

VIRTUAL INTERNSHIPS IN VOCATIONAL EDUCATION AND TRAINING

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Abstract— The main goal of this paper is to provide a model for creating virtual internships in order to improve youth employability and help with their transition from education to employment through internship exercises using ICT. The main suggested channel to conduct this is through an online platform that can provide the necessary information, materials and documents to create a virtual internship and monitor it step by step from its creation to the final evaluation. Students, their teachers, and mentors from companies during the internship can perform and monitor activities envisaged by the plan and the program of the internship. Apart from the segment dedicated to the tasks and activities, students communicate with their teachers and mentors through various communication channels within the platform, but also use the lessons and materials from the platform.

I. INTRODUCTION

International internships are gaining more importance in the context of internationalization of higher education and globalization of our professional world. Traditional international internships or even internships in different cities within the same country, where the learner has to travel are not always feasible because of financial, geographical, social or other reasons (e.g. disability, social exclusion, legal constraints, etc.). There are plenty of difficulties to overcome, starting from those related to the lack of communication between the learner, the company and the institution of higher education. In order to solve this, virtual internships (mobility) is defined as “a set of ICT supported activities that realize or facilitate international, collaborative experiences in a context of teaching and/or learning [1]. This can be used to support physical internships (blended) or to realize the entire internship online (virtual). One of the main channels that can be useful for conducting an internship experience through ICT is an on-line platform that can provide the necessary information, material and documents to put in place a virtual internship. This platform would be used to monitor the virtual internship step by step from its plans to evaluation.

Many educators, employers and students are not familiar with this form of internship or they do not recognize the value or learning benefits of such internships. These sorts of virtual internships are often considered as less valuable than actual internships that require presence on site of an organization. This has built a negative perception of virtual internships in general. In some fields, virtual internships are the best and most

affordable solutions for people who want to gain experience (e.g., marketing, branding, software design, programming, website design, graphics design etc.). However, due to the lack of familiarity and experience of many educators, these sorts of projects get poorly executed or they do not get executed at all. This creates opportunities for small to medium size companies to include virtual interns to develop their customer databases, parts of their website (or a whole website), create marketing materials and so on.

However, it is necessary to point out that fully virtual internships are not feasible in all study fields. For example, most manual professions (carpentry, health services, metallurgy etc.). Due to the way these internships work it is not possible to achieve the required learning goals of the internship through virtual activities. There is also the challenge of accreditation of the virtual experience in the country that it has taken place together with the possible extra work load caused by the required detailed preparation of a full virtual internship.

Teaching staff may be resistant to the use of ICT, which is why planning a virtual internship needs to take into accounts the setting up of workshops, or similar training activities, to familiarize everyone with the tools and the platform that will be used for the virtual internships.

Recognition of virtual internships in a specific country could be problematic due to the diversity of common standards of recognition in the educational department. There is also the issue of certain documents/agreements that are put in place for minors etc.

In order for an international virtual internship to be successful it will be necessary to have a intermediate knowledge of, at least the English language, if not the local one by all the actors involved in the virtual internship.

II. THE STATE OF VET - SERBIA

The Ministry of Education, Science and Technological Development is the key institution for education, including VET, in Serbia. It works on issues including educational planning, research and quality assurance [2]. The Council for VET and Adult Education, composed of the representatives of stakeholders in VET, is an advisory body involved in pre-university VET, specialist and craft education, adult education, work-based education, and vocational training. The Law defines the Council's responsibilities as monitoring and analyzing the state of the mentioned segments of the education system and proposing measures of improvement. The Institute for

Improvement and Education and the Institute for Education Quality and Evaluation are the Ministry's partner institutions giving expertise in curricula and qualifications developments as well as the evaluation of learning outcomes and final examinations in VET.

The initial VET system in Serbia offers three and four-year upper secondary programs through which students are being prepared for the labor market. A curriculum for vocational schools is different for every field of study, however, one part of each vocational school curriculum coincides with the general education curriculum while the rest is specifically designed for each separate field of study. All students take the final graduation exam i.e. certification exam at the end of their schooling.

The Law on National Qualifications Framework adopted in April of 2018, established the comprehensive National Qualifications Framework for lifelong learning in Serbia. The National Qualifications Framework of Serbia has 8 levels and it is planned to be cross-referenced with the European Qualifications Framework. It includes all levels and types of qualifications, regardless of age in which they are acquired and the method of acquiring them (via formal or informal education, such as life or work experience).

In the school year of 2015/2016, 189 084 students were enrolled in upper secondary VET programs. Approximately 80% of the VET students follow a four-year program. VET students represented nearly 75% of the total enrolment in upper secondary education. VET programs are offered in 327 upper-secondary school, 74 programs with a duration of three years and 112 programs with a duration of four years [2].

The issue in Serbia is that the computers are generally very old and maintenance is poor. Only 20% of computers are three years old or less, while 40% of computers are between three and eight years old and 40% are eight years old or more. More than 15% of schools do not maintain and update their computers at all. On average there is one computer for every 8.8 VET students. In total, 95% of VET schools have internet access and two thirds of them have an internet speed that varies from 2 Mbps up to 16 Mbps. Most schools do not have internet safety or a Bring Your Own Device policy. Only 5% of schools have developed or used some kind of learning management system.

The Strategy for Education Development in Serbia 2020 highlights the role of ICT in raising the quality of teaching and learning at all levels of education. The National Education Council created guidelines for increasing the use of ICT in education in Serbia.

The initial practical training in VET is mostly conducted in VET schools in workshops, laboratories or classrooms. Practical training consists of predetermined number of classes which varies depending on the education profile the student is attending. There is practical training conducted outside of the school itself which is typically organized continually through block schedules. When students attend block schedules, they do not attend other classes, they only complete practical training within the school or company. The compulsory work-based learning that occurs through doing work in a real work environment is relatively rarely present in vocational education programs although non-compulsory work-based learning is common in a substantial number of VET programs. Dual education profiles i.e. apprenticeship

have been recently introduced in Serbia and are gaining popularity.

Students that are enrolled in work-based programs in VET usually learn two or three days per week at a company in their second and third year. Twenty-two of three-year programs and thirty-seven of four-year programs have been reformed and are based on qualification standards. Assessment procedures, tools and criteria have been developed and are used during the final examinations. Practical training is a part of all VET programs, however only three of the three-year programs have a compulsory Work Based Learning component with a workload ranging from 776 to 1200 hours. Students enrolled in these programs typically learn two or three days per week at a workplace in their second and third years [2].

Training in-company trainers is not mandatory and no regular public funds are earmarked for the training of company trainers. The Chamber of Commerce organizes training activities for company trainers independently from the state in cooperation with established training centers or within the companies themselves. Some employers run their own training programs, both for employees and trainers, independently from schools and other institutions, and they have their own criteria and standards.

At the moment virtual internships in VET are not carried out. However, there are some examples of computer technology being used in the process of practical training. Some educational institutions have set up virtual laboratories and virtual classrooms.

III. DEFINITIONS AND COMMON FRAMES

According to the EU-VIP project partnership, virtual internships can be described as "a set of ICT (Information and Communication Technology) supported activities that realize or facilitate international, collaborative experiences in a context of teaching and/or learning"[3]. *Type sizes and typefaces*: Follow the type sizes specified in Table I. As an aid in gauging type size, 1 point is about 0.35 mm. The size of the lowercase letter "j" will give the point size. Times New Roman is the preferred font.

It comes out clearly that ICT related skills can be identified as the central core of a virtual internship. They are required for any type of virtual internship and students interested should at least possess an intermediate level of knowledge of ICT related skills such as basic knowledge of computers, productivity software, electronic communication skills, internet skills, etc.

From this, two types of virtual internships can be identified:

- Fully virtual internships that are completely done in an on-line environment, starting from the preparation phase all the way until the final evaluation and assessment of the virtual internship.
- Blended virtual internships where on-line virtual experiences are implemented with occasional or temporary visits to the company which provides the internship.

The European Credit System for Vocational Education and Training - ECVET structures the learning outcomes into three separate levels and defines them as follows [4]:

- Knowledge – means the outcome of the assimilation of information through learning. Knowledge is the body of fact, principles, theories and practices that is related to a field of study or work.
- Skills – means the ability to apply knowledge and know-how to complete tasks and solve problems.
- Competence – means the proven ability to use knowledge, skills and personal, social and methodological abilities in study or work situations and in professional and personal development.

In education, a learning outcome is a specification of what a student should learn as the result of a period of specified and supported study. The learning activity could be a course, a module or an entire program. Learning outcomes can help guide students in their learning by explaining what is expected of them. They also help teaching staff focus on exactly what they want students to achieve in terms of knowledge, understanding and skills which helps defining the assessment criteria more effectively. This also provides a useful guide to potential employers about the general knowledge, skills and understanding that a graduate will possess.

In the Higher Education System learning outcomes are listed on the so called “Diploma Supplement” in order to give potential employers a clearer overview of knowledge, skills and competences a student has acquired which may also serve as a guide in terms of which areas require further development.

In order for VET schools to launch a valid and recognized virtual internship program they need to start from consolidated pedagogical foundations. A virtual internship should be planned by the schools when real learning outcomes can be provided within the virtual internship experience offered by a company.

IV. ACTORS AND RECOMMENDATIONS

The virtual internship envisions three roles- the VET school, the company and the VET student.

When a school decides they wish to set up a virtual internship, especially in the case regarding Mentors from the Company and VET students, it is necessary to understand why they should choose this framework. Some of the main advantages are:

- Confident atmosphere;
- Flexible conduction of supportive sessions;
- No geographical or time constraints;
- Cost efficient – no transport costs;
- No environmental barriers;
- No third parties can disrupt the internship;
- People with disabilities may work from the comfort of their homes and have no need for a personal assistance in most cases;
- New ICT skills acquired by all parties involved.

The introduction of virtually supported coaching, mentoring and peer feedback or group work that the virtual exchanges provide can contribute to an overall enhancement of the learning experience being offered. So, before starting a virtual internship there are some steps that are suggested. The staff should get plenty of time to practice with the chosen ICT infrastructure in order to build up competence before beginning the virtual

internship. There should be a few samples and examples so that the staff can know what to expect. Providing a well serviced help desk well before the virtual internship is critical, this means that all the initial problems will be ironed out immediately.

The teaching staff should pay attention and play flexible roles. In some cases, the staff may need to involve themselves both as the teacher and as the mentor. The teacher role should be the mediator and inspirer, as well as a consultant. When it comes to planning the virtual activities the teaching staff chosen may need help in making the shift from classroom teaching to the tutoring role required in virtual internships.

The students themselves should behave similar to other learning apprenticeships and should have actual work. It is very important for them to be responsible and dedicated to the given assignments for the duration of the internship. Students will usually work in groups and within these groups take on various roles and responsibilities. Students need to work in a business-like manner and be able to present themselves to potential assignment collaborators in an appropriate way, so they should also have some sort of introduction in some form. While the teaching staff has an important role, it is important that groups are self-organizing and self-aware. Career guidance and counselling activities could help in preparation of the VET students for their virtual internship.

Team assessment is important and should be a part of the overall evaluation of success of a student’s internship. The roles and responsibilities, teamwork and management should all be important aspects of a virtual internship.

Knowing the student’s strengths could prove useful as it will peak their interests and open the door to increased effort. Also, remember to have some fun, constantly working is tiring and will make sure that the student become unengaged. Rewarding the students is crucial, hard work should always come with a celebration. Students are likely coming to the company with big ideas, goals and openness to learning. This means their input should be recognized and rewarded for what they accomplish through their time at the company.

The students themselves gain benefits from virtual internships such as practical advice, encouragement and support, self-confidence, sense of empowerment, interpersonal skills and developed strategies for dealing with personal issues, an established sense of direction, insight into the world of work and exploring career options. This could also lead to further development of social skills and the students creating some professional contacts.

V. THE PLATFORM

The platform for Virtual internship is an online platform that supports all of the virtual internship needs in terms of communication and activity support. The platform is playing a supportive role as it needs to facilitate the kind of activity in which companies, schools and students are involved. It should be an on-line infrastructure that replaces traditional face to face activities by those supported by Information and Communication Technologies. This means that face to face meetings are replaced by synchronous video and audio conferencing and asynchronous, one on one or one to many, electronic messaging.

There are some essential points that need to be taken into account:

- Accessibility - Choosing a technology that is accessible to all parties involved. Some companies use their own systems and platforms, such as Office 365, and they might be willing to open those up to users from outside of the company, in this case, students and teachers.
- Usability - Choose a technology that is user friendly and reliable. Also, it is recommended that all stakeholders have a stable internet connection.
- E-literacy - Preferably work with tools already known to the actors involved. If this is not the case, making sure all the actors learn to use these tools, provide training if possible.
- Test and support - Testing the tools beforehand and making sure that everyone involved knows who to turn to in case of technical difficulties.

Synchronous tools allow communication between users at the same time while asynchronous tools allow for communication independent of time which tends to be more effective, in some cases, as it gives time to formulate opinions and other information in a structural way. These tools create a feeling of decreased distance between the users.

The internship catalog lists all of the internships available on the platform, which were previously created by the companies or the schools “Fig. 1”.

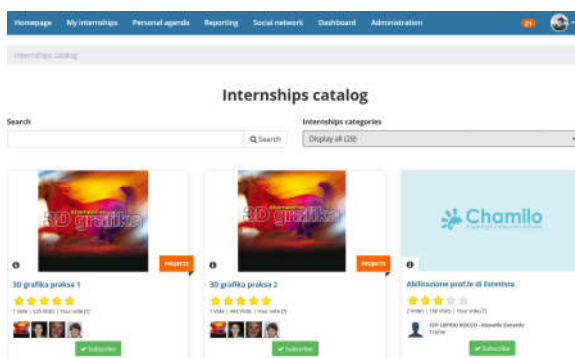


Figure 1. Internship catalog on the platform

Each user has their own profile with a profile picture, description, contact info etc., similar to social media, they may search for other users and groups “Fig. 2”.

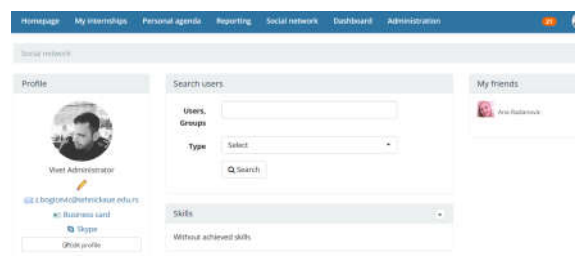


Figure 2. User profiles

VI. CONCLUSION

The potential of virtual internships available for students enrolled in a VET environment has not been fully explored. This is a great opportunity for people with disabilities and those with geographical, financial, social or other difficulties, due to which they cannot undertake a complete national or international internship or simply cannot attend for a long period of time. A virtual environment is a place where the distance can be shortened and if done correctly it could provide a natural feeling of cooperation. The students themselves will get an enhanced experience which could improve their CV's.

The blended model could prove to be the most used one as it allows for a partial virtual experience and will save costs and time when it comes to the school and the companies. For example, a metallurgy student could complete an entire “safety at work” internship before coming to the company, this ensures that all students are aware of the dangers in said company, it saves time for company employees teaching them face to face about something crucial before coming to the company itself. Another example would be graphics design students who could complete their projects on-line using the virtual internship platform and at the end of their projects they would go to the printing company and see their projects come to life.

The Virtual Internship can be successful if the school and the company mentors guarantee an appropriate level of tutoring for the students, the ICT structure is familiar to everyone, the content is relevant and peer communication and exchange is guaranteed.

ACKNOWLEDGMENT

The research presented in this paper is realized by the „Virtual internships for Vocational Education and Training“, 2017-1-RS01-KA202-000192, Erasmus+ project financed by the EU.

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