

instruction

UPSKILLING SCHOOL TEACHERS FOR
EDUCATION-WORK TRANSITION



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Upskilling school teachers for education-work transition: A New Tutoring Model

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Abstract

The school-work transition in EU is facing a number of challenges and new approaches are required to update teachers' skills and empower students position themselves effectively into the world of work. This paper presents a novel tutoring model to support the transition from education to the world of work, as well as the lessons learned by its pilot implementation in five European schools. The proposed tutoring model consists of various components centred around skills and activities. A six-step methodology is also proposed putting the tutoring model into effect in real class scenarios. The tutoring model and its implementation methodology were pilot tested in five European schools engaging 20 teachers and 100 students in total. The pilot activities were assessed by 15 teachers and the findings were fairly positive, showing that the tutoring model is considered to have the potential to effectively support students while trying to find suitable professional opportunities and applying knowledge gained in the school.

I. Introduction

Global society is facing many major challenges today: unequal industrial and post-industrial development; poverty; population growth; pollution and degradation; equity; and gender disparity. In the absence of equal opportunities, these structural issues directly affect the social mobility of those with lower incomes and living conditions (Tikly and Barrett, 2011; Hanushek et al., 2017; Kis and Windisch, 2018).

Several studies have shown the effects of this labor market disruption in recent years; the Covid pandemic is only accelerating these transitions (WEF, 2020). The pandemic is speeding up job destruction and changing occupations, according to the WEF's recent Future of Jobs Report (2020): 43% of companies plan to reduce workforce, 34% to expand workforce for technological integrations, and 41% to expand contractors for task-specialized work. By 2025, machines will displace 85 million people, leaving 97 million job vacancies (green economy jobs, engineering, cloud computing, AI). The new normal will require more soft skills: critical thinking, problem solving, self-management, resilience, active learning, stress tolerance, flexibility. This "unknown future" (Mulder, 2017) includes the risks of automation in more sensitive sectors, as well as the destruction of jobs, as aimed by the Sustainable Development Goals (SDG). Professional skills can become obsolete due to constant change, so a growth mindset and a lifelong learning attitude become critical. New approaches to (technical) innovation, lifelong learning, internationalization, and literacy are needed, according to recent institutional and academic debates on VET. A stronger industrial-educational partnership is increasingly suggested.

To this extent, the great push towards work-based systems, including dual systems based on apprenticeship schemes, is based on the recognition that workplaces can serve as opportunities for both work and education. Workplace training can be viewed as a cultural heritage that the school can use to further its educational goals by combining classroom and workplace training. Similarly, training based on real-world tasks and challenges helps develop not only cognitive but also non-cognitive skills.

A stronger collaboration among stakeholders, namely the business and VET ecosystems, is a condition for a more coordinated development. To this end, it may be useful to encourage more regular convergence efforts between school (tutors and teachers) and business entities, focusing on both goals and evaluation criteria.



In addition to professional skills, future workers must develop personal capabilities (Nussbaum, 2011) to remain employable. Despite the policymakers' emphasis on work-based learning, it is not a panacea and requires specific conditions to be effective. Training students to “learn how to learn, constantly” requires strong commitment from key actors (companies, educators, teachers, and students), since the definition of the learning agreements behind any work-based experience.

The Instruction Project, funded by the Italian Erasmus+ Agency, gathers VET centres and schools from 5 countries to finalize a tutoring model, a training method and specific tools for:

- the facilitation of the transition from education and the world of work;
- strengthening the link between students and companies (matching);
- increasing the attractiveness and performance of the school system in relation with school-job transition;
- updating school teachers' skills and competences regarding the school-work transition;

This paper presents a novel tutoring model to support the transition from education to the world of work, as well as the lessons learned by its pilot implementation in five European schools. Our study aims at identifying opportunities, challenges and implications of utilizing a well-structured tutoring model to plan, run, monitor and assess internships/apprenticeships, in order to provide valuable insight to the scientific community, policymakers and all the other relevant stakeholders.

More in details, this paper, after an overview in terms of training needs assessment and, therefore, an analysis of needed trainers' competences, will introduce the emerged “Tutoring model” as an original proposal to the current competences gap. The training course on tutoring and the results of the pilot in different national context will be discussed and analysed. Main implications and conclusions, also in terms of policymaking, will follow.

II. Competences for VET teachers and Students

Soft skills, as stated previously, are a pathway to employability and prosperity, according to the 2016 EU Skills Agenda. People with good skills can get good jobs and be confident, active citizens. Expertise will determine competitiveness and ability to drive innovation in a rapidly changing global economy. They attract investment and help to create jobs and growth. They promote social cohesion”. And skilled workers outnumber unskilled workers in terms of employment and productivity. In addition to directly affecting work output, skills can influence productivity growth indirectly by promoting knowledge transfer and mobility between universities, research institutes, firms, industries, and countries. The accumulation of other productive inputs (e.g. physical capital, technology, or health) that in turn foster growth is a result of human capital.

Professional and personal development are positively correlated with non-cognitive skills (Heckman et al., 2014; Nussbaum, 2011). To empower people and promote true VET fullness, Gendron suggests developing emotional capital alongside academic and professional skills (2018).

To develop a growth mindset and reduce the risk of future social exclusion due to economic, cultural and psychological reasons, education (and training) should aim to empower learners to own their own agency (Nussbaum, 2011). Due to the multidimensionality of human



development, agency empowerment encompasses a broad range of capabilities. Individuals and groups can develop their own capabilities, but they can also learn from others' experiences and learn from others' mistakes (2019). It also highlights the importance of social-emotional learning and life skills in new values defined in current school system, accelerating the rethinking education process (curriculum, didactics, learning ecosystems).

To prepare teachers and trainers to change their teaching methodologies, update their knowledge, and develop a growth mindset, it is critical to prepare them for a paradigm shift in educational systems. Because of the market's constant changes, teachers in VET organizations often have practical experience in their areas of specialization (Hiim, 2015). Thus, educators must be supported in their lifelong learning and professional development activities. As well as training teachers in major qualitative and quantitative research methodologies, this new approach requires a new environment for education and training organizations. Because of the new competencies and the paradigm shift in teaching and training, new models are needed to meet the challenges of today.

III. The Tutoring Model

The creation of an appealing, contemporary, and flexible tutoring model for vocational teachers that focuses on the transition from education to employment is paramount. We focused on developing a new tutoring model that would empower students and help them find and effectively complete internships. The proposed tutoring model uses the Canadian taxonomy of skills/competences (2000). Skill-based qualification frameworks were first implemented in the Netherlands in the early 2000s. A universal answer to industrial relations and labor market changes is Skill/Competence. A skill is the ability to achieve specific goals and function effectively in a work/profession setting (Biemans et al., 2004). In a broader sense, a skill is the ability to complete a task. An effective job or situation requires a set of skills, commitments, knowledge, and attitudes.

The three skill categories considered in the proposed tutoring model include: social, personal, and methodological skills (see Fig. 1). Each skill has a Channel and Activity macroarea. Each Activity-Macroarea has its own set of attributes. Each skill can be related to multiple activities or macroareas, and each activity or macroarea can be related to multiple skills or skill areas. The proposed model's total skills (Social, Personal, and Methodological) describe the emerging Tutor profile.

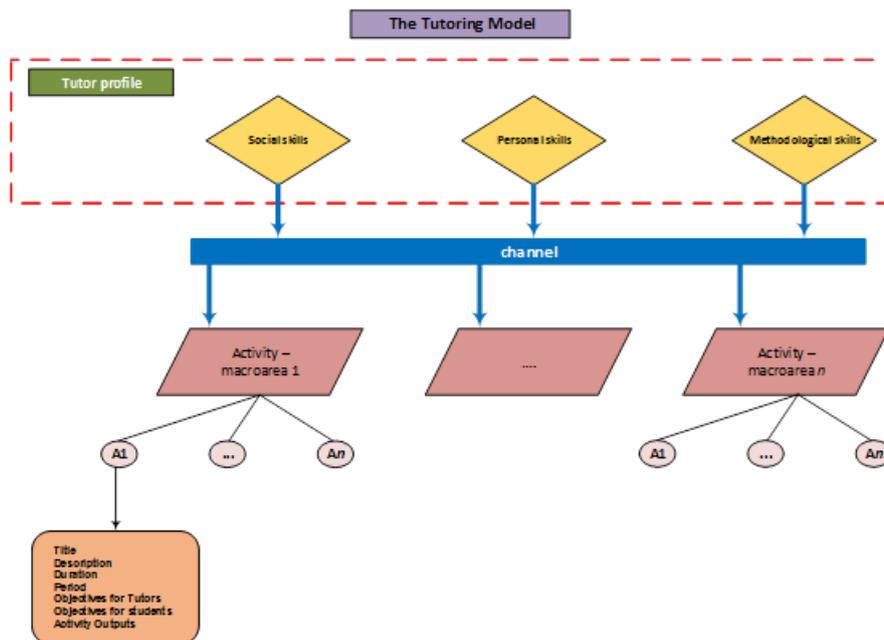


Figure 1. The Tutoring Model

Social skills (see Fig. 2) include a set of skills tutors must have to actively be engaged in today’s labour market and educate, train, and support their students in the same direction as well. These skills are not knowledge-dependent, and they are related to a person’s attitudes and intuitions. Social skills can be regarded as a set of skills that are necessary and common for all vocational specialties and professions, oriented towards a constantly changing professional and economic environment that requires flexible, adaptive, and initiative employers and employees.

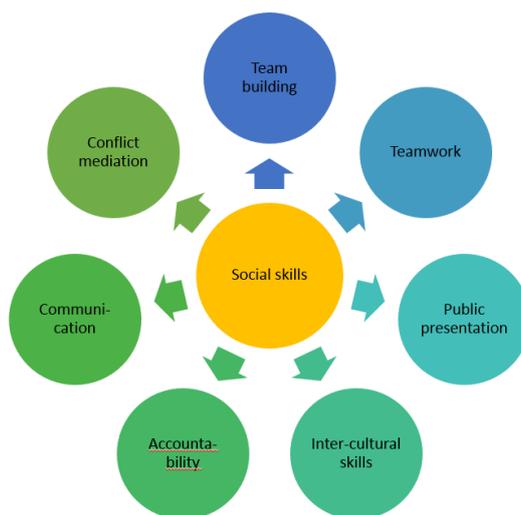


Figure 2. Social skills of the Tutoring Model

Personal skills are less related to specific qualifications, but rather regarded as personality-driven competences and skills. They comprise a crucial factor in promoting personal growth

and are related with overcoming challenges and difficulties. Personal skills, include skills such as the ones illustrated in Fig. 3.



Figure 3. Personal skills of the Tutoring Model

Finally, **methodological skills** include various skills, such as strategic planning, leadership, customer orientation, critical thinking, time management, working styles, collaboration and networking, analytical thinking, problem-solving and conflict management. Methodological skills are necessary and common for all vocational specialties and professions, oriented towards flexible and adaptive professional and economic environments.

The **channel** is an adaptable and flexible pathway where different set of specific skills connected to meet the needs of different Activity macroareas and Activities. Each Activity macroarea is consisted of Activities with specific attributes. Each skill can be related to more than one Activity or/and Activity macroarea and each Activity or/and Activity macroarea can be connected with more than one skill or/and skill area.

Activity macroareas are defined as the operational dimension of the tutoring model and consisted of more than one Activity. Activity macroareas are:

- Internship Progress (includes all the phases connected to the "personalization" of training and internship): Observation and Discussion, Planning, Communication, Ongoing Monitoring and Internship Closure.
- Training Units (includes the specific training units before-during-after internship related to the development of learners' skills during the job experience): Training Units for Internship, Ongoing Activities, Activities After the Internship

Activities are defined as the operational elements of the tutoring model. Activities are described with their attributes. These attributes are: Title, Description, Duration, Period (Before the Internship, During the Internship, After the Internship), Activity Objectives for Tutors, Activity Objectives for students, Activity Outputs

It has to be noted that every activity macroarea is linked with various skills which are deemed important for implementing respective activities. Table 1 provides an indicative non exhaustive list of these links.

Table 1: Activity macroareas and teachers' skills

Activity macroareas	Teachers' Skills
Observation and Discussion	Self-awareness Personal development Emotional intelligence Critical thinking Constant improvement
Planning	Conflict management Strategic Planning Time management Flexibility and adaptability Analytical thinking
Communication	Handling stress Emotional intelligence Strategic planning Leadership Inter-cultural skills
Ongoing Monitoring and Internship Closure	Accountability Public presentation Personal development Collaboration and networking Analytical thinking
Training Units:	Public presentation Handling stress Self-management Emotional intelligence Leadership

IV. Training the tutors – Tutoring model implementation methodology

Before applying the tutoring model, teachers had to be trained thoroughly on how to apply it. Therefore, a structured training approach has been developed to help the teachers to become competent with the model and prepare them for its implementation in real class settings. The teachers' training took place in November 2021 and followed a six-step process as depicted in Fig. 4. The training was mediated by a Moodle-based platform, which provided a repository of training material, forum functionalities for knowledge exchange, discussion and collaboration, as well as wikis and blogs to facilitate better understanding of the tutoring model's concepts. 20 teachers from five schools of five European countries (Italy, Portugal, Greece, Romania and Lithuania) participated in the training.

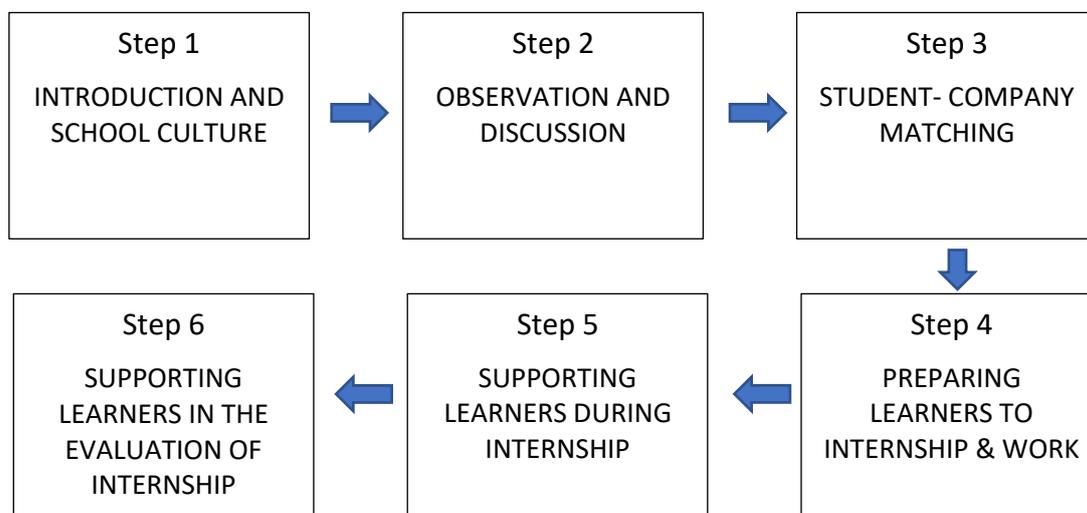


Figure 4. Teachers' training process

The training was characterized by the following activities:

- **Self-led training:** teachers accessed the platform independently and studied the material
- **Group work:** each school created a national group. Each group worked on specific exercises
- **Discussion and peer review:** after the completion of each module an online meeting between participants and tutors was organized to receive feedback on the exercises, deepen arguments, solve problems and questions.
- **Forum:** During the training course, participants used the online forum to make questions or comments.

The training introduced participants to innovative competences that helped them managing the application of the model. Furthermore, they managed to collaboratively evaluate the tutoring model and devise techniques for its applications.

V. Pilot implementation in schools

The pilot implementation in schools was realized in all five schools that participated in the teachers' training with four participating teachers from each school. In total, 100 students were engaged in the pilot activities (20 from each school). Initially, the teachers promoted the piloting activities to students and their families by presenting them the activities and time schedule and sharing promotional material. After promoting the training, each school carried out the piloting activities independently in February 2022, structuring a set of in classroom and extracurricular sessions to experiment the training and the skills, competences and tools acquired during the staff training. During the pilot, teachers made use of the online platform, where they shared their comments, problems, ideas and solutions regarding the piloting of the tutoring model. Based on difficulties arising due to the pandemic only the four steps could be implemented. Details of the implemented steps are described in the following.

Step 1: Teachers and students discussed the importance of the school culture during the students' education and how this can be important in their future professional life.

Step 2: During this session, teachers were able to understand the characteristics of the participants, collect and analyze them in order to project and plan learners' educational pathways.

Step 3: Teachers worked with the students using not only the tools presented on the teachers training but also other tools already used in our schools and that are able to promote a more precise student's company matching.

Step 4: Students were able to participate in creative activities to promote themselves, e.g. such as the development of a creative CV, improving the quality of their portfolio, preparing themselves on how to make contact with companies, prepare for an interview, etc.

V. Evaluation methodology

The evaluation of the educational activities was based on the following 3 dimensions

- quality of the training
- usefulness of the educational approach
- opinions of the teachers with respect to the learning process

For the needs of the evaluation we developed a survey questionnaire that consisted of 15 questions, as shown in table 2.

Table 2. Survey questionnaire

Quality of the training		
Q1	quality of materials	Likert scale
Q2	working methods	Likert scale
Q3	training efficacy	Likert scale
Q4	utility for the future	Likert scale
Q5	tutor performance	Likert scale
Usefulness of the educational approach		
Q6	Did you understand the concepts?	Likert scale
Q7	Have you used anything that you have learned?	Likert scale
Q8	How confident are you in applying what you have learned?	Likert scale
Q9	How much did the activities contribute to your personal development?	Likert scale
Q10	Were the training objectives met?	Likert scale
Q11	Was the students' feedback/ reaction positive?	Likert scale
Opinions of the teachers with respect to the learning process		
Q12	What was the most useful thing that you have learned?	Open-ended
Q13	Did the students react positively to the training sessions?	Open-ended
Q14	What difficulties did you encounter in carrying out the pilot?	Open-ended
Q15	Other comments	Open-ended

Participants were asked to rate the survey items from Q1 to Q11 using a 5-point Likert scale, where each point of the scale stands for a specific level of agreement with the statements ranging from 1 (poor) to 5 (excellent). Questions Q12 to Q15 were open-ended giving us the opportunity to obtain qualitative feedback to complement the quantitative data obtained by the previous questions. The survey questionnaire was provided via Google forms and was answered by 15 participants.

VI. Evaluation results

The first set of questions addressing the “quality of the training” dimension concerned the level of appreciation for different parts of the piloting activities: quality of materials, working methods, training efficacy, utility for the future and tutor performance. The results are shown in Figs 5 and 6 showing that teachers were very satisfied with all of the activities. All participants found the quality of materials as very good or excellent, while 14 out of 15 (93,3%) rated all remaining statements as very good or excellent

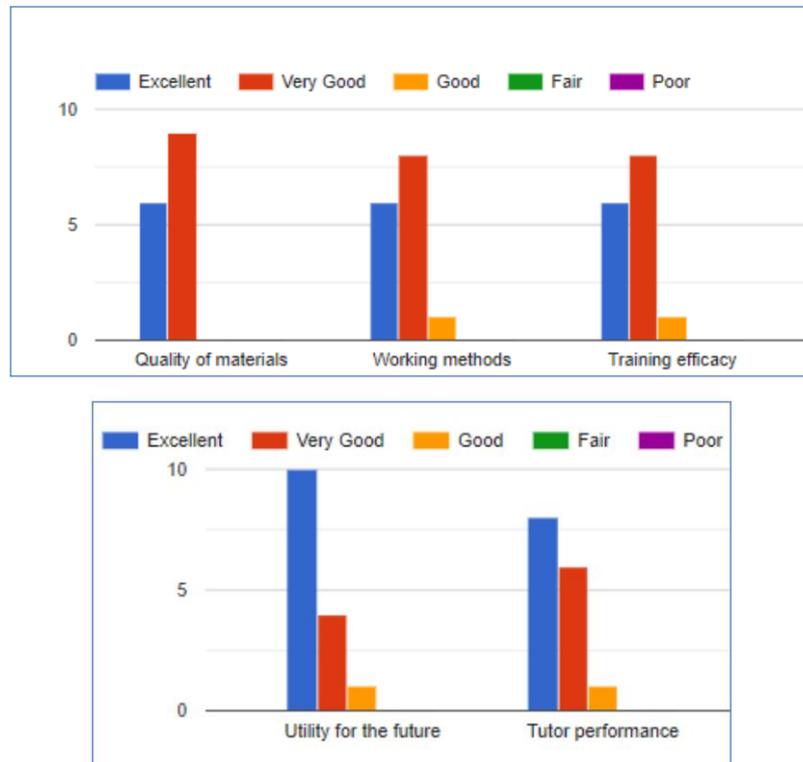


Figure 6. Responses to questions concerning the quality of training

As it may be observed from Fig. 7, the positive opinions in all the statements related to the usefulness of the educational approach are also quite high. More than 90% participants appreciated the piloting activities, as we can see in the charts bellow. Almost all participants (14 out of 15) understood the taught concepts, while 80% managed to actually use what they have learned. However, only 66,7% felt confident to used what they have learned in the future. The gamification elements of the supporting platform were rated as positive by 73,3% of the participants and 80% of them agreed that the piloting activities contributed to their personal developments.

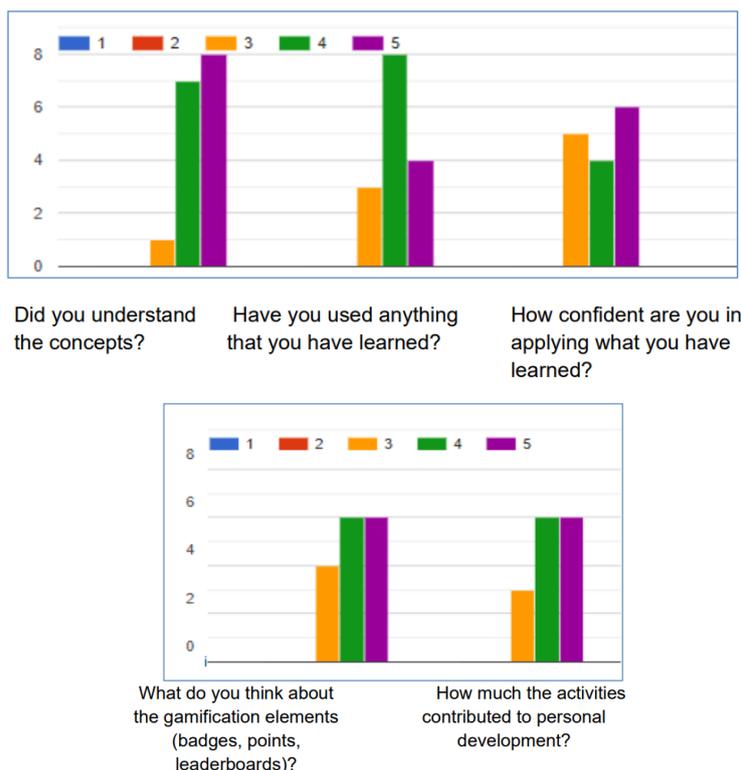


Figure 6. Responses to questions concerning the usefulness of the educational approach

The third group of questions aimed at unveiling personal considerations with respect to the learning process, which could be aggregated to synthesize concrete views about the pilot program. Regarding the most useful thing that the participants learned, the answers vary from techniques to engage students to how to support them in interviews and CV making. Some indicative answers are from P3 *“We learned how and what tools to use to better understand students and their competencies, how to organize such activities.”* and P11 *“For me, it was a novelty that I was able to test with students, improving my competencies and skills in career development. I deepened my competencies, communication skills with students who are already thinking about the future profession, I had the opportunity to provide them with knowledge acquired during teaching.”*

All participants responded positively in the question concerning students’ reaction to the training sessions. Students felt being more informed and they better understood the purpose and the activities of the different steps of the internship/apprenticeship. Two participants described a feeling of security that was developed in students as they received adequate support and guidance especially during preparation (first three steps of the tutoring model implementation method). The main difficulties encountered during the pilot referred to lack of time for teachers, as its duration and workload were considered high. Moreover, taking into account the amount of students schools typically have, a challenging issue was raised regarding the number of students a school-work transition specialist could supervise and whether he/she would suffice to address the needs of all students.

VII. Discussion and concluding remarks

This paper presented a novel tutoring model for upgrading the skills of school teachers to support the transition from education at work. The tutoring model was translated in a six-step



implementation methodology, which was piloted at five European schools with the participation of 20 teachers and 100 students. The results of the pilot activities evaluation are quite promising, showing that the tutoring model is considered to have the potential to effectively support students while trying to find suitable professional opportunities and applying knowledge gained in the school.

Creating an internship workflow and streamlining the activities to achieve an effective transition from education to work is multifaceted and complex. Several aspects of the developed model can be very useful for supporting different parts and requirements of an internship process. For instance, the tutoring model's activity areas could provide the backbone of internship activities regardless of local and regional specificities, while the tutoring model's competences could serve as a reference point for creating training programs.

The proposed tutoring model could serve as the basis for creating a common internship/apprenticeship framework. Although they already schools may have their processes well in place, many of the methodologies supported by the tutoring model can be implemented in their school in the future. Probably the strongest potential of exploiting the proposed tutoring model lies in the need to develop training programs for tutors that will support the internship/apprenticeship process. The focus should be on the required competences and training material should be developed and adapted with the ultimate objective of building the required skill set of tutors. Such tutors, should not only be competent in the field of career education, but should possess several transversal/soft skills, such as empathy, communication and cooperation skills. It is recommended that:

- An institutionalized training model should be created by the state through educational providers, such as universities, that will include targeted training (e.g in adult education, monitoring of business programs, monitoring of programs for the psychology of human resources etc.) so that the trainers can then properly prepare students not only in the cognitive field (hard skills) but also in the soft skills they must have when entering the labor market.
- There should be training by business people so that the internship trainer knows the needs of the labor market in order to properly guide the students in their transition to the labor market.

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