning higher VET: it can be a sector parallel to the sector of regular higher education, or it can be part of the sector (this option was preferred by those who are employed at universities).
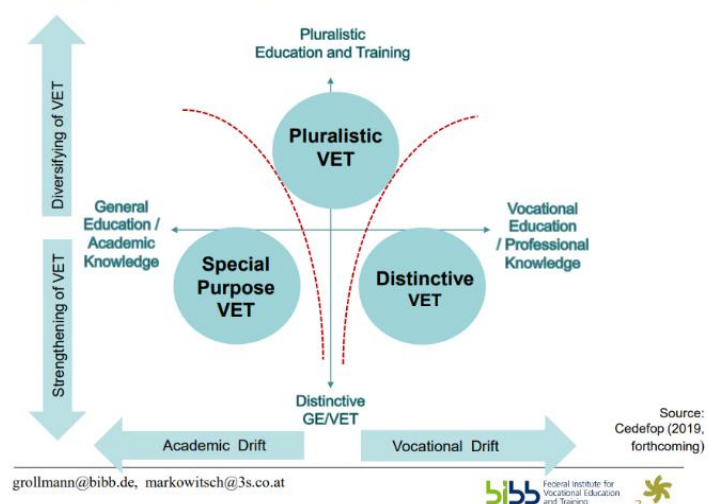
Source: https://www.cedefop.europa.eu/files/the_future_of_apprenticeships_in_europe_three_scenarios_-_grollmann_markowitsch.pdf

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The respondents to the surveys created by CEDEFOP also pointed out an essential factor that concerns the labour market. It is believed that the digital landscape will continue to move at a fast pace, so this means that VET institutions and practitioners will have to attend to the needs of the labour market more intensely. This could result in a more close relationship between the job market and the various VET institutions and their students, who can, through this mechanism, improve their skillset with better and more thorough feedback.

In the proposal for a [Council Recommendation on vocational education and training](#) the Commission proposing to make VET future-proof:

What is the Commission proposing to make VET future-proof?		
A more learner-centred system, giving students flexibility in when and how they study, linking up different learning systems	Increase the resilience and digital readiness of VET institutions and trainers	A mor inclusive approach, removing any barriers to accessibility
Increase mobility of students to make VET programme across the EU more attractive	More on-the-job learning opportunities, particularly through apprenticeships	Make sure that VET curricula correspond to the needs of the green and digital economy
#EUSkillsAgenda		

The overall objective should be to modernise the EU's VET policy to meet the large upskilling and reskilling needs driven by the common ambition to be fit for the challenges of the 21st century, in particular to support the recovery from the COVID-19 pandemic and contribute to building a more sustainable, fair and resilient European Union.

The economic recovery from the COVID-19 crisis offers an opportunity to accelerate reforms in VET and strengthen its resilience, notably by digitising learning offers and methods and agile adaptation to changing labour market needs.

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Flexibility and opportunities to progress within education and training sectors and between them are key elements of future-fit VET systems. Furthermore, ensuring that VET programmes are personalised and learner centred, is essential for ensuring a strong engagement of the learners and attractiveness of VET pathways leading to increased employability. This includes paying attention to the need to ensure access to digital tools and technologies for every learner, teacher and trainer, as well as appropriate guidance measures.

The "V" in VET is also for value - VET provides great value and real benefits to young learners, adult learners and their employers. Statistics from Eurostat show that vocational training is becoming a more popular form of education by the year, with 49.3% of upper secondary students in Europe participating in vocational training in 2016.

EUROPEAN VOCATIONAL SKILLS WEEK

"VET is a first choice, not a plan B."

– Marianne Thyssen, Former European Commissioner

#DiscoverYourTalent

European Commission

Source: https://ec.europa.eu/social/vocational-skills-week/v-vet-also-value_en

Promoting European vocational education and training as a global reference for skills development, including by supporting internationalisation of vocational education and training systems in cooperation with the ETF, skills competitions and communication campaigns to raise the attractiveness and image of VET and providing user-friendly access to information about vocational education and training and related career opportunities, building and further developing the Europass features;

Source: Proposal for a COUNCIL RECOMMENDATION on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience Council Recommendation on vocational education and training

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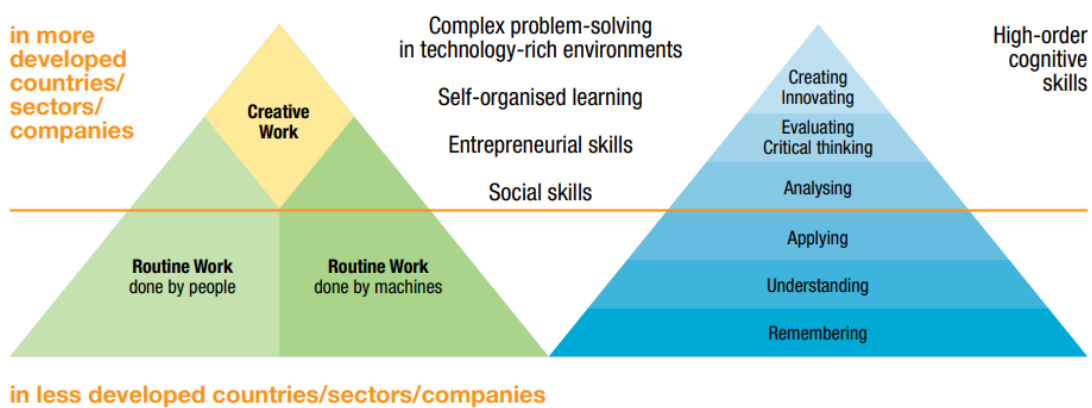of the European Union

2.4.1. Changes in the job market

Jobs, labour markets and economies are rapidly changing: globalisation, technology, digitalization, green deal, COVID-19 and a growing services sector are symptoms. Some jobs are at risk of being lost to machines. Others are being transformed and new ones are being created. As a result, the skills we need are also changing. At the same time, new forms of employment are on the rise.

Technology can replace workers in routine tasks that are easy to automate and complement workers in more cognitively demanding tasks that require creativity and problem solving. To successfully navigate the transition to a digital world of work and thrive in it – workers need not only digital skills but also a broad mix of skills, including cognitive and socio-emotional skills. In technology-related occupations, advanced digital skills are necessary.(OECD Skills Outlook 2019)

Companies must upskill/reskill their employees to help them adapt to new demands, so VET is a big challenge for the future. More complex and longer-term training systems will be needed to keep up with digitalisation and the resulting changes: Lifelong learning is the only way to constantly adapt to new, disruptive systems without leaving anyone behind.

It particularly supports the engagement in creative endeavours and welcomes open-mindedness and high engagement. Applicants, who can show that they are willing to approach the opportunities and challenges that such a learning culture entails, are the winners of the run for a placement.

Figure 4.1. **Future skills that correspond to dominant labour market work tasks**

Source: Euler, 2017.

https://www.cedefop.europa.eu/files/3087_en.pdf

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Social media manager, Airbnb host, influencer, SEO specialist, app developer, Uber driver, driverless car engineer, podcast producer and drone operator; these are just some of the jobs that did not exist ten years ago. As a result, the skills we need are also changing. (EU, Joint Research Centre THE CHANGING NATURE OF WORK AND SKILLS IN THE DIGITAL AGE)

Concentrating on the period between 2021 and 2030, CEDEFOP presents us with an extensive estimation of the perspectives of future job openings, on various levels. Their analysis is very thorough, so we will name a selective number of their findings here.

Across all 27 members of the European Union, it is possible to observe great variations in the number of job openings (the numbers are absolute). Germany (19,856,292), France (11,541,952), Italy (10,593,380) and Spain (9,248,887) are the countries who will see a bigger total. On the other side of the spectrum, countries like Malta (46,563), Luxembourg (242,005), Estonia (255,999), Cyprus (278,337), Latvia (357,555) and Lithuania (453,748), will have less new openings.

Concerning all 27 members of the EU, the top 5 jobs that will be more represented are:

1. Business and administration associate professionals (6,841,908);
2. Sales workers (5,354,938);
3. Personal service workers (4,391,211);
4. Teaching professionals (4,321,523);
5. Cleaners and helpers (4,284,916).

The jobs that will see a minor increase are:

1. Street and related sales and service workers (49,032);
2. Market-oriented skill forestry, fishery and hunting workers (91,649);
3. Handicraft and printing workers (346,567);
4. Other clerical support workers (348,228);
5. Agricultural, forestry and fishery labourers (518,531).

On the other side of the spectrum, there will be a negative evolution of 77,726 in the sector of subsistence farmers, fishers, hunters and gatherers.

It is increasingly important that, in addition to knowledge, individuals acquire skills and competences that help them to anticipate changes and to become more flexible and resilient. For lows killed workers, in the future, it will be harder to find employment without prior reskilling or upskilling. It is a big challenge for our Vocational and Educational Training System in Europe to train the people in the right way.

Source: EU comission "The changing nature of work"

2.4.2. COVID-19 pandemic and Vocational Education and Training

The COVID-19 pandemic sharply curtailed economic activity and demand for labour, resulting in an estimated 4.4% reduction in total working hours worldwide in the second quarter of 2021, down from 4.8% in the first quarter of 2021 and 8.8% in 2020. The pandemic has brought widespread disruption to labour markets around the world. (International Labour Organization 2021)

The COVID-19 pandemic is also creating major challenges for vocational education and training. A lot of people in the EU have lost their job or experienced significant income loss. Many will need to acquire new skills and move to new jobs in a different sector of economy. More will need to upskill to keep their job in a new work environment.

The COVID-19 pandemic has affected many young people at a critical moment in their lives, disrupting their transition from school or university to work. Evidence from previous crises shows that entering the labour market during a recession reduces longer-term employment probabilities, wages and the prospects for on-the-job skills development.

The COVID-19 pandemic is making it difficult for VET students to complete work-based learning activities. As previous economic recessions have shown, a reduction in economic activity not only affects regular jobs but also apprenticeship places, mostly due to firms trying to cut costs (Brunello, 2009).

Beyond the immediate need to cut costs, evidence from Germany shows that firms also base their decision to offer apprenticeship opportunities on expectations about the future business cycle, especially since contractual training agreements are difficult to be terminated prematurely (Muehlemann, Pfeifer and Witte, 2020[7]).

The current crisis might even bring about a larger reduction in the offer of work-based learning opportunities, including apprenticeships, given the uncertainty regarding possible subsequent waves of the pandemic and ensuing lockdowns, but also in light of the difficulty of organizing training in workplaces that are faced with strict health and safety regulations.

In Germany, the number of apprenticeship contracts concluded dropped by 9.4% in 2020 compared to the previous year (Statistisches Bundesamt, 2021). The effects of the COVID-19 pandemic have also left their mark on the transition from school to vocational training and work.

Students with fairly low levels of school qualifications are particularly affected. Moreover, the cancellation of vocational orientation offers due to the pandemic, e.g. internships in companies, may have an impact on the matching of young people and their enrolment in training in the next school year.

Due to the coronavirus pandemic, alternative forms of vocational orientation are on the rise; many offers cannot take place in the usual form or can only take place to a limited extent. Among other things, this affects personal advice, training fairs, internships, orientation days, and access to vocational information centres. Numerous options are offered here to allow vocational orientation from a distance.

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Social media channels were also used in a meaningful way in vocational orientation, for example by the Youth Employment Agency Berlin, which broadcasts interviews with representatives of companies live on Instagram. Interested young people can send questions in advance, and these are then asked during the interview. During the coronavirus pandemic, the application training focuses on telephone or video-based job interviews.

Likewise, recent evidence from the Centre for Vocational Education in Slovenia show that 22% of last year students in upper-secondary VET programmes had no access to work-based learning in the first half of the school year 2020/21.

OECD's international comparisons consistently show that high-quality vocational education is the cornerstone of effective youth transitions into the labour market and, if anything, the pandemic has revealed how much the jobs for which vocational education and training prepare are the backbone of our economies.

Vocational education and training can play a key role in the recovery from the COVID-19 pandemic, by equipping students with the skills the labour market needs and providing adults with relevant up-skilling and re-skilling opportunities. Responsive and flexible systems of vocational education are crucial to make sure that the offer and content of programmes is relevant and accessible. (OECD 2021)

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3. Escape Rooms

3.1. State of the art regarding Escape Rooms in European countries: general education

In each partner country, in Germany, Austria, Slovenia, Spain and Portugal, there are examples of educational escape rooms being used as a teaching method in order to convey knowledge (in some countries these methods are more used than in others).

Diving deeper into this, we can see that in European countries this process of gamification is implemented at various levels and types of education from primary school all the way to university.

And these games are used in classes that teach subjects such as mathematics, physics, biology, history, geography, languages and nutrition and they pose a series of challenges in way that the students learn the curriculum and develop skills while they play and solve mysteries.

In the following paragraphs, the examples associated with each country are of exemplary character, as there are more application scenarios to be found in each one.

In Spain, the Escape Rooms approach is defined as the 4 Cs: critical, collaborative, creative and communicative thinking. They are implemented in primary and secondary schools, at universities and in the vocational training sector. Resorting to the methodology of learning through play, their purpose is to train soft skills (like teamwork, communication and critical thinking) and hard skills.

There is a difference in the way escape games are implemented in Spain depending on the educational level: in primary schools the focus is to train the aforementioned soft skills, but in universities the games are used to train students in subjects related to their degree.

The regional government of Aragon in north-eastern Spain gave a boost to the implementation of escape games in education by promoting a project that entails the training of teachers in the implementation of this process of gamification in the classroom.

In Austria there are cases of teachers teaching students who are about to enter university who use escape games as a method of teambuilding or to inspire them to combine skills and knowledge in order to solve puzzles.

Due to an increase of the recognition of their potential there has been a recent surge in the implementation of escape games across the various educational sectors in Germany and there are some universities that already incorporate this methodology in the learning processes of their students.

In Germany we have the case of Ruhr University in Bochum that has an Escape room serving as a research and learning laboratory for entrepreneurship education. In the Technische Universität Braunschweig there is a Math Puzzles Room where students are locked and have 60 minutes to solve puzzles related to algebra.

In Slovenia and in Portugal escape games are mostly used for entertainment purposes. Nevertheless, some schools in these two countries implement this gamification process. In the case of Slovenia escape games are more implemented in primary schools with the intent of making the learning process more fun (e.g. math).

In the Portuguese educational sector escape games are more used in the 1st Cycle of Basic Education (CBE) with various objectives, from teaching the English language in a way that escapes from the more traditional teaching methods still present in the 21st century to training the students' behaviour inside and outside of the classroom.

3.2. The implementation of Escape Rooms in vocational orientation

In the countries that form the consortium we can see some cases of Escape Rooms being implemented in the VET sector.

Germany is a country where the process of gamification which includes escape games, is being continuously conducted by schools and companies for career orientation.

One example from Austria is the independent company "Game Institute", who offer their escape room methodology for educational purposes and with the objective of preparing VET students for a final exam. Here, the challenge is for the students, based on their learning experience to create and monitor a game that will then be solved by their teachers/mentors.

A school in the Portuguese VET education system resorts to Escape Rooms in order to teach the 11th graders the work of one of the most famous Portuguese writers, Camilo Castelo Branco, which students from that year have to study; this a practice held with the intention of motivating the students to discover more about the author.

In Slovenia in the School Centre Velenje there was a paper detailing the experience of a group of students that had created an escape room that promoted the IT program of the school and that could inform visitors. Some students who accepted the challenge became more effective during classes afterwards.

In Spain this gamification process has been adopted in some schools so students become more aware of their soft and hard skills. In schools of two Spanish cities, Almeria and Murcia, escape games are used to motive the two different groups in a classroom: in the case of the former, Escape Rooms are directed towards the students, and in the case of the latter, this process is aimed at the teaching staff to introduce them to new educational practices.

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3.3. Elements of VET and the working world to be shown in an escape game

Contrary to what a lot of people say, an escape game can be much more than a simple game just for pure entertainment. Instead of just focusing on providing fun to the participants, it can also help them train skills that are important in today's society and professional working world.

Aligned with that, VET education is an educational pathway that has the main mission of preparing the students for the professional working world and it results in positive employment rates.

So, VET courses have a lot of practice, and that hands-on approach can be transferred to the game. If the consortium wishes to train the participants in mechatronics engineering for example, it could design tasks that resort to virtual reality and simple circuits.

When we talk about skills that can be promoted during an escape game there is a distinction that needs to be made between hard skills and soft skills. The former can be trained during an escape game when participants are, for example, working with a machine that can be found in reality like a computer – this is something that emphasizes the motto "learning by doing".

But the latter are also important, if not more: soft skills are recognized as the most important ones to acquire if one wants to enter the job market. The following is a list of soft skills that can be trained in an escape game and that are important for the professional working world:

- Communication (in an escape game participants need to be able to communicate their ideas clearly in order to advance the narrative;
- Emotional management (some potential VET students are prone to quit easily because they are for example frustrated with something - an escape game can help them overcome that through achievements);
- Fear of failing;
- Dynamization (very important especially in the IT sector);
- Teamwork (this is essential because some students are intolerant towards other people's ways of doing things, but a gamification process such as an escape game can help them work with other people in order to reach a solution);
- Leadership;
- Critical thinking;
- Out-of-the-box thinking (the reason some businesses thrive during difficult times like the COVID-19 pandemic);
- Tolerance (without it, conflicts may arise);
- Organization;
- Planning;
- Writing skills (this can be trained when creating a narrative)

The main target group of the "Escape to stay" project was born surrounded by technology and quick ways of communication. Therefore, challenges related to technical and IT professions are very pertinent. Young people are so accustomed to using their phones that they would not feel strange encountering a challenge that requires them to read a QR code, for example.

One big reason to invest in the promotion of technical and IT professions in escape rooms is the fact that careers in these areas are less prone to suffer a regression during a big economic crisis, something that was observed during the Covid-19 pandemic. Not only that, careers in this area also help solve upcoming problems and challenges that mankind could be facing.

3.4. Elements of an escape game

3.4.1. Story, challenges and setting

When someone wants to create an escape game there are two really important courses of action that should be followed in order to reach the final result. One is to think of a really good story with the objective of grabbing the participants' attention and the other is to think about the activities and riddles that can be included in the game which then becomes complete and cohesive.

In the end, these two aspects of the escape game have to be thought of with the target audience in mind, meaning that we should not create a unique narrative/game and a unique set of enigmas for both adults and young people. In the end, both narrative and challenges are connected by a third important aspect of the room, which is the setting. With all this in mind, the consortium of the Escape2Stay project also has to state beforehand the topics and/or VET professions that they would like to see promoted.

For an escape game to function well and to have a lasting effect on its participants, the creators should think of a really good and interesting story, something that will also later justify the challenges encountered during gameplay. If there is a good context to the game that the participants are about to play, there is a higher chance they will feel immersed in it.

Story ideas can vary greatly, but there are general themes common to the vast majority:

- Stories where the characters are in danger (e.g. agents have to save humanity from being wiped out, a group of scientists has to find a cure for a virus and a bomb has to be defused);
- Stories that happen in their world (e.g. solve a heist or a murder, free a person) or about things they are familiar with (e.g. TV series and movies);
- And stories that have characters that are completely different from their reality (e.g. narratives of the sci-fi type that contain a certain supernatural element like aliens).

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The following are some of the most common settings for an escape game which the consortium could draw inspiration from:

- Prisons;
- Laboratories;
- Dungeons;
- Criminal scene;
- Time travel (past or future).

The creation of the narrative and the challenges should be made having in mind the space of a typical classroom. Since the focus of the consortium of the "Escape to stay" project is on designing a mobile game to be played in a classroom, it is a good practice to think of an idea that could work in every classroom. If the partners want to think of more complex ideas, like a game set in a dungeon or a space station, they should know that in order to design a visually immersive experience there will be more costs spent on props and on the setting.

There is one important aspect to have in mind if the story being designed is based upon existing narratives (TV Shows, movies, videogames, etc.): since the participants are most likely familiar with the narrative there will be expectations that the creators of the escape room will have to meet. Games based on completely new narratives, although harder to design, do not have that inherent challenge.

The other important thing to think of when designing an escape game is the riddles and activities which will complement and reinforce the story. The creator has to design coherent and smart puzzles with the aim of motivating the participants to finish the game and if the challenges are not logical there is a good chance the participants will lose interest.

The first thing creators should have in mind when designing puzzles/riddles is that "more puzzles" is not a direct synonym of "better quality". This is to say that it is preferable to have fewer puzzles with good quality than a lot of puzzles that are not logical and intrinsically connected to the narrative.

As is the case with the narrative choices there is a good variety of types of challenges that creators can add to their games, but there are aspects that all challenges should focus on like memory, numbers and/or logic, logical thinking, linguistics, among others. With that said, all challenges should be complementary to the narrative, coherent and well-connected and not merely focused on idle subjects.

And in regard to the form of the puzzles, there are two ways the creators could go about having in mind the target audience: traditional puzzles and more modern ones that make use of technology. In the first case there could be, among other items and materials, jigsaw puzzles, boxes/safes locked with keys and/or padlocks and photographs. In the second case the creators should resort to materials that are increasingly being used in escape rooms like computers, tablets, smartphones, QR codes and messages hidden with invisible ink that need an UV lamp to be deciphered.

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The challenges should not be neither too hard, because there is the risk of the players feeling helpless nor too easy because that way there would not be a great sense of reward after completion.

They should not require a special education and if the game requires specific information that the players do not possess, the room/setting itself needs to help them find it.

Examples of challenges and activities to be implemented:

- Recognize numerical and colour patterns;
- Decipher riddles and enigmas;
- Find a hidden object or code;
- Find words to fill in the blanks of a text;
- Math exercises;
- Use a QR code to find another object;
- Find the various pieces of a puzzle to see the solution to something;
- Resort to online platforms in order to advance in the narrative;
- Find words scattered around the room with an UV light;
- Find the key to a lock;
- Use an object in a different way;
- Use mirrors to find an answer in an image.

With the narrative and materials in mind the game creators should focus on a third aspect that will connect everything: the setting. In order to design a more immersive experience a great deal of attention should be directed towards the room ambient and decoration. If the narrative is set in a dungeon the room needs to be darker, but if it is set in a laboratory it needs more light.

In addition, the props are also an essential part of an immersive experience as they add value to the overall theme of the game and if the creators have the possibility of getting them, all the better.

3.4.2. Duration, number of players and their roles

The duration of an escape games depends on a variety of factors - namely the number of participants, the number of tasks they have to perform and the intensity of the game experience. Nevertheless, the duration of the game should be ideally from half an hour to one hour. Apart from that it also should be considered an extra time (no more than ten minutes) to introduce the players to the game and give them a background story – this introductory phase aims at motivating and building up participants' expectations and in this part there also could be a small video to intensify that.

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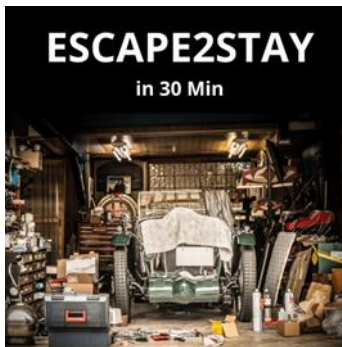
If the duration of the escape game is short (e.g. 30 minutes) it should not cover a lot of subjects and pose a lot of challenges. On the other hand, if the room lasts for one hour the creators can include more puzzles, but it also affects the number of people that can play it in a day.

The number of people playing an escape game also depends on other factors like the size of the room where the game is being played, the difficulty of the challenge and its aims.

If the objective is for the participants to have more fun or if the game is played in the context of a teambuilding event, a group between six and ten people works well. But if the challenge is designed to be resolved the fastest way possible the group should have between three and six people.

There are three things that will be immediately affected by the number of players in a game. The first is the number of tasks that need to be carried out (in case the number of players is set before the tasks). The second one is in regard to the game master and his/her ability to entertain and guide all the participants for the duration of the whole game (e.g. the process of giving hints). The last thing is the dispersion of the participants: the more participants there are the more chances for them to for subgroups around the room.

During the experience of an escape game there is a role whose functions are always clear: the game master. This role is always taken on by someone who is not playing the game, but ultimately is responsible for it and its development. The main functions of a game master are:

- Oversee the game;
- Give hints (if requested by the participants, or if the game master sees that they are stuck);
- Not interfere too much in the gameplay.

Usually, a game master is not present in the room. Instead, he/she is watching from the outside, mainly through cameras. In case he/she needs to give a hint, the communication can be made by the camera or a walkie-talkie. Although this option is not as frequent, there is always the possibility that the game master is part of the game and becomes a character in the narrative, thus he/she is inside the playing area.

Since the consortium of the "Escape2stay" project will be creating a mobile game, maybe the second option is more feasible, because that way is does not require another room for the game master to be there or the installation of cameras. With that being said, it is worth noting that the practice of the game master becoming a character should not be a fixed one for all games.

The assignment of roles of the participants of an escape game is a sensitive topic. On the one hand, there are defined roles that could be attributed to the players but on the other hand, the act of attributing a role before the start of a game runs the risk of putting a definitive label on that participant leaving them thinking that they should only do those specific tasks.

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If the attribution of roles was to be done, there are three things that need to be considered.

- The first is that that process needs to be fluid and dynamic, meaning that a player can start with a specific role, but as the players advance further in the game they can change roles if there is an opportunity for it.
- The second point to be considered is that the attribution of roles should be dependent on the game/scenario that the players are going to be immersed in and the challenges they are going to encounter.
- The third aspect to have in mind is the player's feedback concerning the roles after they are done playing; listening to them might be fundamental to the project, since the consortium gets to know how comfortable they felt in their role(s).

The following are some examples of roles that could be attributed to players in an escape game:

- **Leader**: the player who guides the team throughout the whole game;
- **Reader**: the player who reads the clues out loud to the rest of the team;
- **Mathematician**: the player who is responsible for the mathematical challenges;
- **Thinker**: the player who is responsible for logical and analytical exercises;
- **Collector**: the player who collects all clues as the game moves on;
- **Lock picker**: the player who is responsible for opening all the locks.

When there is a situation of a large group of players (more than six), the act of assigning roles could be helpful, because then there can be a kind of "leader" to whom everybody reports and who has the responsibility of overviewing all riddles/clues and the progress of the game. On the other hand, in smaller groups, roles that are too specific and fixed could be a handicap.

3.4.3. Game modes and decorative elements

There are two options to play an escape game: offline and online.

- The first one is more common and is considered to be the mode that provides a more immersive experience, because it is played on site and it makes the players interact with each other in person, thus allowing them to develop their interpersonal skills (and in the case that it is played in a classroom, it allows the teacher to better control the proceedings).
- The second one is mostly played on a computer or tablet, but it also lends some aspects to the offline mode: there are offline games that require players to go to a computer or to use a tablet in order to solve a puzzle.

There are some cases when the online mode of an escape game can be really advantageous, namely when the participants are on different geographical locations. But an offline game can also be played by just one person, or even by two people that are in the same space, and in this case, they can be playing on different computers and communicating face to face. The target group of the "Escape to stay" project is young people, a demographic that is not strange to online gaming, so, because of that it could be a viable option.

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In case the option is the offline variant the consortium needs to start thinking about the decorative materials that are going to be displayed around the room and that will help provide a more immersive experience and enhance the learning component. Moreover, the decorative elements of the challenges are also dependent on the story of the game.

The following are examples of materials related to the narrative that could be scattered around the room:

- A game focusing on mechanical professions: in this case, it would be ideal to display objects like screws and gears;
- A game focusing on medical/scientific professions: here, it would be pertinent to add objects that are typically found in laboratories (e.g. test tubes, white robes);
- A game about detectives: for a game like this, typical objects like a magnifying glass could be added;
- A game set in a dungeon: here, a darker ambient and some chains should set the right mood.

Other typical, more common materials could be:

- Mirrors;
- Maps;
- Safes;
- Postcards;
- Pictures;
- Locks and keys;
- Timers

3.4.4. A game inside a box

The main focus of the "Escape2stay" project will be the creation of portable games that can, ideally, fit inside a box/suitcase to be carried around, and this is something that is very feasible.

The box needs to contain everything necessary, like all the tools, props and other necessary elements. And in order to ease the task of the equipment selection, the consortium of the project is thinking first about the story and then the adequate the necessary materials, so those could be in synchrony with the scenario.

All 5 ESCAPE2STAY Games are in 1 Box :

1. Dinner for one royal
2. Think as fast as lightning
3. Open the door please?
4. Rescue mission
5. The governor´s paper

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There are some important aspects that need to be considered when creating a portable game:

- All the necessary elements have to be included in just one box;
- The materials need to have a high level of reusability, since the intention is to use them many times which reduces costs;
- Only one person should be able to carry the box/suitcase;
- If there is room left, objects acting as false clues could also be added, increasing the difficulty of the game;
- The game should not be too easy to play;
- When idealizing the game, the limits of the setting should always be considered (in the case of the "Escape2stay" project, the consortium should have in mind the limits of a classroom).

As already mentioned, the selection of materials is dependent on the narrative, but there is a selection of objects that the "Escape2stay" consortium should think of implementing, independently from the chosen narrative:

- "Hint cards": these cards are in possession of the game master and contain hints that are given when requested;
- "Reflection cards": these cards serve to collect the participants' feedback after the game on the trained and demonstrated knowledge/competences during gameplay.

On the other hand, there is a group of objects that are almost common to all escape rooms and could be included in a portable box because they are easy to carry:

- Pen and paper;
- Puzzles;
- Locks;
- Wires;
- Disguises (e.g. hats, coats);
- QR codes;
- Old mobile phone;
- UV light;
- Invisible ink;
- Flashlights;
- Little boxes;
- Puzzles and riddles;
- Paperclips.

Another important aspect that needs serious consideration is the place where the activities could be held. The following is a list of settings that would fit the scope of the "Escape2Stay" project:

- Vocational orientation events in schools;
- Open Day in training companies;
- Other types of events in training companies;
- Training company fairs;

3.4.5. The helping material to set up a game

If vocational guidance practitioners, training centers or VET schools want to implement their own games, it is essential to have materials that can help setting up the game. The most essential one that should be present in all games is the written manual. It should be very detailed and easy to read so that people find everything, from general instructions to the step-by-step explanations of how the game should proceed (and in that case, how the game master should observe the development).

The following are other sections that the manual could cover in order to be more complete:

- A description of the original state of the box/suitcase, so it is easier for the people that are setting up the room to know how it was originally, and then they can put everything back the way it was for the next game;
- A section similar to a FAQ (Frequently Asked questions), where there would also be an explanation of potential challenges in setting up the game;
- An indication of a debriefing phase with a selection of questions that incite the participants to talk about the knowledge and skills they gained during gameplay;
- In-depth description of the riddles and materials;
- A section that details the role of the game master and what he/she is allowed to do during the gameplay.

Apart from the physical manual there are other visual options that could act as complements. A video showing the whole process or just the most important parts of the set up and pictures highlighting the several steps would add extra value (although, the video is not strictly necessary).

3.4.6. Risk management: measures to be considered

The risk management measures implemented during the escape game aim at resolving any difficult situation that may arise and protecting every intervenient (players and game master) from every possible danger. This section touches on some of those measures.

There are objects that could be harmful if not selected and/or displayed properly, so these need special attention, like scissors, batteries and cables.

Other essential measures that need to be taken care of to assure a safe game is the availability of a first aid kit and fire protection materials.

The other type of conflict that may arise stems from the aforementioned attribution of roles to the participants, from lack of coordination or from the fact that the players cannot agree upon which way to go about the game. In the case that he/she sees that the participants' actions call for an intervention, the game master can act as an intermediary figure who tries to calm everyone down.

4. Final Words

One of the challenges when the consortium of the "Escape2Stay" project began this initial phase was to show that Escape Rooms can, indeed, be a useful educational tool to teach a great variety of things, mainly the class subject, the soft skills and the hard ones (also known as technical).

After going through the information that was collected from every desk research and focus groups session, we can conclude that our initial assumption was correct and that this process of gamification has a great number of benefits for the students who can retrieve a lot of valuable things from the experience.

We can also conclude that VET education is an already well-established system in the countries analyzed and that form the consortium.
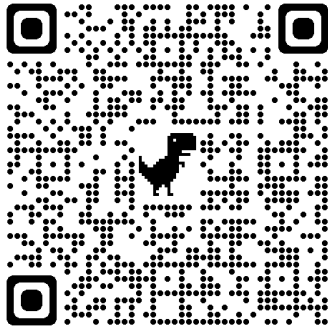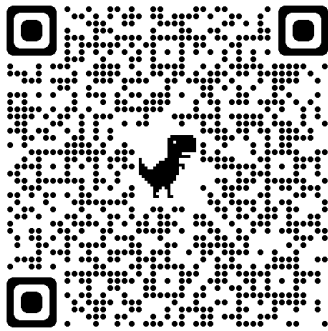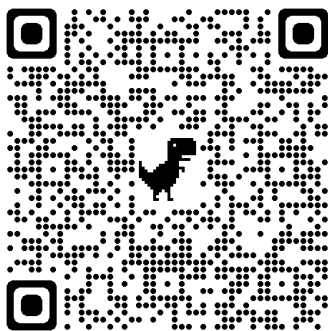
As it is normal when comparing different realities, we can see that VET has different particularities depending on the country, but there is a major aspect that is transversal to all cases, and that is the fact that VET has a good amount of benefits like a thorough preparation of students for the job market and their rapid insertion in it.

All in all, VET education equips the students with the necessary knowledge and skills to be able to face the real professional working world.
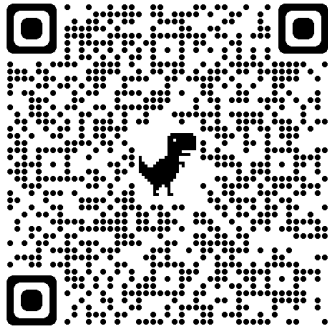
After analyzing the two different components of the project separately, we can establish a link between them. VET education is characterized by the work-based learning methodology, which makes it possible for students to develop their theoretical and technical skills at the same time, providing them with the experience of a real-life context.

In its turn, an Escape Room is a game that can take the more technical and practical sides of learning and incorporate them in a logical and pedagogical game very well while also focusing on the development of soft skills. So, it becomes not just a game but also a tool to foster the students' personal and professional growth.
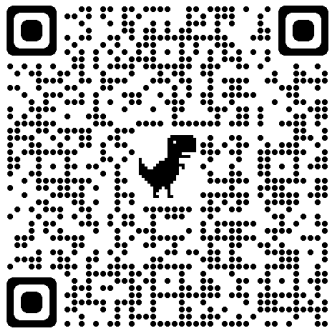

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Annex:

1. National Report Austria

2. National Report Germany

3. [National Report Slovenia](#)

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4. [National Report Spain](#)

5. [National Report Portugal](#)

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