Refining HE Apprenticeships with Enterprises in Europe

TRANSVERSAL COMPARISON OF THE COLLECTED APPRENT CASE STUDIES AND FEEDBACK FROM THE FOCUS DISCUSSION GROUPS

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1. INTRODUCTION

The Refining Higher Education Apprenticeships with Enterprises in Europe (ApprEnt) project intends to bridge the gap between the world of education and business, enhancing partnerships that involve companies, Higher Education Institutions (HEIs) as VET providers, and other relevant stakeholders such as public bodies, representatives of learners and representatives of VET providers, with the ultimate aim of promoting the establishment of work-based learning and especially apprenticeships in higher education.

The ApprEnt project aims to strengthen and expand University Community Engagement activities in cooperation with the regional economy; foster knowledge transfer and experience based learning; maximise peer-learning, transnationally and within each partner country; implement staff development workshops for in-enterprises trainers/supervisors and for HE tutors/trainers, designed to support them in working with apprentices and based on an existing successful model; promote regional pilot projects in close cooperation with enterprises and regional partners; document and compare the different approaches and results as well as share and discuss roadmaps at national and European conferences with experts of Vocational Training, Professional and Higher Education and other umbrella organisations.

1.1 Methodology

In order to achieve the shared objectives and goals in the ApprEnt project the partners collected interesting practice cases from all participating countries and other European countries. The objective of the collection of interesting practices (higher education institutions) and case studies (businesses) was to share experiences on various practices and programmes within the field of higher education apprenticeships in Europe and this way come up with solutions to challenges relating to the organisation of such programmes across Europe.

A standardised template for the case collection was drafted including both standardised set of questions and free format description of the good practice, objectives, teaching and learning methods, supervision and guidance and mentoring, selection criteria, target groups, level and type of enterprise cooperation. Furthermore, the cases were described from the point of view of their strengths, weaknesses, student and stakeholder feedback and main challenges faced in the programme planning and implementation.

Altogether 33 interesting practice cases from nine European countries were collected, which were also the object of a second examination round to collect some further insights on the identified good practices. The geographical representation of the collected good practice cases by country was rather good: 4 Finnish cases, 5 French cases; 4 Estonian cases; 7 Portuguese

cases; 2 Italian cases, 6 Spanish cases, 3 Austrian cases, one case from the UK and one case from Poland. (See Table 1).

Table 1: List of case studies collected and identifying codes[1]

Partner, country	Case Study from	Code
eucen, Belgium	University of Chester	P01.1UK
	Université de Lille, Formation continue et alternance	P01.2FR
	Polish Ministry of Sc and HE - Department for innovation & development	P01.3PL
	University of Deusto	P01.4ES
University of Brest, France	Fiiish	P02.1FR
	Université de Bretagne Occidentale	P02.2FR
University of Krems, Austria	University of Applied Sciences FH St. Pölten	P03.1AT
	University of Applied Sciences Campus 02	P03.2AT
Tallinn University, Estonia	Tallinn University	P04.1EE
	Tallinn University of Technology	P04.2EE
University of Aveiro, Portugal	School of Design, Mgmt & Production Tech Northern Aveiro ESAN-UA	P05.1PT
	Águeda School of Tech and Mgmt. – University of Aveiro ESTGA-UA	P05.2PT
	The Internet of Things (IoT) program of UNVE-UINFOC/UA	P05.3PT
	Higher Institute for Accountancy & Administration Aveiro University ISCA-UA	P05.4PT
	Physics and Physics Engineering at UA	P05.5PT
University of Turku, Finland	University of Turku	P06.1FI
	University of Turku, TSE Exe	P06.2FI
University of Catania, Italy	University of Catania	P07.1IT
	University of Catania	P07.2IT
Universidad Complutense de Madrid, Spain	Universidad Complutense de Madrid	P08.1ES
	Universidad Complutense de Madrid	P08.2ES
Chamber of Commerce Brest, France	Chamber of Commerce Brest	P09.1FR
	Chamber of Commerce Brest	P09.2FR

[1] The code shows the partner who has collected the case on the left, the case study number of the collecting partner and the country where the case study has been collected on the right. Some partners have not produced case studies from their own institutions, but rather found cases elsewhere.

Partner, country	Case Study from	Code
Bottom UP development e.U, Austria	A1 Telekom	P10.1AT
Estonian Chamber of Commerce and Industry, Estonia	Estonian Entrepreneurship University of Applied Sciences (EUAS)	P11.1EE
	Tallinn Health care college	P11.2EE
Associação Industrial de Aveiro, Portugal	AIDA - Industrial Association of the District of Aveiro	P12.1PT
	AIDA - Industrial Association of the District of Aveiro	P12.2PT
Federation of Finnish Enterprises, Southwest Region, Finland	Anders Inno	P13.1FI
	Turku University of Applied Sciences	P13.2FI
Asociación de Empresarios del Henares, Spain	Grupo SGS España	P15.1ES
Fundación Conocimiento y Desarrollo, Spain	Universitat de Lleida	P16.1ES
	Universitat Autonoma de Barcelona	P16.2ES

The collected interesting practice cases (n=33) represent a good sample of higher education apprenticeship programmes across Europe and constitute the only base of the analysis of the state of the art concerning the HE Apprenticeship systems done here. The ApprEnt consortium is fully aware that the mapped interesting practice cases do not represent the whole European landscape and, hence, that the analysis done based on the collected materials can only be considered as indicative.

Keeping the possible flaws and data gaps in mind, this transversal analysis tries nevertheless to draw a comprehensive picture about the current status of the Apprenticeship practices in Europe and, based on that, draws some general conclusions to support future development of such initiatives and programmes in different European countries.

The distribution of collected cases by partner is shown in Table 2.

Table 2: Distribution of collected case studies by partner organisation

		Number cases				
		1	2	3	4	5
P1 - eucen	BE	■	■	■	■	
P2 - UBO	FR	■	■			
P3 - DUK	AT	■	■			
P4 - TU	EE	■	■			
P5 - UA	PT	■	■	■	■	■
P6 - UTU	FI	■	■			
P7 - UNICT	IT	■	■			
P8 - UCM	ES	■	■			
P9 - ChCB	FR	■	■			
P10 - Senate	AT	■				
P11 - Koda	EE	■	■			
P12 - Aida	PT	■	■			
P13 - FFE	FI	■	■			
P14 - CCC	IT					
P15 - AEDHE	ES	■				
P16 - FBG	ES	■	■			

1.2 Key Concepts

In the study conducted within the ApprEnt project to collect interesting practice cases, the concept of Higher Education Apprenticeship had first to be defined. From the point of view of University-Business collaboration, HE Apprenticeship is understood as programmes that have a minimum of four characteristics out of the six listed below:

1. Learning alternates between a workplace and an educational or training institution

2. The programme has a strong tutoring/mentoring aspect both at work and in the HEI, where the employer and higher education institution in collaboration assume responsibility for providing instruction and meaningful learning opportunities at the workplace with a skilled person, in order to offer to the learner, the opportunity to acquire the knowledge, skills and competences needed in the profession.

3. The programme is part of formal and/or continuing education and training

4. On successful completion of the programme, learners acquire a qualification or a part of a qualification and receive an officially recognized certificate.

5. Apprenticeships are based on a contract or formal agreement between employer and learner but, sometimes, can be based on a contract or formal agreement with the HEI.

6. Apprentices are contractually linked to an employee and to a HEI and receive remuneration in the form of wage, allowance or similar for their work.

In addition to the characteristics for the Higher Education Apprenticeships defined above this transversal analysis takes into consideration four parameters relevant to the project: relevance, transferability, impact and potential for standardization. All showcased Interesting Practices should take into consideration the following four parameters:

1. Relevance: The interesting practice is directly connected to a real apprenticeship (or similar) programme.

2. Transferability: The interesting practice case is transferable to existing or future HE apprenticeship programmes at national level and /or in partner countries.

3. Impact: The interesting practice has an impact on the strategic functions of the university, e.g. on results, changes in processes, on the university-business collaboration, on staff, on the students, etc.

4. Standardisation: The interesting practice may be decontextualized and standardized partially or as a whole concept.

On national level, attempts to standardise various aspects of higher education have become more prominent in recent decades – regarding issues such as what constitutes a qualification, national learning plans and curricula, professional certification of teachers, requirements for obtaining professor status, and so forth. To a large extent these trends can be linked to a more fundamental shift in educational governance, where standards have increasingly become a means to assure 'measurability'. Focus on comparability, compatibility and measurement have increasingly entered the debate in European higher education policy as well. Having in mind some of the historical resistance towards European coordination in higher education, one could argue that a number of these developments can be seen as rather puzzling. Perhaps one of the most significant examples of a standardization processes is the current wave of introducing National Qualifications Frameworks (NQFs) in Europe, largely driven by the EU-led European Qualifications Framework (EQF).

Based on a short bibliography review in the ApprEnt project, we can say that interesting practice cases with high potential for standardization on a European level need to explicitly answer to the following three questions:

- Which process elements are to be standardised (object of standardisation)?
- To what degree should the standardisation of these elements be carried out (degree of standardisation)?
- At which school level or business units should the standardisation be implemented (range of standardisation)?

Furthermore, the characteristics of an interesting practice sample with high potential for standardisation should include the following attributes:

- Personalization of studies in order to allow diversity and promoting inclusion.
- Flexible Curriculum design that allows for adapting to the individual needs, both in core and transversal learning areas.
- Methodologies and strategies of assessments adaptable to diversity of learners.
- Standardised expectations and /or learning outcomes, as they are useful in allowing the definition of the training level based in similar learning outcomes.
- Standardised data formats and interoperability between school and company taking good care of individual data protection.
- Digital tools and platforms are used to enhance learning and communication.
- Quality assurance procedures – measurable indicators.

Descriptive statistics on the cases are presented in section 3 of this report (Descriptive statistics of the collected cases).

2. THEORETICAL FRAMEWORK

Work-readiness has become an important aspect in higher education (Jackson 2018, 23). Graduates are expected to function effectively upon entering the labour market and across a range of working environments, and continue to do so despite of the rapid change in the environment. This challenge for learners for being work-ready proposes an equal challenge for educators in higher education. Learning processes and environments should go hand-in-hand with the industry. Therefore, work-integrated learning has become important across higher education institutions in Europe and globally. To name a few, apprenticeships and internships are models where learning alternates between the learning environments of the educational institutions and those of the working place. In such model more emphasis is cast on experiential learning than classroom learning.

In this report the qualitative analysis of apprenticeship cases is based on research reports on work-integrated learning. Core characteristics are apprenticeship and internship prerequisites and how widely they cover the dimensions of Kolb's experiential learning theory. Kolb's (1981, 1984) theory, rooted in the works of e.g. Dewey (1938), Lewin (1951), and Piaget (1971), is a holistic theory focusing on the affective, perceptive, cognitive and behavioural dimensions of the learner (Stirling et. al. 2017). In the recommendations chapter we seek to optimize experiential education opportunities by establishing explicit learning activities consistent with each of Kolb's experiential learning mode, including practice, reflection, connecting course work and practical experience and implementing creative ideas in practice.

The analysed apprenticeship cases were examined based on their academic prerequisites, citizenship prerequisites and financial remuneration (see previous chapter). Before the apprenticeship the student needs to finish certain courses before or during enrolment. Citizenship prerequisites means that apprenticeship programs are available for national citizens or international students. Remuneration means the range of compensation offered to students for their participation. Typically, the level of compensation varies between professional disciplines and generic fields of study.

Before embarking further in the description of the theoretical framework, a word of criticism may be brought in to the discussion on work-integrated learning. Does experiential learning always lead into deep learning? Regarding work-integrated learning programs such as internships and apprenticeships, findings from a study carried out in 44 Canadian universities and colleges indicate that internship programs overemphasize the practical aspect of experience at the expense of linking theory and practice (Stirling & al 2017). Based on some Australian studies having only workplace experiences is insufficient for effective student learning; they need to be augmented by teacher interventions (i.e., pedagogic practices) (Jackson 2018, Hardie & al. 2018, Kramer-Simpson 2018). Therefore, it is advised to keep in mind that the idea of these models is

that learning alternates between the university and the world of work, and stakeholders involved are engaged in the learning, teaching and instruction.

In order to facilitate deep learning in work-integrated learning settings, the following four Kolb's experiential learning modes need to be taken into consideration:

1. concrete experience
2. reflective observation
3. abstract conceptualization
4. active experimentation

Concrete experience is the hands-on experience from participating in a new situation. This includes practical hours completed by the student, common apprenticeship or internship tasks and responsibilities and components of the work-integrated learning that make a diverse experience. It is advisable to allocate enough time for professional development and skills acquisition in collaboration, problem solving, decision making, self-reflection and leadership. Diversity in work-based learning experience is important but as important is that apprenticeships or internships are screened and experiences are approved by program supervisors to ensure relevance to the field of study. This may include designing a variety of responsibilities to students such as individual or group work, media relations, event planning, community or stakeholders' relations etc.

Regarding the design of concrete learning experiences for the students, the following case description illustrates the components of the learning experience mentioned above:

> "Students are accompanied throughout the whole process of entering the labour market. The first two semesters are full time-study and include a multi-steps matchmaking-process between students and companies, which are SMEs as well as large companies. Between the 3rd and the 6th semester students are studying Monday to Tuesday and work Wednesday to Friday in the companies. The students typically work part time at the companies, between 15 and 30 hours each week. There are all-in all 35 students in each academic year.
>
> There is a contract between university and student and a work contract between employer and student. The university provides templates for work contracts for companies participating in the dual study program." (P03.2AT)

In this case the distribution of hours is likely to offer diversity of learning experiences. Common student responsibilities are developed during first two semesters. Diversity in student experiences is facilitated by creating student responsibilities that accumulate during the study years.

Reflective observation is the process of taking in an experience and reflecting back on it. It includes both the act of reflecting on one's own hands-on experiences and the experience of

watching others. This may include participation in training sessions, attending meetings, writing reports and journals as well as reflection papers. Examples may also include reflective observations through mentor shadowing or pairing a student with a specific team or area of his or her apprenticeship or internship organization for supervision, training and orientation. (Stirling & al. 2017).

> "The Quality Management course aims to train professionals who, autonomously or under guidance, design, implement and streamline a Quality Management System, proceed with the definition of Quality methodologies and tools, and know how to typify the use of the Management System of. Quality. The strengths of this type of agreement allow students in a training context to have direct contact with companies whenever they deem it necessary and in some way to be followed up by a specialized technician. They can see in practice how the area of quality is managed and implemented." (P12.2PT)

In the case descripted the student is exposed to various forms of reflective observation and participation. The case illustrates the possibility to reflect the experiences of both oneself and of the others.

Abstract conceptualization refers to the ability to take experience and relate it to overarching theory or to create new ideas from it. Based on Kolb this refers to learners who perceive, grasp, or take hold of new information through symbolic representation. This means thinking about, analysing and systematically planning their actions. The model of combining work experience with academic content will affect students' application of general and career-specific skills, and the students'' connection with previous curricular learning, and demonstrations of idea generation.

> "There is a subject called management practice in the study program or business information technology. That subject can be combined with the master's thesis. The idea is that on the second semester the students are planning their final project (master's thesis), which has to be necessary for some enterprise (some kind of engineering solution, start-up or a scientific development). After that they get to lead a bachelor's degree students' team to develop the project for the whole next year. The team will work 2 days per week on the master's student's final project and can also execute their own trainee studies (practical work) ad final project on bachelor's level." (P11.EE2)

The above case describes a learning mode where work experience is in clear connection with previous courses including prerequisite courses and curricular knowledge. Learning objectives include both generalizable professional skill development and career-specific skill development. Abstract conceptualisation is carried through the master's thesis in close connection to needs of the enterprises by systematic planning. In this case internship periods and academic courses have common learning outcomes and objectives and work periods and courses alternates during the study years.

Active experimentation involves applying to practice what has been learned and conceptualised in theory. According to Stirling & al. (2017), practical examples of active experimentation include students' ability to apply new ideas through the generation of research related to the apprenticeship or internship environment or adaptation of innovative practices to emerging needs of the field; apply curricular learning to their work-integrated learning period, including the development and/or implementation of a project (e.g., planning a special event for clients); and apply professional skills throughout the learning process, such as leadership.

> "WBIS offers a combination of experiential and subject discipline based learning so that each informs the other. Students completing subject discipline based modules, for example on Finance, are encouraged to learn reflectively either from direct experience or from workplace mentors. They can also complete modules based around trans-disciplinary workplace projects, integrating formal knowledge to interrogate experience and create practical solutions to workplace problems. All students have a Personal Academic Tutor to guide them throughout the program, subject discipline specialists and workplace mentors. Students complete formal assignments whilst in the workplace using e-learning tools and materials to supplement more traditional resources." (P01.1UK)

The case describes how a student undertakes a project or learning assignment under the combined supervision of host organization and course supervisor to improve a practical development of task recognized in a company or public organization. Student demonstrates learning through development or implementation of a project by taking initiative and adapting to challenges. Active experimentation may also include application of generic skills such as leadership skills into the apprenticeship. Application of new ideas is a crucial part of active experimentation. On an apprenticeship period a student can apply new ideas into the work context. (Stirling & al. 2017.)

In addition to the above-mentioned modes of the experiential learning theory, the research literature proposes to focus on the actual engagement of the different stakeholders when determining if a certain model of apprenticeships or internships is likely to result into deep learning. (Stirling & al. 2017, Jackson 2018, Hardie et. al. 2018, Kramer-Simpson 2018, Billett 2014). In the following, we further explore the meaning of student, teacher and employer engagement in work-integrated learning.

Student engagement

According to Jackson (2018), student motivation to engage in work-integrated learning modes is most likely to response to industry relevant work experience and an attempt to differentiate themselves in a competitive labour market. However, the willingness to build industry-relevant competences may lead into taking up an extra-curricular internship or apprenticeship, which may lead into prolonged study time. Jackson stresses the importance of planning such work-integrated learning periods into the degree studies, hence avoiding the chance of losing valuable

time from the learners while they embark in those important learning processes in the world of work.

Teacher engagement

As stated before, having only workplace experiences does not necessary lead into deep learning. Therefore, the role of the teacher is to design pedagogical practices that translate these experiences to the language of learning. According to Billett (2011), teachers are to guide learners to explicitly reflect on and reconcile their learning in the classroom and professional settings. This will lead into a rich process which helps students to develop a better understanding of the workplace experiences, including the nuances of professional practice and how it can differ from theory (Jackson 2018).

Employer engagement

Workspace tutors and mentors have an important role in facilitating learning in a professional context. Jackson (2018) highlights the role of feedback, because it enables the student to set goals and negotiate realistic achievements and milestones with their workplace tutors. However, employers may be reluctant to engage in work-integrated learning processes because they are seen as resource intensive. Some organizations, e.g. small and medium sized companies, may lack a capacity for the required supervisory and mentoring arrangements (Jackson 2018).

In conclusion, it is important to explore closely the nature of work-integrated learning. An apprenticeship training can provide student with a range of tasks that are authentic (the task resembles those required in professional life) or proximal (the setting resembles professional contexts). Adequate support must be given to employer organizations to ensure they are equipped to deliver appropriate mentoring/ supervision, feedback and performance management processes in these settings. University-business collaboration may include both smaller, homebased organizations as well as big, multinational companies. Therefore, the actual context where experiential learning takes place has an important meaning in facilitating deep learning. In the following chapter we will illustrate some of the features found in the case studies.

3. DESCRIPTIVE STATISTICS OF THE CASE STUDIES

The total amount of the collected cases was 33. A majority of the cases represent technology (n=11) or management (n=8). The next biggest domains in the cases were ICT (n=4), business (n=3) and domain including general and/or multidisciplinary programmes (n=3). (Figure 1)

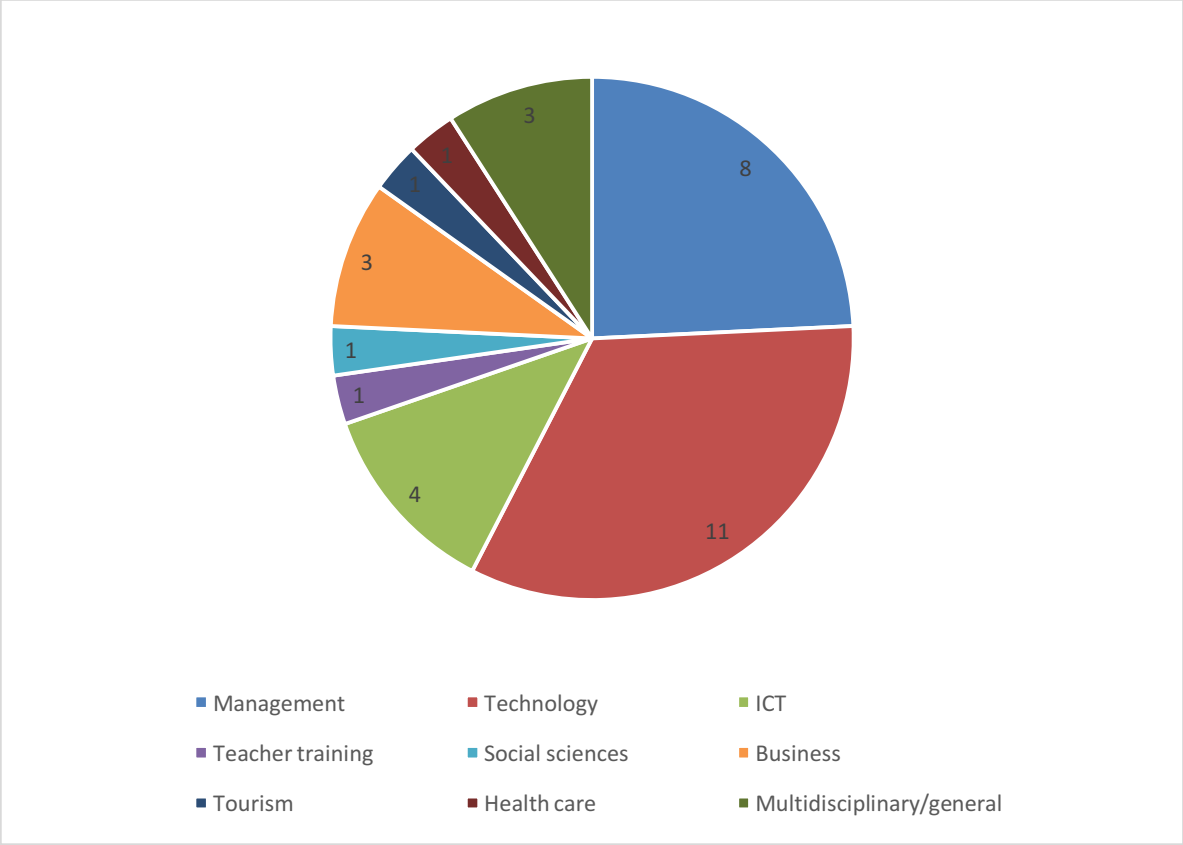

Figure 1: Distribution of case studies by discipline

The collected case studies show that the apprenticeship programmes in the higher education framework still are strongly promoted by the higher education institutions. Companies are not very active in seeking tools to ease their need for skilled workers through dedicated apprenticeship programmes. There are however, some programmes that are based on established university-business cooperation and can hence be defined as joint programmes trying to solve company-specific or industry-specific requirement challenges (Figure 2).

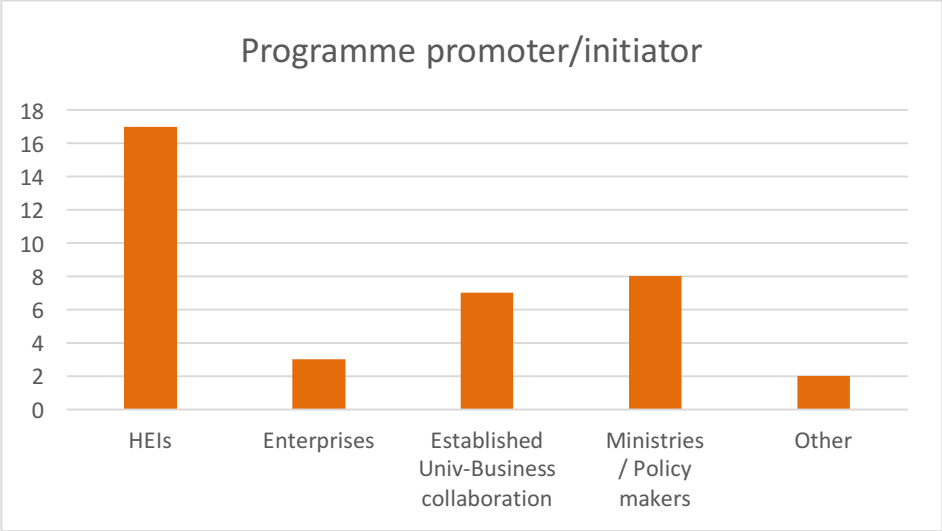

Figure 2: Programme promoter in case studies

In terms of qualification level almost half (n=14) of the presented cases are standard Bachelor-Master-Doctorate studies integrating e.g. part-time, evening studies, distance or blended learning and teaching to support training while working. Altogether 8 cases highlight interesting practices that represent a diversity of formal, non-formal and informal arrangements including apprenticeships, work placement and informal learning on the job and/ or training programmes that do not fit in the categories (Figure 3).

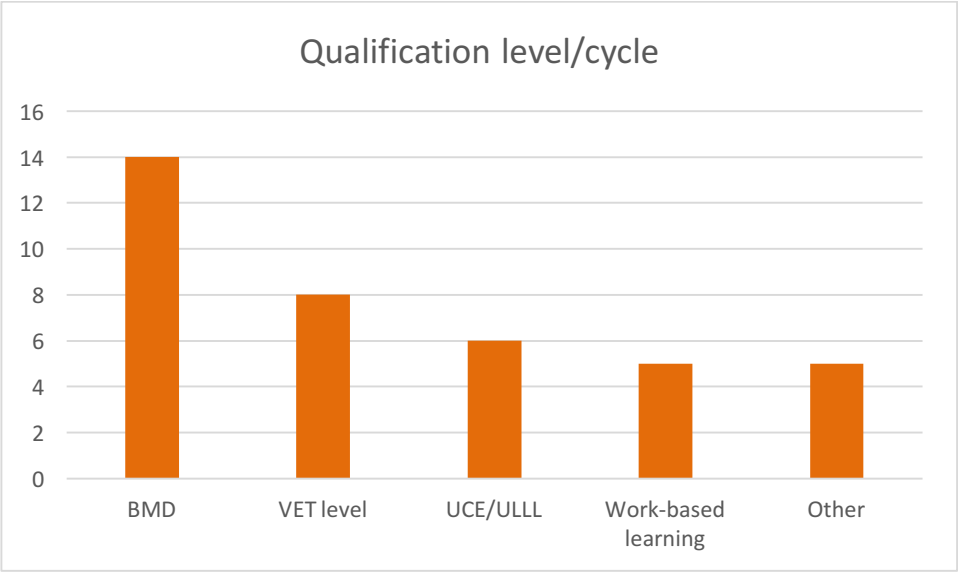

Figure 3: Qualification level in case studies

In terms of access criteria, the presented case studies were quite clearly put in one category. One in two cases (n=17) included an academic degree as a formal access criterion to be selected for an apprenticeship scheme. In addition to academic degree there is a fairly general tendency to require at least some years of working experience as well but this aspect

was only highlighted in five cases. Four cases mentioned that learners need to prove some work experience but do not need to have academic experience (Figure 4).

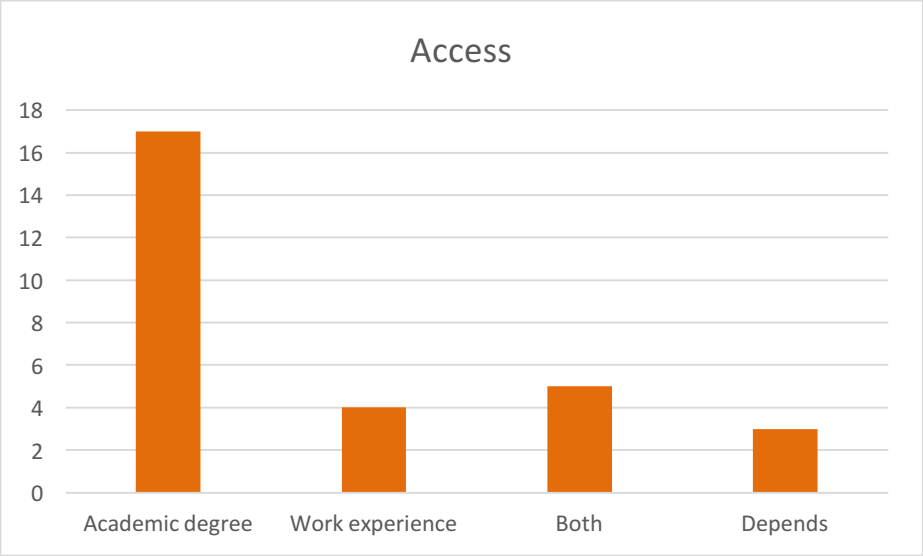

Figure 4: Access requirement to the Apprenticeship programme

Altogether 17 case studies were describing the main objective of the good practice case in solving company specific or industry specific training or recruitment needs but in many cases the curricular responsibility still remains with the higher education institutions. However, it is good to notice that in 12 cases the programme curriculum had been planned in collaboration between the companies and the higher education institutions.

In all these 17 cases a very strong company engagement was highlighted. However, in some of the cases the engagement was highly company-specific addressing skills gap in a pre-defined company whereas in other cases the focus was more at industry level addressing a regional skills shortage in some defined fields of industry. Shared traits for many of these cases were well defined and structured match-making processes and careful student selection and limited access. Many of the company specific programmes used the training to both select new potential workers from students and educate their existing staff members at the same time to build the capacity of the company.

> *"As there is a local shortage in the area of software development this is an aim of the dual study programme to recruit students for their STEM-related studies, who are not already part of their traditional target group, mostly consisting of students from high schools with a focus on STEM education and training. […] Students are accompanied throughout the whole process of entering the labour market. The first two semesters are full-time study and include multi-steps matchmaking-process between students and companies." (P03.2AT)*

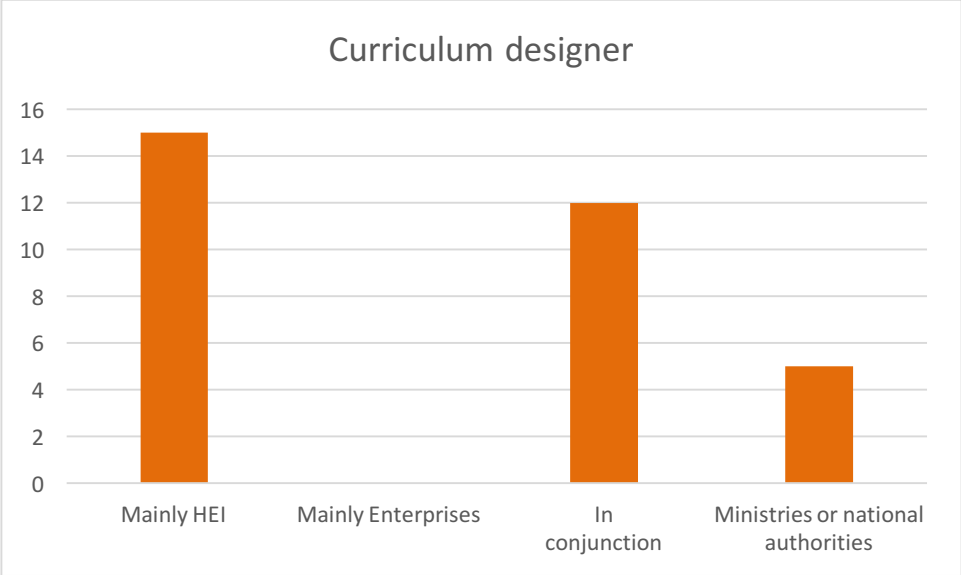

Figure 5: Curriculum designer in case studies

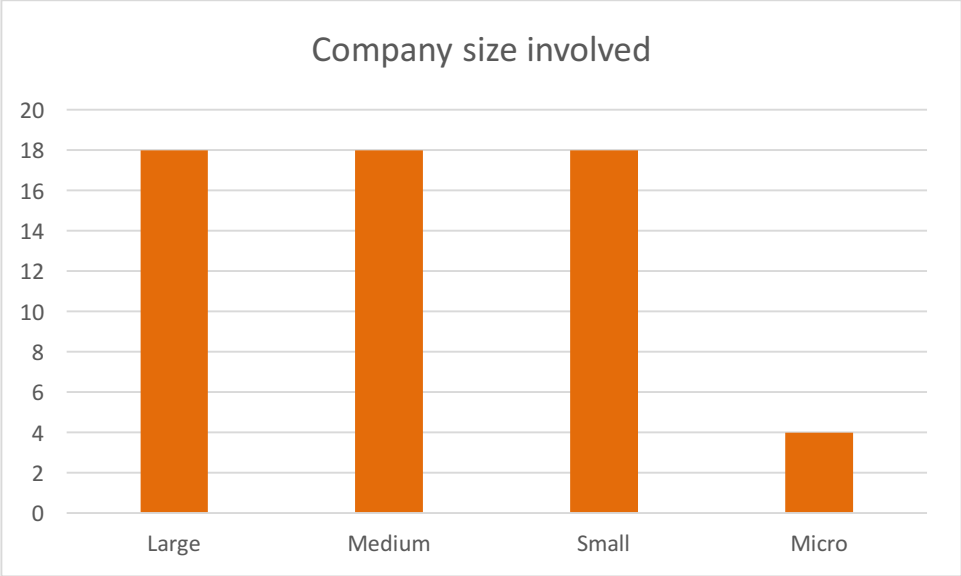

Figure 6: Size of the cooperating companies[2]

A clear majority (N=28,85 %) of the cases demonstrates a tutoring model where both higher education institution and company are strongly contributing to the tutoring of the students during their apprenticeship training. In some totally company-driven apprenticeship programmes the learners are only supported by the enterprise during their apprenticeship training (Figure 7).

[2] The apprenticeship programmes of the collected case studies work, in some instances, with a large group of companies. In total we have information about 57 different companies that have collaborated in the programmes discussed in this report.

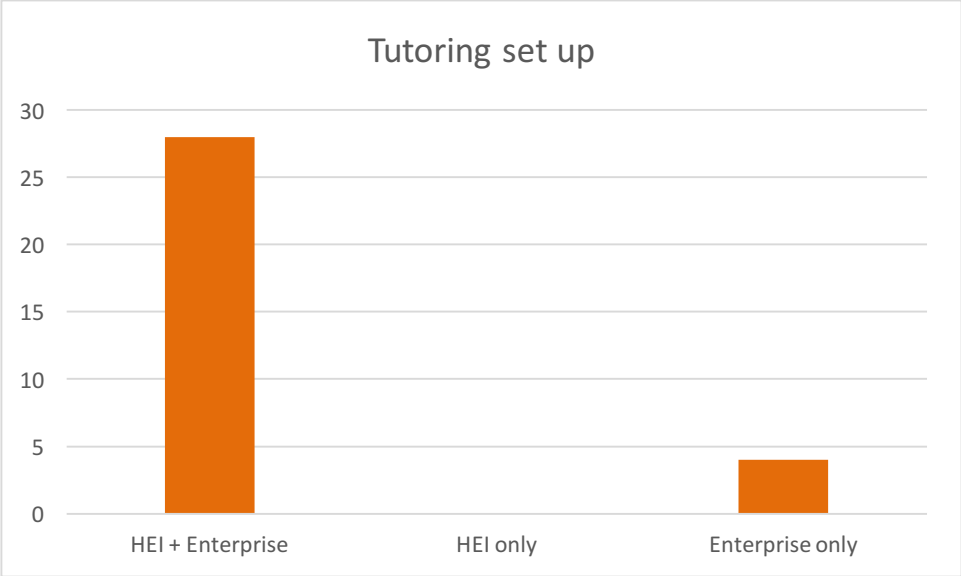

Figure 7: Tutoring set up in apprenticeship programmes

Even though a wide agreement exists on the importance of offering systematic training to the tutors and mentors, only one third (n=11, 33 %) of the apprenticeship programmes presented as good practices are offering such a training as part of the training structure while the rest are for some reason not offering dedicated training to the university tutors or company mentors (Figure 8).

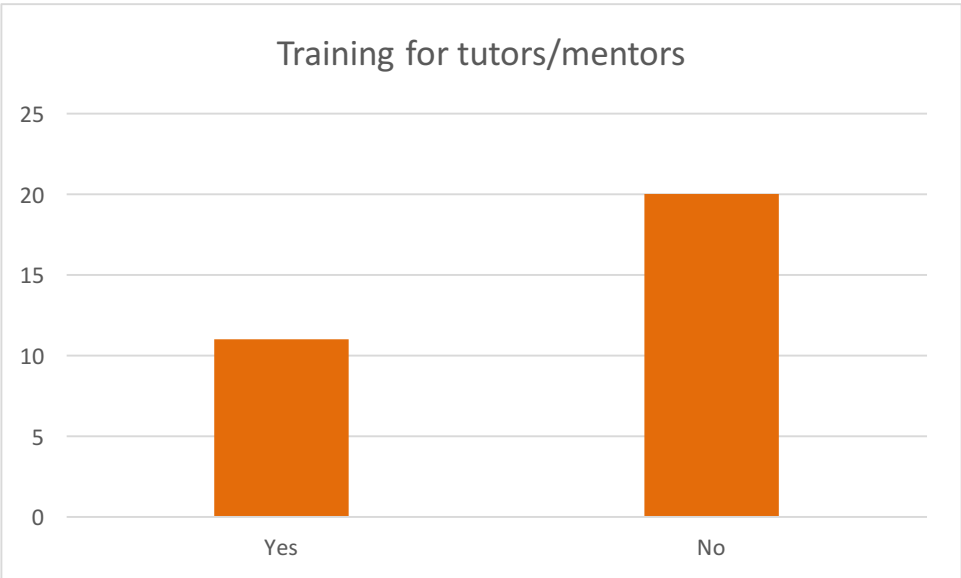

Figure 8: Training for tutors/ mentors in the programme structure

In terms of supporting learning during the apprenticeship programme, different training programmes use some supporting tools. Specifically mentioned tools for pedagogic support

were learning diaries, shared monitoring tables, face-to-face meetings and virtual meetings where the face-to-face meetings were the most commonly used tools (n=24) (Figure 9).

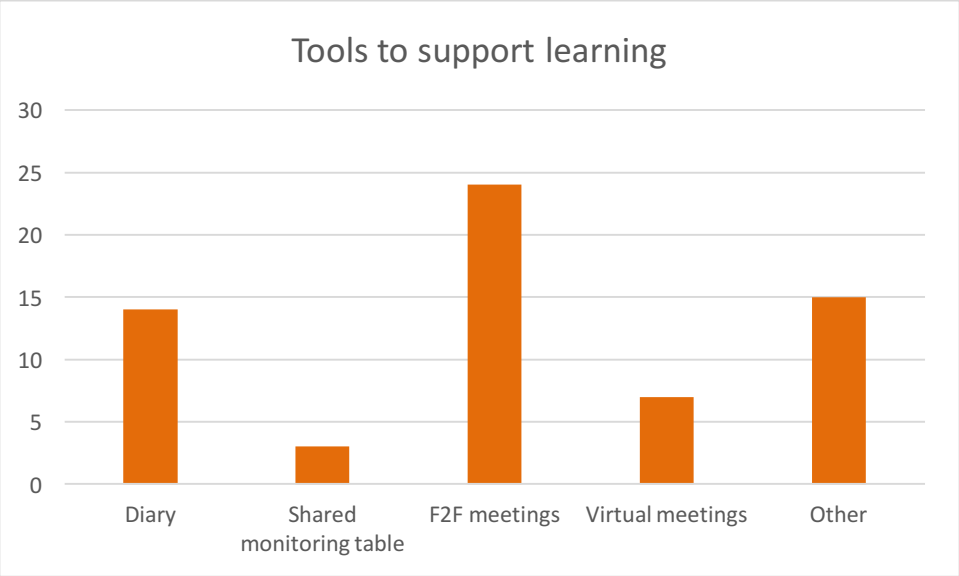

Figure 9: Tools to support learning in the apprenticeship programmes

When considering the predefined apprenticeship characteristics one can notice that the number of cases with 6 HE apprenticeship characteristics[3] is 24 (representing 72,72 % of the total), while the cases with at least 4 HE apprenticeship characteristics are 31 (representing 93,9 % of the total). Thus, the consortium agrees that the selection of cases was appropriate and useful.

From the 6 characteristics of the definition, number 3 – "Offers a remuneration to students" – is the least agreed (in 21,21 % of the cases where it does not apply), and characteristic 1 – "Combines workplace and education or training" – is fulfilled in all the collected cases.

With respect to the predefined aspects of the presented apprenticeship programmes, the respondents were also asked to evaluate relevance, transferability, impact and standardisation aspects of their cases. Four case studies from France are not answering to these questions so the following analysis is done on the basis of 29 case studies.

a. Relevance:

- 23 cases are rated 5 for relevance (79,31 %)
- 5 cases are rated 4 for relevance (17,24 %)
- 1 case is rated 1 for relevance (please read the general analysis, point d, above for clarification on this low rate)

[3] The HE Apprenticeship definition approved by the ApprEnt consortium and applied in all the work of the project states that to comply with HE apprenticeships, a programme must fulfil a minimum of 4 of the 6 identified characteristics. See page 6 for more details.

In general, all the cases appear to be relevant and can be useful to learn what is being done in different countries/institutions. With this premise fulfilled, the consortium can trust the examples collected are adequate to the specific scope they have been selected for.

b. Transferability:

- 15 cases are rated 5 for transferability (51,72 %)
- 7 cases are rated 4 for transferability (24,13 %)
- 6 cases are rated 3 for transferability (20,68 %)
- 1 case is rated 1 for transferability mainly because the programme is protected by copy right

Altogether 22 (75 %) of the case studies show high potential for transferability and 6 cases (20 %) some potential. In terms of identified transferability, i.e. aspects that could be transferred to higher education apprenticeship programmes widely or would be useful for higher education apprenticeship programmes and practices in general were further described at least at some level only in 8 cases.

Based on the limited amount of qualitative data one cannot find any common aspects in the reported transferability. In order to be able to draw some conclusions about the possible potential for transferability one would need to make a thorough analysis of all the cases. Collected material do not offer possibility to such a deeper analysis in this respect. The main points for transferability highlighted by the apprenticeship good practices can hence only be summarised as follows:

- Specialities of the diploma of engineers can be validated on the continuing education process and through apprenticeship (P01.2FR)
- What could be useful for HE apprenticeships is the cooperation model between students, school teachers and company tutors, who are all involved in co-planning activities. This encourages everyone to think about managing the experience and evaluating the results. (P07.1IT)
- The master's degree is transferable to other sectors whenever professionals and companies are available and a selection of students is made, where the students profile is the one he/she wants from the company. In professions with fewer outlets it may be unfeasible. From this, the impact and relevance of the degree in the insertion of students in the labour market and in employability by companies can be seen. (P08.2ES)
- The experience acquired in this long running training programme based on the principles of dual studies and business-university cooperation is transferable to other types of programmes. In fact, the programme design is now transferred to other knowledge areas […] and it will be used to improve official education

programmes (Bachelor and Master). However, the transfer to official programmes faced legal and organisational obstacles. This includes also obstacles related to the academic culture of the HEI. (P16.2ES)

- Training programmes need to meet the needs of the companies in relation to the needs of qualified personnel. There must be prior knowledge of these needs and above all involve companies in the construction of their curriculum plans. The tutors must have specific training and availability to welcome and integrate the trainees. (P12.1PT)
- Tutoring is particularly important if we consider the academic model we intend to achieve within the European area. The different types of mentoring, curricular tutoring, academic and formative tutoring are some of the ways found by the institutions to respond to the diagnosed needs of students. (P12.2PT)
- Dual education involves a new way of doing things, a new relationship with all the involved parties, new duties. Some training is highly advisable before, during and even after the implementation of the programme (we see it as a philosophy of continuous improvement). (P01.3ES)
- Being a reorientation programme this kind of actions could easily be transferred to HE, within the guidance- both academic and professional. […] In order to transfer it more widely, it requires predisposition and fundamental change in the attitude of university teachers and managers, so this activity is recognised as useful and relevant for career progression. (P05.3PT)

c. Impact:

- 23 cases are rated 5 for impact (79,31 %)
- 4 cases are rated 4 for impact (13,79 %)
- 2 cases are rated 3 for impact (6,89 %)

In general, all the cases have made an impact and show that the programme is working well and will continue active.

d. Potential for standardisation:

- 13 cases are rated 5 for potential standardisation (44,82 %)
- 9 cases are rated 4 for potential standardisation (30,03 %)
- 4 cases are rated 3 for potential standardisation (13,79 %)
- 2 cases are rated 2 for potential standardisation (6,89 %)
- 1 case was left blank in this section

All in all 22 of the 29 cases (almost 75 %) have a good rate and are potentially standardisable. These cases will be good examples to take into consideration when making recommendations to other institutions interested in developing apprenticeship programmes.

4. QUALITATIVE ANALYSIS OF THE CASE STUDIES

A more qualitative analysis of the case studies can be done taking as reference the agreed definition of "HE Apprenticeships", understood as programmes that show all or a minimum of four characteristics out of the six included in the ApprEnt HE Apprenticeship definition. In fact, many of the features of the programmes described in the collected case studies can be matched against the 6 characteristics of the ApprEnt definition. Some examples are provided below.

Characteristic 1: Learning between workplace and educational institutions

All the case studies show that, within the identified schemes, learning alternates between the workplace and the educational institution. This is particularly valued element by students, who are offered the possibility to have real contacts with the labour market from day one of the learning scheme and experience how the learned theory can be useful in practice (P09.2FR). Indeed, one of the most relevant benefits of HE apprenticeship schemes is that they "connect the academic activity with the social reality" (P08.1ES).

For apprenticeship schemes to generate the above-mentioned advantages, good practice requires that the planning of the work to be accomplished in company is properly done, meaning that this has to be discussed and agreed with the company and understood and accepted by the learner (P09.1FR).

Characteristic 2: Mentoring and tutoring creating meaningful learning opportunities

Many of the case studies highlight the importance of mentoring and tutoring in ensuring meaningful learning opportunities. As indicated in Chapter 3, the presence of both academic supervisor and company mentor is mentioned by many of the case studies (e.g. P01.3PL, P03.1AT, P03.2AT, P05.2PT, P08.1ES, P15.1ES, P17.1ES, P17.2ES) as well the sharing of responsibility between the university of enterprise when it comes to the tutoring and assessment of the learners (e.g. P01.2FR). There is evidence of interesting practice of peer-mentoring, whereby the mentor and supervisor help each other in fulfilling the tasks required by their function (P06.1FI, P06.2FI).

Many case studies show that both the mentors and the learners are recruited according to specific criteria, meaning that not anyone can hold this task (P01.3PL, P04.1EE, P05.4PT, P09.1FR, P09.2FR, P13.2FI, P15.1ES, P17.1ES). The priority of the tutoring and mentoring process should always be to develop the learner's skills (P01.2FR). Interestingly, if we consider that training of mentors and supervisors is not as common as it should be, some of the cases make a very clear point that training supervisors/mentors is imperative (P01.4ES, P03.2AT, P06.1FI). Several cases point out that, for a proper mentoring and tutoring structure and process to be established, a cultural change in organisations (both at HEIs an at companies) is needed (P01.3ES, P05.3PT, P16.1ES).

When designing the learning process, the case studies show that learning outcomes (LOs) are often clearly specified (e.g. P01.3PL, P03.1AT, P03.2AT, P11.1EE). Methods of verification of achievement of LOs can also be present (P01.3PL). Some of the cases (P03.1AT, P04.2EE) show evidence of the role of learners in the design of their own learning pathway (personal study plan) and several cases reveal a growing attention paid to the development of expertise in the direction of more personalisation studies and learning pathways (P04.2EE, P04.2EE, P03.1AT, P06.1FI).

Characteristic 3: Apprenticeship in formal and continuing education

Many of the apprenticeship schemes described in the case studies are embedded in the context of a formal or continuing education programme (as also highlighted in Chapter 3). In the context of the programme, the work-based experience allows learners to obtain a certificate for what they know, by enrolling and filling up the gaps of knowledge they do not have yet (P11.2EE). When doing a Bachelor degree, for instance, the learners will end the studying period with 4 years of practical experience, while standard students will have to get their work experience by getting a first job after graduation (P13.2FI).
Interestingly, some cases suggest that recognition/validation of prior learning (RPL/VPL) is used and integrated in the scheme (P01.1UK, P01.2FR). As pointed out, Rector's support to organise these programmes may be essential (P17.2ES).

Characteristic 4: Qualification through certification

The type of qualification obtained at the moment of completion of the programme can vary, with several case studies indicating how some programmes are connected to official bodies which can accept a successful student for intermediate level of their own official accreditation (P01.1UK, P01/2FR, P01.4PL, P07.2IT).

Characteristic 5: Contracts in Apprenticeship

Speaking about contracts existing between the actors involved in the scheme, these can be vary but it is worth to mention an interesting case in which the existence of four different contracts with the Ministry is evidenced: one for the learner, one for the HEI, one for the employer and one for the mentors (P01.3PL).

Characteristic 6: Types of Remuneration

Coming to the issue of compensation and payment, this can take different forms: scholarships are available, as well as other forms of financial remuneration, although they are not further specified (e-g. P01.3PL, P03.1AT, P07.1IT, P08.2ES, P10.1AT, P17.1ES, P17.2ES).

Brief SWOT emerging from the case studies

By plotting the key aspects of the features and comments included in the case studies in a short SWOT analysis, it is possible to identify the main strengths, weaknesses, opportunities and threats/challenges of apprenticeships and work-based learning schemes in the context of HEIs-business relations.

Table 3: Brief SWOT emerging from the case studies

STRENGTHS	WEAKNESSES
• Learners' average results are better than those in standard degrees • Teaching is based in the analysis of real case studies • Offer of real-life employment situation • The schemes help student to develop specific technical skills and also soft skills such as problem solving or team work • The schemes represent a direct response to the educational needs in specific areas • Skills mismatch are identified during the programme and addressed • Employability level is very high • The schemes allow for a smoother and more efficient recruitment process • The schemes represent a valuable opportunity for small local/regional enterprises • They contribute to the transfer of knowledge and technology to society	• The administrative process surrounding apprenticeship schemes (contract writing, legal frameworks) is sometimes too complex and can be discouraging • Apprenticeship posts are limited as it is not always easy to find enterprises interested to host enough apprentices • Sometimes only the best learners have access to HE apprenticeship programmes • There may be specific recruitment difficulties in some fields (catering profession, metalworking industry, transport industry, for example…) • Micro companies often tend to refuse apprenticeships because they do not have the time it takes to draw a work plan and support the apprentices nor to promote the students' self-confidence on their performance as they should • It can be difficult to find within the company the right employee able to take care of apprentices as mentor • Uneven quality of company mentors. In general, not enough support or training is provided to company mentors and HE supervisors

OPPORTUNITIES	THREATS/CHALLENGES
• They are a way to recruiting new staff • They can help increase graduate employment rates • They can make employment in the specific area afterwards more likely • They can help build trust between HEIs and companies • For HEIs, they represent the opportunity to review the current courses and adapt them to new existing needs of learners and companies • Apprenticeship programmes allow external experts to be enrolled as teachers in HEIs • Successful programmes and experiences can serve as inspiration to update current laws preventing some existing apprenticeship programmes to be adapted to standard education because they do not follow the national legislation. • Existing schemes can encourage new enterprises interested in signing apprenticeship agreements • They can stimulate increasing networking and the building up of clusters between enterprises for delivery of higher apprenticeship, which would represent an enabling factor, especially for smaller companies. • Establishing an accreditation system for mentors and tutors could guarantee a quality system of apprenticeship and allow mentors and tutors to develop formative capacities beyond their professional knowledge	• Mentors/supervisors are not adequately trained and there is often a lack of pedagogical skills of in-company mentors • Although a lot of interest exists towards apprenticeship schemes, the required dedication of these schemes often determine limits in terms of the number of students who can participate to them • Some students may be interested to apprentice positions in well-known enterprises only disregarding potentially valuable experiences within less well-known or simply smaller companies • Difficulty for apprentices to manage the double workload of studying and working • It may prove challenging to find enough managers that want to supervise apprentices • Sustainability of apprenticeship schemes in general • From the companies' perspective, the cost-benefit ratio may prevent the company to encourage or even allow/promote the workers further education, as it is identified that, after acquiring a higher qualification, the workers move to another company

5. FOCUS GROUP DISCUSSIONS

In addition to the collection of the interesting practice case studies the ApprEnt partners also organised national discussion focus groups as national dialogue spaces where HEIs and enterprises exchanged impressions and views about (a) the collected Case Studies from WP2 and (b) the SWOT analysis from WP1, with the intention to find ways of improving the apprenticeships system and the University-Business collaboration from different points of view: policy at different levels, planning of programmes, mentoring, etc.

Altogether six national Focus Discussion Groups with key stakeholders and practitioners of apprenticeship programmes in their country (AT, FR, EE, PT, FI, ES) were organised. The main objective of this activity was for partners to obtain: deeper knowledge of and understanding from each other, possible (small) agreements for the progress of current practices, ideas for standard improvement of the apprenticeship system in Europe, peer learning with stakeholders and potential collaborators, etc.

The ApprEnt partners agreed to use some standard questions in their national activities, including the experience of different stakeholders (students, schools and employers). The main questions used in the focus groups included the following:

- What are the positive aspects of the model/programme?
- What are the main challenges of the model/programme?
- What are the main policy suggestions?
- How can periodical focus groups be settled to discuss apprenticeships issues as a routine activity?

From the analysis of the inputs provided in the reports of the National Focus Discussion Groups, some observations and common themes have been summarised. A detailed account of all the national focus groups discussions is included in the reports presented in the Annex 3.

Some common themes and positive aspects inherent to apprenticeship schemes can be identified as follows:

- Apprenticeships are a source of knowledge transfer, of consulting opportunities for companies and of support for lifelong learning processes.
- Apprenticeships facilitate the first entry into the job market but are also suitable for adult people with working experience, allowing them to keep up to-date with technological development, reposition themselves in the job market and be prepared for disruptive changes in economy/society.

- Apprenticeships strengthen cooperation between universities and companies/employers and allow universities to understand better what are the expectations and needs of employers.
- For students, apprenticeship represent an opportunity to combine work and learning and work on real-life challenges.
- For companies, apprenticeship programmes are a mean of pre-recruitment and of increasing employees' autonomy.
- Apprenticeship are a way for companies to contribute to social inclusion.

6. CONCLUSIONS

Based on the collected case studies and national focus group reports, recommendations can be drawn to address the main challenges of existing apprenticeship model/programmes according to three different categories: challenges for policy makers; challenges for higher education institutions and challenges for companies.

Recommendations for policy makers:

- Apprenticeship programmes are not widely known attractive alternatives for learners, so we should raise the awareness level of such programmes to attract more students towards the opportunity to work and study at the same time and hence raise their possibilities for employment.
- Apprenticeships regulatory frameworks and contract processes should be made simpler. At present they are much more complex compared to other work contracts. Easier and smoother administrative process (contract writing, legal frameworks) can contribute to promote apprenticeship schemes.
- SMEs should be given support in the implementation of the recruitment process since, unlike big companies that have a human resources department able to manage this process and develop tools, they do not have enough time and resources.
- Companies, especially small ones, would highly benefit from receiving some financial support.
- It would be helpful for all potential users (i.e. learners, companies and also staff from HEIs) to have more good practice examples available.

Recommendations for companies:

- The culture of the workplace is essential in creating learning opportunities. The employer must be aware that he/she is the key element in making the learning possible by e.g. defining the duties of the learner challenging enough and encouraging the staff to teach one another.
- SMEs should acquire more training and information about how to organise recruitment processes.
- Companies could consider including a "permanence clause" in the work contract, to commit the worker to perform a given time period in the company if parallel education is carried out with the job.

Company mentors

- It is essential to clarify in written, if possible, the role of the mentor and to acknowledge it explicitly. Company mentors might also need to receive supervision training.
- Training of mentors is crucial and should be devoted adequate efforts. It should be ensured that mentors in companies have the pedagogical skills and competences needed to guide and support students' learning in the workplaces and provide them training for the task.
- Workplace mentors need time to adjust to their new role to develop their commitment to the role.
- Mentors should consider attending assessment juries to better understand goals and learning outcomes of a training before recruiting apprentices.

Coordination and cooperation

- The coordination and cooperation between the involved actors – the HE, the company and the learner - is key both in the stage of design and in that of implementation of apprenticeship.
- It is very important that training providers and companies use a common frame of references and vocabulary when implementing the apprenticeship scheme.
- Both the training provider and the company should make sure that the tasks assigned to apprentice are realistic and achievable, paying attention to the apprentice's workload. The correct definition of the apprentice tasks and work is very important.
- Periodical common reflection sessions could help to improve the experience and move forward.

Recommendations for higher education institutions:

Management

- It would help to have a central office in the HE institution to manage a pool of companies and their offer, and match them with the student needs.
- Easier and smoother administrative process (contract writing, legal frameworks) can contribute to promote apprenticeship schemes.

Curriculum and assessment

- The learning outcomes and skills of the training available at university don't always fit with concrete needs of the labour market, which are changing very fast. The curricula of the training institutions needs to be developed in a more flexible way to serve the needs of the employers and organisations.
- Suitable assessment methods should be devised to monitor the learning achieved. New ways to recognise learning (instead of traditional academic writing) to make

implicit knowledge visible should also be considered, taking into account prior learning as well.

- It can be useful if the HE institution provides the students with a workbook during learning periods at work. Workbook can serve as an additional learning channel and reinforce the learning in the workplace. It also serves as a tool for the evaluation of the work based learning period.

Students

- There should be more guidance available addressed to students on the selection of the apprenticeships.
- Apprenticeship determine a heavier workload for students, therefore they need tools for developing better skills of time-management and self-analysis.
- Academics need to understand apprenticeship programmes: students are under a different level of pressure and their effort to work and carry on with studies must be put in value. The relation between apprentices and tutors/supervisors needs to be improved, when the effort made by the students is not fully understood.
- When possibilities of recruitment after apprenticeship do not exist, apprentices should receive guidance and support to find other job opportunities.

Supervisors/tutors

- It is essential to clarify in written, if possible, the role of each supervisor/tutor and to acknowledge it explicitly. In the case of pedagogical supervisors, this can be done attributing more teaching time to the supervision activity and taking into account the supervision hours when the teaching load is assigned.
- The pedagogical supervisor/tutor should plan some visits at the workplace, since this can be a good opportunity to revitalise the apprenticeship if there is any difficulty (guidance or work issues). It is very important that the pedagogical supervisor have a good knowledge of the job specificities and company context for the visit to be efficient and useful.

Coordination and cooperation

- When devising apprenticeships, the attractiveness for learners and the benefits for companies should always be kept in mind: the company needs to see the advantages and benefits of engaging in apprenticeships.
- The coordination and cooperation between the involved actors – the HE, the company and the learner - is key both in the stage of design and in that of implementation of apprenticeship.
- It is very important that training providers and companies use a common frame of references and vocabulary instead of academic jargon when implementing the apprenticeship. Companies would benefit from a better definition of the learning outcomes and the skills expected from the learner.

- Periodical common reflection sessions could help to improve the experience and move forward.
- Both the training provider and the company should make sure that the tasks assigned to apprentice are realistic and achievable, paying attention to the apprentice's workload. The correct definition of the apprentice tasks and work is very important.
- It is important to make apprenticeship more accessible, for instance by making available online tools for the apprenticeship follow up (apprentice induction booklet, follow up report) on a platform reachable by the company, the apprentice and the training provider. The use of ePortfolios can be very useful for both documentation and assessment of the learning.
- Training providers should make sure that tools useful for induction and guidance of apprentices are made available to people in charge of mentoring within companies.

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ANNEX 1: TEMPLATE FOR THE COLLECTION OF BEST PRACTICES (D.2.2)

This is the template for collecting existing good practices in "HE apprenticeship programmes" or in other (non-HE apprenticeship) programmes that, somehow, can be directly relevant, easily transferable or useful for HE apprenticeship programmes in the European HEIs. The purpose of this template is to identify successful case stories and to explain how the experience that you present can be adapted or can be transferred to future HE apprenticeship programmes. Please, do not surpass a max of 4 pages in total.

From the point of view of University-Business collaboration, "HE Apprenticeship" is understood as programmes that have all or a minimum of four characteristics out of the six listed below:

1. learning alternates between a workplace and an educational or training institution
2. the programme has a strong tutoring/mentoring aspect both at work and in the HEI, where the employer and higher education institution in collaboration assume responsibility for providing instruction and meaningful learning opportunities at the workplace with a skilled person, in order to offer to the learner the opportunity to acquire the knowledge, skills and competences needed in the profession
3. the programme is part of formal and/or continuing education and training
4. on successful completion of the programme, learners acquire a qualification or a part of a qualification and receive an officially recognised certificate
5. apprenticeships are based on a contract or formal agreement between employer and learner but, sometimes, can be based on a contract or formal agreement with the HEI
6. apprentices are contractually linked to an employee and to a HEI and receive remuneration in the form of wage, allowance or similar for their work

All showcased Best Practices should take into consideration four parameters:

1. Relevance: The best practice should present a programme or activity directly connected to a real apprenticeship (or similar) programme.
2. Transferability: The best practice case should clearly showcase transferable characteristics of the activity and introduce suggestions and ideas how to improve future HE apprenticeship programmes.
3. Impact: The case studies should provide both qualitative and quantitative evidence of their impact in terms of results, changes in processes, impact on the university-business collaboration, impact on the staff, impact on the students, etc.
4. Potential for standardisation: All best practices should, if possible, showcase potential aspects for the HE apprenticeship programme standardization/ programme model.

A. Author's details (especially important if is not a partner who fills it in)

Name	
Surname	
Institution	
Country	
Email	
Telephone	

B. Which of the key characteristics fulfil your case (please answer all the items)

	YES	NO
• Combines workplace with education or training	☐	☐
• Includes mentoring	☐	☐
• Offers a remuneration to the student	☐	☐
• Forms part of a formal or/and continuing education programme	☐	☐
• Provides a certification	☐	☐
• Gives a contract or formal agreement to the student	☐	☐

C. When considering the four parameters listed below, how well are these showcased in this good practice? Tick one box for each parameter

Scale: 1 = not at all; 2 = very little; 3 = somewhat; 4 = well; 5 = very well

	1	2	3	4	5
a. Relevance	☐	☐	☐	☐	☐
b. Transferability of the case	☐	☐	☐	☐	☐
c. Impact	☐	☐	☐	☐	☐
d. Potential for standardisation	☐	☐	☐	☐	☐

D. Title of your Case Study

E. Describe your case (max 4 pages)

1. How is the apprenticeship system in your country/institution (max one page):
   a) Briefly describe the main characteristics of the system. how does it work?
   b) In your opinion, what are the strengths and the areas for improvement of this system?

2. Description of the Best Practice case (max half a page) a) Describe the practice/programme: objectives, teaching/learning methods, supervision/guidance and mentoring, selection criteria, target groups, level, type of enterprise cooperation etc b) In your opinion what are the challenges, strengths and weaknesses of this practice/programme?

3. Describe the feedback and student experiences of the programme/practice (max half a page)

4. Evaluate how the programme/practice reaches the following goals (tick one box for each goal). Scale: 1 = not at all; 2 = very little; 3 = somewhat; 4 = well; 5 = very well

	1	2	3	4	5
i. Enhances relevant working life skills and qualifications	☐	☐	☐	☐	☐
ii. Promotes professional growth	☐	☐	☐	☐	☐
iii. Develops learning environment practices as a whole	☐	☐	☐	☐	☐
iv. Develops work-based learning practices and materials	☐	☐	☐	☐	☐
v. Improves work performance	☐	☐	☐	☐	☐
vi. Improves tutoring and mentoring practices	☐	☐	☐	☐	☐
vii. Enhances Univeristy-Business collaboration	☐	☐	☐	☐	☐
viii. Showcases potential aspects for programme standardisation	☐	☐	☐	☐	☐

5. Relevance and Transferability: if your case study is not directly linked to a HE apprenticeship programme, please show how this case (or some aspects) could be transferred to HE apprenticeship programmes and why it would be useful for HE apprenticeships (max one page)

6. Comments, clarifications, ideas and relevant links:

ANNEX 2: PERCENTAGES FROM THE RECEIVED CASES

Section E "Description" from the form

i. enhances relevant working life skills and qualifications

- 24 cases are rated 5 (82.76 %)
- 5 cases are rated 4 (17,24 %)

ii. promotes professional growth

- 22 Are rated 5 (75.87 %)
- 6 cases are rated 4 (20.69 %)
- 1 case is rated 3 (3.45 %)

iii. develops learning environment practices

- 19 cases are rated 5 (65.52 %)
- 9 cases are rated 4 (31.03 %)
- 1 case is rated 3 (3.45 %)

iv. develops work-based learning

- 21 cases are rated 5 (72.41 %)
- 4 cases are rated 4 (13.80 %)
- 3 cases are rated 3 (10.34 %)
- 1 case is rated 2 (3.45 %)

v. improves work performance

- 18 cases are rated 5 (62.07 %)
- 8 cases are rated 4 (27.59 %)
- 3 cases are rated 3 (10.34 %)

vi. improves tutoring and mentoring

- 11 cases are rated 5 (37.93 %)
- 17 cases are rated 4 (58.62 %)
- 1 case is rated 3 (3.45 %)

vii. enhances university-business collaboration

- 20 cases are rated 5 (68.97 %)
- 5 cases are rated 4 (17,24 %)
- 2 cases are rates 3 (6.90 %)
- 1 case is rated 1 (3.45 %)
- 1 case has no rate assigned

viii. showcases potential standardisation

- 11 cases are rated 5 (37.93 %)
- 11 cases are rated 4 (37.93 %)
- 7 cases are rated 3 (24.14 %)

ANNEX 3: NATIONAL FOCUS DISCUSSION GROUP REPORTS

AUSTRIA

Participants:

Isabell	Grundschober	DUK
Robert	Frasch	Senate
Christina	Maier	A1 Telekom Austria
Sandra	Castiello	Private
Doris	Rannegger	REWE Group Austria
Petra	Schmid-Riggins	Private
Pooja	Gianchandani	Federal Institute for Vocational Training (BIBB)
Thomas	Felberbauer	University of Applied Science St. Pölten (FH St. Pölten)
Wolfang	Rauter	DUK
Stephan	Längle	DUK
Gregor	Pirker	DUK
Erwin	Feierl-Giedenbacher	Chamber of Labour

There is a need for networking and building clusters especially for smaller companies. Participants in the focus group contributed with the main points listed below:

- There is a need to explain "dual study" to candidates (learners)
- There is a need to outline the advantages for companies to participate and engage in higher apprenticeships
- There is a need of more good practice examples made available to potential users (i.e. learners, companies and also staff from HEIs)
- There is a need to clarify where are the differences of dual studies in sense of the ApprEnt definition related to the Austrian well known practice (internships) during normal studies
- Experiences: 2 types of delivery modes, 3 days practice, 2 days university or 2 months practice and 2 month theory – both delivery modes alternating
- Experiences: Portfolio or ePortfolio as learning and assessment instrument

Main Strengths/Chances:

- Knowledge transfer, consulting for companies, supporting LLL, supporting 21st century skills, facilitates the first entry into the job market, suitable also for people with working experience, being up to-date with technological development, preparing for disruptive change in economy/society

Main Challenges:

- Coordination between the involved partners, mentor training, attractiveness for learners, benefit for companies, suitable assessment methods

Suggestions emerging from the discussion:

- Developing clusters for delivery of higher apprenticeships for SMEs, financial support of companies to send their employees in higher apprenticeship, ePortfolio for documentation and assessment

ESTONIA

Participants:

Representative from:

1. Tourism and hospitality industry (EEUAS), restaurants and hotels
2. Tallinn University, Foundation "Young People to School", professional practice in teachers´ continuous education program
3. Health care (occupational therapists), (Tallinn Health Care College, THCC),
4. Tallinn Technical University (TTU), Business IT (MA)

Advantages:

- This is a positive and useful experience for students
- Students have opportunity to combine work and learning
- It provides additional value for the workplaces as far as the practical tasks are related to the workplace practices
- The social relations at the workplaces are improving
- Students appreciate also the possibility for reflection and group work during the studies
- This kind of education form strengthens cooperation between universities and companies/employers. It allows universities to understand better what are the expectations and needs of employers
- It is beneficial to all three parties (school-employer-student) as most of the learning is very practical and allows students to work on real-life challenges and problems as school assignments

Challenges:

- Very hard workload for students, as they have "double" load and therefore, students need better skills of time-management, and self-analysis
- Problems with pedagogical skills and competences of workplace supervisors. Although the companies´ representatives/supervisors have good occupation-specific and professional skills, most of them lack sufficient instructional competences to guide and support students´ learning in the workplaces.
- According to some students, the workplace supervisors sometimes lack the commitment to the role of a supervisor as the role is new for them and they are not adjusting to the role yet. However, the variety in this sense is rather big.
- Both enterprises and schools stressed that students themselves have to take more responsibility for their learning and assignments and better mediate (share information) between school and workplace. Students also have to be more (pro)active to inform

workplaces about the content of assignments, they have to conduct in workplaces, needs for feedback etc.

- Students are absent from too many face-to-face classes. As they are mainly already full-time workers on the field they are studying in and it is very difficult for employers to find replacements.
    - Uneven quality of workplace supervisors (mentors). Mentors need more training.

FINLAND

Participants:

1. EevaSavela(ES),Employer,ownerofpharmacyinthecityofLohja(online)
2. MonaBischoff(MB),Formerstudentinthetrainingprogrammeofworksupervisionandprocesconsultation(online)
3. RauniJaskari(RJ),Lecturerandcaseprovider,TurkuUniversityofAppliedSciences(online)
4. EsaAnttila(EA),EducationInspector,TurkuApprenticeshipOffice
5. JoonaSaari(JS),StudentofMasterDegreeinHumanistics,UniversityofTurku
6. KiaLundqvist(KL),Educationcoordinatorofspesializationprogrammeandcaseprovider,UniversityofTurku
7. HeliTrapp(HT),Developmentmanager,UniversityofTurku
8. TimoHalttunen(TH),Headofdepartment,UniversityofTurku
9. TiinaAnttila(TA),Projectmanager,UniversityofTurku

There was a lively discussion about the positive and challenging aspects of the national system of apprenticeship in general as well as the pros and cons of the case studies presented. The culture of the discipline and the line of business considerably define the attitude towards learning and willingness to pay for the training - e.g. in social work both employers and employees are used to get training paid by public body and not invest itself for it but in many other disciplines there is no tradition for "free" training.

In VET apprenticeships there is practice of a training compensation directed to the tutor in the workplace to compensate the contribution in guiding the learner. This is not usual practice in HE apprenticeships although there has been some discussion of it in certain training programmes. This depends also clearly on the discipline.

The meaning of the tutoring can't be overplayed in the apprenticeship system. There should be a constant cooperation between the HE institution and the workplace in the name of tutoring and e.g. the goals of the apprenticeship should be agreed together with the learner, HE tutor and the workplace tutor. It is also essential that the achievement of the goals are verified together. In some specialization programmes there has been a practice to make a visit in every workplace during the training. It improved the cooperation between the university and the workplaces but demanded an excessive amount of work and time. The importance of personal contacts between the HE institution and the workplace was pointed out and in VET apprenticeship there is a practice to organize a few hours training for the workplace tutors in the beginning of the apprenticeship.

It was also pointed out that when cooperating with the employers HE institutions should take care of the language and jargon used. The meetings should be equal and make the genuine cooperation possible. It is also important to consider new ways to recognise learning instead of academic writing to make implicit knowledge visible and also take into account the prior learning. One issue are the contracts between the learner, HE institution and the workplace. They are one way to ensure that the students don't leave off the training for good when they are at the workplace learning period.

Peer tutoring came out as a way to promote learning while saving the resources of the trainer or workplace tutor. The employer can also encourage the staff to train or teach each other at work.

From employers and business point of view the issue was raised that the culture of the workplace determines the opportunities for learning and the role of the employer is significant: employer can act as a server for possibilities but as well as a retarder of the progress. Anyway the most important element is the learner's own interest and inherent motivation for learning and development.

Main suggestions:

1. To start up and ensure the continuity of apprenticeship in HE, the focus should be in the needs and targets of the organizations involved. If the organisation doesn't get any benefit from the apprenticeship, it probably won't be interested in hosting new learners in the future.
2. It should be pointed out to the employers that training one person is at the same time an opportunity for development for the whole work community. It would also be useful to find out what kind of training or tutoring could be useful to arrange for business managers and employers to make them benefit for the apprenticeship system.
3. There should be obligatory practical training periods in real working life regularly on the person in charge of the apprenticeships in HE institutions. It has proved that the curricula of the training institutions are often outdated and don't serve the needs of the employers and organizations.
4. The curricula are often overloaded. There should be critical reflection on the substance included in the programme in HE institutions.
5. The culture of the workplace is essential in creating learning opportunities. The employer is the key element in making the learning possible by e.g. defining the duties of the learner challenging enough and encouraging the staff to teach one another.
6. The quality, continuity and cooperation in tutoring are the key elements for the real learning at work. The tutoring in the workplace should be carried out in close association with the tutor in HE institution to strengthen the unity in learning targets.

7. A structured reflection opportunities guided by more experienced tutor/mentor/counsellor are essential in deepening the learning in the work. Also wide array of different forums for learning are of importance.
8. The key element for profound learning and genuine professional development is the inherent motivation of the learner. For some learners it is highly motivating to gain concrete advantage from the training e.g. in the form of possibility to new positions after completed the training.
9. It has proved to be very handy that the HE institution provides the students with a workbook during learning periods at work. Workbook can serve as an additional learning channel and reinforce the learning in the workplace. It also serves as a tool for the evaluation of the work based learning period.

FRANCE

Participants:

2 companies:

- Weldom Landerneau (small city near Brest) (20 employees): Weldom is a French do-it- yourself chain gathering stores throughout France, mainly located on the outskirts of towns. The chain is also well established outside mainland France: in Corsica and the overseas departments and territories. Weldom Landerneau is hosting each year one or two apprentices
- LE SAINT (300 employees at local level, 1800 employees in total). Retailer specialized in distributing fruits and vegetables, seafood, flowers, plants. This group is hosting each year around 59 apprentices.
- The Service départemental d'incendie et de secours (SDIS) provides fire and rescue services in each Department of France, apart from Paris and central Marseille, which have separate military-staffed fire brigades. Departmental Fire and Rescue Services (public administration service) is hosting each year one or two apprentices (2 positions administrative assistant)

The 3 people who attended the meeting had 3 different profiles, with 3 different duties and tasks:

  - For le Saint Group, Human resources manager
  - The Service départemental d'incendie et de secours (SDIS) SDIS 29, one head of department, in charge of services delivery and catering
  - Weldom Landerneau, shop manager

The partners of Apprent project who attended the discussion group:

- Agnès de Cibon, Brest chamber of commerce apprenticeship training centre
- The Apprenticeship training centre (IFAC), a new apprenticeship "campus des métiers" of Brest Chamber of commerce, providing degrees in different fields (food business, bakery, automobile industry, hairstyle, business and management, aesthetic, hotel trade, catering, pharmacy). IFAC is a Postsecondary training center offering technical certificate known as the Brevet de Technicien Supérieur(BTS) and bachelor.
- Marlène André and Yannis KABLAN, UBO

A) What are the benefits to recruit an apprentice? What are the strengths of this system?

- It is a way for Companies to contribute to Social inclusion
- Gives the opportunity to adults between 30-40 years old to start a professional repositioning, in a lifelong learning process.
- Improve employees' autonomy
- It can be an incentive for mentors
- It is a mean for pre-recruitment

Example: At Company Le Saint, 80 % of the apprentices will get recruited, after the training

B) What are the weaknesses and obstacles of this practice/programme?

- It's a way to recruit, but SMEs are not trained enough to organise recruitment process
- Contrary to a "classical" contract, apprenticeship schemes involve a strong commitment through specific regulatory frameworks. If there are problems or difficulties with the apprentice during apprenticeship, the termination of contract process is complex and very long.
- Find the right employee within the company able to take care of apprentices follow up as mentor. The Service départemental d'incendie et de secours (SDIS) SDIS 29, representative reported us that he was appointed as mentor as head of department, in charge of services delivery and catering, even though the apprentice was enrolled in a training to become assistant. Now an assistant is taking care of the assistant apprentices within the department
- Unsuitability of training content. Learning outcomes and skills that don't fit with concrete needs that are changing very fast. E.g. apprentices who can't calculate a mark-up, even though there are enrolled in business training
- Difficulties in recruiting for some specific field (catering profession, metalworking industry, transport industry, for example…)
- Inadequate agenda and planning, for instance:
    - Apprenticeship time allocated at the workplace are sometimes not consistent and don't fit the needs of companies.
    - A lot of companies have greatest workload at the end of the week, during year's end celebrations and at start of school year in September. They would need more workforce and apprentices during that period of times
    - Apprentices are not at the workplace during long time period, sometimes during two months
    - Financial incentives depend on apprentices' age. Companies have more incentives when recruiting young apprentices, but sometimes older people have more skills for the job.
    - Broad-based trainings are not fitting the needs of companies

Real examples: A company underlined that designing a training with a little bit of communication skills and a little bit of business skills is not specific enough to be ready to start working very quickly, especially in a company organised into several departments and units (for example Le Saint Company is divided into logistics unit, communication/marketing unit and management and business unit).

Companies have difficulties to identify training matching their needs, because the headings of the training are too complex and not clear enough.

Agnes de Cibon, from SUP IFAC, highlighted that broad based training is relevant because workers must know how to work as project manager and must consider different parts and aspects through the project life.

We can add that education should help broaden the mind and encourage flexible thinking as needed in an unpredictable labour market.

Mentors are highlighting that it is necessary to better define the learning outcomes and skills expected, through a bill of specifications for example.

C) In your opinion, what are the areas for improvement of this system?

- Universities and training centres have to be aware of the employment market and what companies need
- Making apprenticeship more accessible and simple: making available online tools for the apprenticeship follow up (apprentice induction booklet, follow up report) on a platform reachable by the company, the apprentice and the training provider
- Mentor involvement in juries within training centre to better understand expectations and goals of trainings before recruiting apprentices.
- When there are no possibilities to recruit after apprenticeship, there is a strong need to develop guidance and support for apprentices to find job opportunities.
- Make sure that the tasks assigned to apprentice are realistic and achievable. Mentor and training provider must pay attention to apprentice's workload. The definition of the apprentice tasks and work is very important
- Designing training for mentors
- Making easier Administrative process (contract writing, legal frameworks)

<u>Feedbacks on their practices and implementation of apprenticeship.</u>

- Recruitment of apprentices - Selection process: Apprenticeship selection process is the same as a standard recruitment process for any kind of employee. But SMEs have difficulties and need support in the implementation of this process
- First Selection of resume or CVs is often made by the training provider
- Selection and interviews are made by the head of the unit, with the support of an employee working in the field of activity of the apprentice
- Selection process is very different and depends on the size of the company. Big companies have a human resources department that manages this process and develop tools (like job description form). SMEs have not enough time and are not prepared for recruitment process

Apprentice Induction and guidance:

- Apprentices induction is the same as for other employees in the company (visit and introduction to other colleagues)
- Training providers send tools to companies, but people in charge are not always aware that those tools exist

Apprentice assessment - What is assessed?

- Learning outcomes, soft skills, like other employees
- It often happens that apprentices have to meet business objectives

Who is assessing?

- Mentors during debrief and interviews
- Training centre mentor and company mentor are working together to assess apprentice skills and works
- That's very important to use a common frame of references and vocabularies, for an efficient follow up and to evaluate by knowing what you are talking about.
- Assessment is made on daily basis

The collaboration with the training centre:

- Difficult for companies to meet trainings centres expectations
- Mentors attendance at assessment jury for students to better understand goals and learning outcomes of a training before recruiting apprentices. Try as much as possible to build in apprenticeship in partnership.
- Visit at the workplace by the pedagogical supervisor. This visit can be a good opportunity to revitalize the apprenticeship if there is any difficulty (guidance or work issues)
- Very important for the pedagogical supervisor mentor to have a good knowledge job specificities and company context for an efficient and useful visit at workplace. It's necessary to use the same vocabulary to assess the same skills.

PORTUGAL

Participants:

At least 15 participants were expected but last minute professional activities prevented some of them from attending, so the FG went on with 9 participants (signed attendance list in annex): 2 students, 2 company supervisors, 2 teachers, 2 school supervisors, 1 university teacher that is also an employer.

What are the positive aspects of the model/programme?

i. The quality and commitment of the stakeholders
ii. Cultural attitudes
iii. To match the purpose of the apprenticeship between schools, student and company.
iv. Mutual feed-back produces medium time effects that allows for mutual evolution also.

What are the main challenges of the model/programme?

i. Lack of guidance on the selection of the apprenticeships: some students refuse work offers because they want to keep studying and others do not finish the degree/training, because they have employment offers.
ii. In universities proximity to companies is not large, but in the (Polytechnic) schools the situation is different. When the proximity of fostered research benefits are perceived.
iii. Academics need to understand apprenticeship programmes: students are under a different level of pressure and their effort to work and carry on with studies must be put in value.
iv. The relation between apprentices and tutors/supervisors need to be improved in some cases too, when the effort made by the students is not fully understood.
v. Micro companies often tend to refuse apprenticeships because they realise they do have the time it takes to draw a work plan and support the apprentices nor to promote the students' self-confidence on their performance as they should.
vi. The main goal of an apprenticeship is to draw a plan and research on the subject, in order to create a product. So the students profile and the companies' goal need to be taken in consideration. It is a self-feeding process.
vii. Particular situations identified: where does the co supervision take place? Which level of confidentiality is involved? What timings are on the table?

What are the main policy suggestions? Can we settle periodical focus groups to discuss apprenticeships issues? How?

i. There are new publics in HE, also due to the HE short cycle programs (CTeSP), and they look for continuity in studying, but there are very few places open for the access of these publics. More NTS places at HE are needed, so political education and training strategies should be put to practice. Maybe to shorten that number in areas where a

"dead-end" employability exists, but to get an overview of market needs and guidance in order to greatly improve the skills - employment mismatch.

ii. Scholarships to study in continuity (following a degree that is line with/continues an initial VET training) are needed to cope with part-timework options and the consequent income loss.
iii. To effectively promote possibilities to study and work at the same time.
iv. From the companies' perspective, the cost-benefit relation often prevents the company to encourage or even allow/promote the workers further education, as it is identified that, after acquiring a higher qualification, the workers move to another company. The suggestion is to include in the work contract a "permanence clause" that commits the worker to a given time period in the company if parallel education is carried out with the job. Some companies finance the qualification and allow for study periods during working hour's schedules, and the worker commits to work for the company for a period of time at least equal to the qualification time length.
v. On the other hand, it is mandatory by law that companies promote at least 35h per year for education and training/up skilling/reskilling. However, often do not comply with this. Social dialogue and different/customised work profiles contracts are needed to overcome these situations.
vi. It is essential to clarify in written, if possible, the role of each supervisor (school and company) and to acknowledge it explicitly. In the case of school supervisors this can be done attributing more teaching time to the supervision activity and take into account the supervision hours when the teaching load is assigned. In the case of company supervisors/tutors/mentors need to have supervision training.
vii. Supervisors (company and school) must be assessed at least qualitatively, but also quantitatively, as is the practice in UA. Different types of supervision are at stake and face to face interviews with the Course Director (CD) are not valued, although the CD promote them in their very few available time to do it.
viii. Company supervisors should also be validated as such.
ix. Students'/apprentice's cultural and behavioural profiles should also be available.
x. Need of a Central Office that runs a pool of companies and their offer, and matches it with the school/student needs. Similar to what was done in UA with in-service teacher training. The UA' Apprenticeships Office is job oriented aiming to work market integration.
xi. Need to a periodical common reflection on the experience in order to improve it and move forward.

SPAIN

The Spanish national focus group took place on 5th July 2018 in the Complutense University of Madrid, in the Student's Rectorate Building, from 12:30 to 14:30 h.

Not taking into account four members of the ApprEnt team (3 UCM, 1 AEDHE), the following participants attended, adding up a total number of 15 people.

	Name	Institution / organization	Position
1	Juan José Juárez	Fundación Bertelsmann	Senior Project Manager
2	Juan Carlos Lauder	Fundación Bankia para la FP dual	Project Director
3	Carlos Ruano	Alianza para la FP Dual	Consultant for educational institutions
4	Eva García Cívico	Cámara de Comercio de Madrid	Responsible of VET and dual training programs
5	Javier Rayo	Universidad Politécnica de Madrid	Director of the continuing education area
6	Jorge Ortega	Universidad Complutense de Madrid	Secretary of the Permanente Education Center
7	Víctor Sardá	Technical School of Construction of the Politechnic University of Madrid	Director of student's and Institucional affairs
8	Ubaldo Cuesta	Universidad Complutense de Madrid	Director of the Master in Advertising Management
9	Carolina Gómez	Vía Célere	Worker
10	Mª del Val Fuerte	AEDHE	Training Director
11	Daniel Cuervo	ASPRIMA (Asociación Española de Promotores Inmobiliarios)	Managing Director

We had three types of participants:

- Academic managers: 4
- Workers: 1
- Managers in institutions devoted to the promotion of VET and dual training programs: 4
- SME Managers / workers: 2

The main objective of the focus group was to find ways of improving the apprenticeships system and the University-Business collaboration. The agenda of the meeting included 3 main points:

1) INTRODUCTION TO APPRENT

We used a PowerPoint presentation in Spanish that covered the main features of the project: institutions involved, main objectives, tasks that had been already accomplished, future steps, presentation of the definition of Apprenticeship, results of the preliminary national report on Spain on the different experiences of HE apprenticeships.

2) OVERVIEW OF THE FOUR CASE STUDIES

We briefly presented our case studies, highlighting its main features. Some of the participants in the focus group were part of the case studies, so they were familiar with some of them.

3) QUESTIONS FOR DISCUSSION

The following issues were tackled during the rest of the session. It is important to take into account that the translation into Spanish of the term "Apprenticeship" is not always very clear, since "aprendizaje" has a similar meaning than the term "learning", and does not necessarily refers to a model in which learning takes place outside the education institution. Therefore, we chose to explain the term and use instead "dual-learning experiences" or "dual-vet programs".

3.1) Is it really interesting to promote the experiences of dual training or learning? Positive aspects and main challenges.

There was a clear agreement that it is not only interesting, but also strategic, to promote apprenticeships schemes. Some of the keys that were identify to success implementing these programs are: clear regulation, involvement of the business sector (it is necessary a change of the Spanish business culture) and a clear involvement of business associations. One of the aspects that was addressed throughout the meeting was the need to continue advancing in the definition of dual training, as well as to identify if the practices carried out in companies are appropriate to the type of practice that corresponds to the dual system.

3.2) How can we improve collaboration between universities or educational centres and companies?

Regulatory level

Two aspects are acting at the same time in opposite directions:

a) On the one hand, a regulatory framework is necessary to guarantee the adequate learning process in companies, paying special attention to the contractual nature of the relationship and the adequate remuneration of the students.
b) On the other hand, flexibility is requested regarding the contractual relationship of the internship contract, taking into account that there is a great diversity of companies (SMEs, large corporations, etc.). In some cases, an agreement could be a better option. Flexibility is also suggested to promote innovation in the business world and achieve a better match between the degrees that are offered and the needs of the market.

Adequate planning of training programs

Participants addressed the need for a greater relationship between training and business and the necessity to include these dual programs in their strategic business plans. These plans should involve:

- Awareness strategies in companies and training centres, especially if they take into account cultural aspects such as the rejection of the university to professional training.
- Introduce training cycles of lower level in the university in order to better adapt the needs of the market and training.

Tutoring

This topic took most part of the debate, with different contributions:

- There is a need to recognize the work performed by tutors in companies and therefore, tutors should be trained and their work must be certified, since they do not receive any financial consideration.
- 16-hour courses are proposed. These courses could be organized partially face to face or totally online, due to the difficulty of the absence of tutors in their jobs in SMEs.
- There is also a strong need for coordination with academic tutors.
- It is crucial to implant an accreditation system of the tutors on the part of universities, in order to guarantee a quality system of apprenticeship. For the tutors it is also very interesting, since they can develop formative capacities beyond their professional knowledge.
- Business strategies should include continuous training as a key factor.
- The success of the tutoring resides in the fact that their direct relationship with students must be integrated in their daily tasks at the company.
- It is fundamental, in order to achieve an effective and successful apprenticeship system, that the communication between academic and business tutors must be fully fluid.
- Possibly the best trainer of a business tutor is the academic tutor himself.
- It is essential to sensitize companies about the relevance that trained tutors in their staff guarantee success of student internships and apprenticeships.
- Training courses for tutors suppose a great effort for the SMEs (on-line route would facilitate this fact)
- It is emphasized that a coordinated supervision is necessary between the educational centre and the one of practices. Currently only contacts are made to formalize / initiate the practices, and in case of any incident during its development.
- Another option that arises is to encourage academic activity by companies: refers to the involvement of company personnel in formal training.

3.3) Is the dual VET model exportable to the university context?

The higher level of VET must have its own space within the education system: either in the universities or in integrated dual VET centres that teach both the qualifications of the education system and the national employment system. However, at the university level there are important constraints:

- Public university structures in Spain are very rigid for the inclusion of these dual VET studies; on the other hand, private universities have a faster adaptation capacity and they have already begun offering these type of studies. However, there are interesting experiences in the public university sector in northern Spain. It is imperative to change the statutes of the universities for the teaching of dual- studies and increase investment in material and human resources in Spanish universities for that
- Since some type of VET studies that includes industrial contents require heavy investments, universities should focus in the areas that they are prepared for (such as the health or medical areas).
- A change of mentality in the public university is essential: training for employment has a low evaluation in the university environment. Universities need to allow a greater imbrication with the companies since the development of technical education obliges to it

- Associate professors with experience in the private sector are necessary (breaking with the current exclusive dedication) and University Knowledge Transfer Offices (OTRIs) must be strengthen.
- Increase public-private collaboration, sensitizing both parties to break mutual distrust. Business associations should be involved in the design of curricula and support the selection of professionals with skills to be trainers
- Improve the system of tax incentives and change financing mechanisms of the workers system of continuous training.
- Territorial RIS3 (Research and Innovation Strategies for smart specialisation) must become the axis to define the future needs of professionals and the necessary studies to train them.
- The success stories prove to be those of quality training oriented to employment.

3.4) How could the learning system be promoted in Spain / Europe? Suggestions for the formulation of public policies.

Participants came up with some interesting ideas:

- Publicize success stories
- Teachers must have experience in the private sector.
- Legislators (both national and territorial) must generate more flexible educational laws that provide a solution to the needs of better trained human resources (apprenticeships are essential).
- Change the funding model of universities increasing the participation of private sector.

ApprEnt

Refining HE Apprenticeships with Enterprises in Europe

The ApprEnt project has collected a total of 33 case studies on Higher Education Apprenticeship (HEA) programmes and the feedback from stakeholders attending 6 different country events. These materials have been compared and been the basis for the writing of some preliminary recommendations for policy makers, enterprises and higher education institutions.

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