

Иновативен подход за провеждане на транснационални виртуални стажове в сферата на висшето образование

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An innovative approach for holding transnational virtual internships in the field of higher education

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Abstract:

The emerging pandemic situation forces humanity to change the way it functions in order to cope with the restrictions imposed in order to limit the spread of the infection. More and more activities are getting optimized in order to allow them to be carried out remotely and contactless. Changes have also taken place in the field of higher education, with the course content completely redesigned to work in an online environment. This ensures that the emerging environment will not interrupt the learning process. But an invariable part of the learning process in the field of higher education are the student internships. Participation in them develops skills and builds competences in the students that make them competitive in the labour market.

This paper presents an innovative approach for online student internships in several different areas of higher education, which will ensure that students have the opportunity to build the full range of qualities and skills that the higher education can offer to them, despite the pandemic situation.

Keywords: virtual internships, European Projects, international cooperation, online platforms

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INTRODUCTION

The concept of work-based learning, under the form of internships, apprenticeships or practices, is a highly efficient educational method. It is aimed at the development of actual skills and is providing the students with hands-on practical experience in real working environments. Initially considered only as a complement to the academic programs, student internships have slowly proven their usefulness for the higher education systems and for the practical training of the students [1]. Nowadays, all forms of work-based learning are actively recommended by many universities and some institutions are even considering them as mandatory for the completion of certain academic programs [2].

In terms of the implementation of the internships – they provide structured and applied learning through practical experience gained in different government, non-government or non-profit organizations, business institutions and companies. The internship activities are characterised by well-defined learning goals and outcomes, which after completion are academically recognized and grant scores or certain amount of ECTS credits to the students. To guarantee the recognition of the internships, they are conducted under the supervision of university lecturers or other members of the academic staff with significant practical experience and background in the corresponding study area.

Following the global spread of COVID-19 and the mandatory restrictions imposed by many countries in the first half of 2020, humanity had to quickly adapt and face the challenges of the pandemic. To answer the challenges of this unprecedented global event, many universities have slowly transitioned to remote work and teaching. Some of these institutions had previous experience with either synchronous, asynchronous or hybrid online course delivery, while the rest had to quickly adapt and introduce full or partial online learning.

While these solutions were sufficient for the general teaching and learning processes in the academic institutions, one aspect of the education process was initially left untouched by the online transition – the internships. Various studies [3, 4, 5] show that between 35% and 50% of the planned student internships, on a worldwide scale, were impacted by the COVID-19 pandemic and were either delayed, postponed or cancelled. This situation caused a sudden rapid demand for virtual internships and led to the identification of a new set of challenges. Many virtual internships are offered by companies and organizations, which are outside of the educational domain. This makes them incompatible with the accredited educational programmes and they are often not accepted and acknowledged by the universities. Another challenge is the paid offering of virtual internships by some organizations, which puts additional financial burden on the students. Last, but not least, virtual internships are often offered in limited areas, mainly covering subjects related to information and communication technologies, computer systems and programming.

In the second half of 2020, a consortium of higher education institutions and business organisations from Greece, Serbia and Bulgaria was formed with the aim to analyse the situation with the offering and the delivery of virtual internships in the three target countries and to find suitable solutions to some of the abovementioned problems. The goal of this consortium was to develop and implement a pilot initiative for conducting transnational online internships in the area of professional higher education. This idea led to the development of Project 2020-1-RS01-KA226-HE-094527 Digital Internship Model for Higher Professional Studies – DIMPS [6], which was funded and implemented under the Erasmus+ programme of the European Union. The project consortium was led by the Western Serbia Academy of Applied Sciences from Serbia [7] and included as partners the University of West Attica [8] from Greece, the University of Ruse "Angel Kanchev" [9] from Bulgaria and the Higher Education Technical School for Professional Studies [10] from Serbia. More than a dozen companies and business representatives were associated to the project as internship providers [11].

The initial goal of Project DIMPS was to analyse the best practices for delivering internships in the professional higher education domain in the three target countries, as well as in Europe and abroad, and to define the needs and requirements for the successful organization and implementation of national and international work-based learning activities. Based on this analysis, the consortium of the project developed three intellectual products – a generalized model for the organization and delivery of digital internships (Fig. 1), an online platform for delivery of the internships and a set of toolkits, which contain support information and guidelines for the use of the internship platform by students, mentors and academic supervisors. The development of the intellectual outputs was followed by a pilot initiative for organization and implementation of virtual internships in several different higher education study domains.

GENERALIZED MODEL FOR ORGANIZATION AND IMPLEMENTATION OF DIGITAL INTERNSHIPS

In the professional higher education, the internships are usually part of the curricula and are requirement for the program completion. They are related to specific disciplines and are performed in exchange for academic credits that are granted following the submission of proofs of completion – internship reports, confirmations by the internship providers, demonstrations of the internship results, etc.

The internships in the HEIs are characterised based on five main criteria:

- Timeframe of the internship – the internships are divided into semestrial internships, quarterly internships, summer, fall or spring internships;
- Type of the internship – outlines the correlation between the study programs, the work-based learning activities and the different business activities of the providers;
- Compulsoriness of the internship – the activities can be either mandatory, which means that they are required for the completion of the study program, or voluntary, which means that the internships are not required for the completion of the study program, but can have a positive impact on the trainees;
- Cost of the internship – this parameter covers the financial aspects of the internships, considering both the financial losses and gains for the students;
- Implementation of the internship – the internships are split into classical in-person/physical internships and virtual internships, with the latter ones being usually implemented online and using the means provided by the modern ICT.

The benefits of virtual internships are clearly identified and discussed in many studies [2, 4, 12, 13, 14]. These benefits are categorized and summarized in Table 1.

Table 1. Benefits Of The Virtual Internships for the corresponding target groups

Target Groups		
	Academic institutions and students	Internship providers and companies
Benefits	<ul style="list-style-type: none"> • Integration of work activities and study programs • Flexibility of the internships in terms of time and space • Support and engagement of students with disabilities • Combine studies, work & social life • Ensures regional mobility without the need to travel • Provides means to learn about cultural differences • Provides a way to gain new competencies and skills • Helps build business-academia partnerships 	<ul style="list-style-type: none"> • Financial benefits and higher productivity • Overcomes the expensive space limitations and needs • No geographical relocation of workers is needed • The labor supply dependency is reduced • Virtual internships overcome time limitations • Reduces the inefficiency of workers • Shorter and less expensive leaves for the staff

Based on the Best Practice analysis for the available virtual internship solutions in Bulgaria, Serbia and Greece, which was developed under the DIMPS project, and

considering the benefits of the virtual internships presented in the previous table, as well as the internship characteristics, which were identified and presented above, the consortium of the DIMPS project has developed a generalized model for implementation of virtual student internships (Fig. 1).

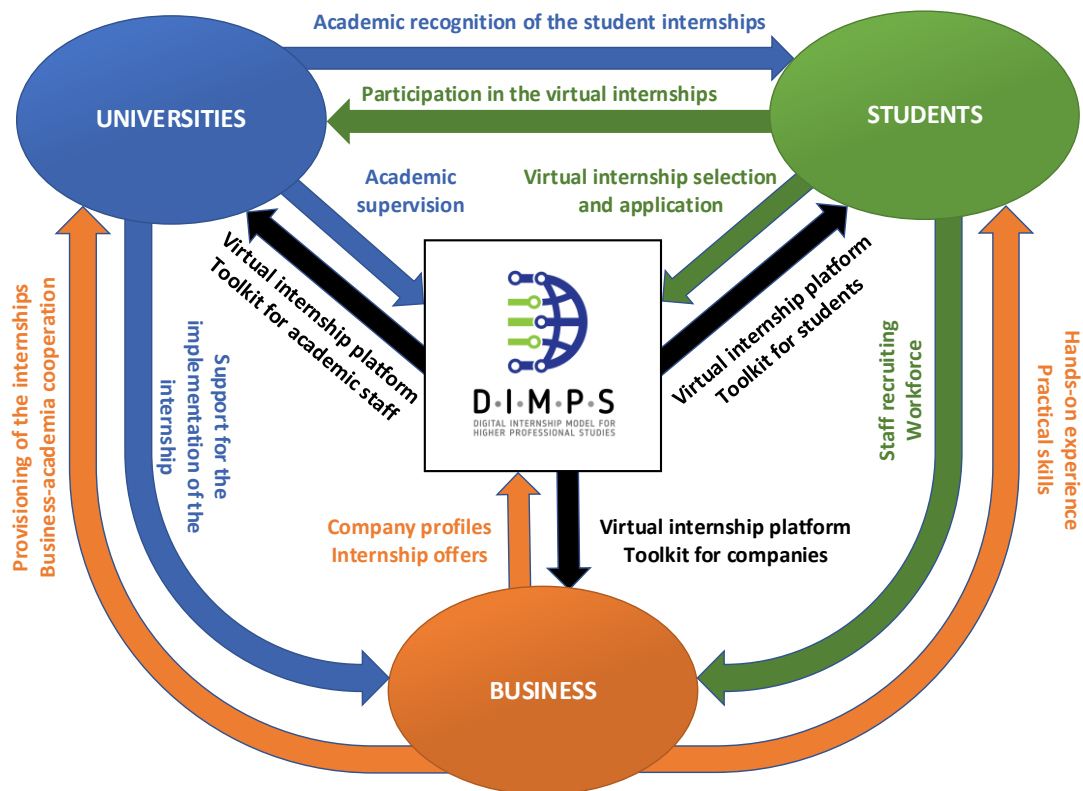


Fig. 1. The digital internships model that was developed, implemented and evaluated under the DIMPS project

As evident from Fig. 1, the links between the academic institutions, the students and the business organizations can be improved by tools and platforms, which can act as medium for the smoother implementation of the virtual internships.

EVALUATION OF THE DEVELOPED MODEL AND RESULTS FROM THE PILOT IMPLEMENTATION OF THE VIRTUAL INTERNSHIPS

To evaluate the developed model and to confirm its efficiency and usability, the consortium of the DIMPS project developed a special online platform (Fig. 2) [15], which is based on a highly modified version of the Chamilo learning management system [16].

Further to this, a set of three toolkits was developed and provided to the internship participants from the corresponding target groups. These toolkits provide useful guides and step-by-step instructions to the students, to the internship mentors from the industry and to the academic staff about all processes and activities related to the organization, implementation and evaluation of the virtual internships using the developed platform.

The developed model for digital internships, the platform and the toolkits were presented and demonstrated during several national workshops and in meetings with business organizations from Bulgaria, Greece and Romania. Following this, more than a dozen companies volunteered to be associated to the project consortium and to act as internship providers for the pilot implementation and evaluation of the virtual

internships. These companies and organizations have their main areas of operation in different sectors, including the pharmaceutical, tourism, telecommunications, information technologies, electronics manufacturing, travel and accommodation and other sectors.

The diversity of the provided internships is a clear indication about the high demand for virtual internships in all sectors of the economy and the readiness of the business to explore this new opportunity and its benefits.

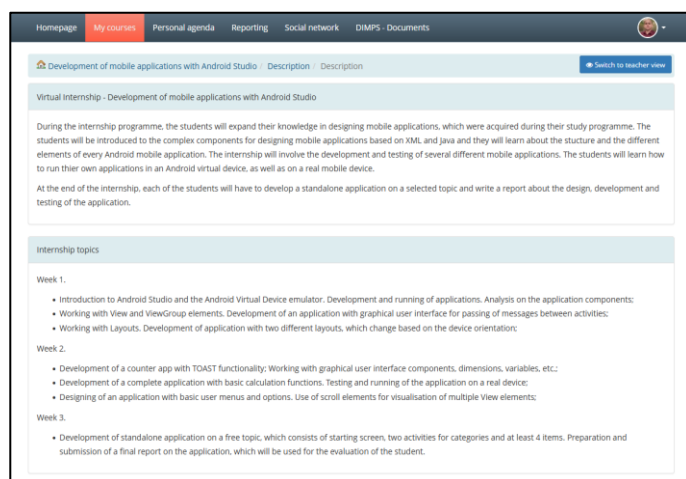
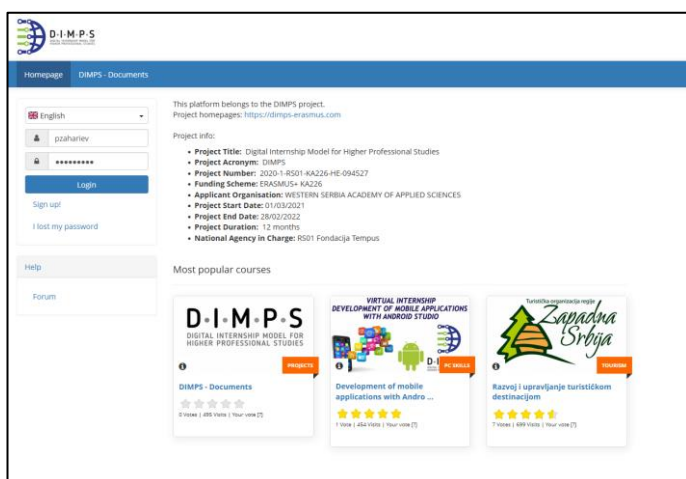


Fig. 2. The title page of the DIMPS platform and the title page for one of the offered virtual internships

The pilot implementation of the virtual internships took place in the period between October and December 2021. A total of 22 students from Serbia have volunteered to participate in the pilot initiative. The topics, which were selected by the students, were in the areas of software engineering, tourism, management and information and communication technologies. The results from the implemented internships are presented in Table 2 below.

Table 2. Results of the implemented pilot internships

	Number of students	% of the total
Total applicants	22	100%
Completed internships	21	95%
Failed internships	1	5%
Software engineering related internships	3	14%
Tourism related internships	14	64%
Management related internships	1	5%
ICT related internships	4	18%
Transnational internships in ICT	4	18%
Transnational internships in Tourism	1	5%
Total transnational internships	5	23%

One of the main advantages of the developed model, which is also confirmed by the results from the pilot implementation of the internships, is the elimination of the geographical restrictions. Despite the language barriers, which are still the main obstacle for transnational exchange, 23% of the pilot internships were held by the Serbian students in companies from Bulgaria and Greece. This shows the huge potential of the

model and presents the opportunity for multiplication of the activities and use of the corresponding project outputs by including educational institutions and business organisations from other countries.

Another interesting result from the pilot implementation of the internships is the percentage of the ICT related activities. Unlike the results from other studies [2, 4, 13, 14], just 32% of the students from the pilot test group have selected topics related to software engineering or ICT. This clearly highlights the effect of the COVID-19 pandemic on all business sectors and the need for solutions, which can replace the in-person work-based learning activities.

Last, but not least, the overall success rate of the implemented pilot internship activities was 95%. Although the pilot group of students is limited and not so large, this significant success ratio leads to the conclusion that the developed model and the realised outputs and activities have big potential and are corresponding to the needs of the students, the industry and the higher education systems.

CONCLUSIONS

The presented and discussed model for organization and implementation of digital internships in the higher professional education clearly highlights the need for an environment or a medium for interconnection between the universities, the students and the business organizations. The introduction of a fourth entity in the internship-related processes can play a significant role for the successful implementation of the digital internships. Although such attempts have been made previously, they were done by organizations that are unrelated to the higher education system and have resulted in some of the issues presented in this paper.

The development of a unified system for management of the digital internships by the higher education institutions, the preparation of support toolkits and the use of these tools by the internship providers, guarantees the academic recognition of the internships and reduces the financial burden on the students. On top of that, one such solution can be the catalyst for better academia-industry cooperation and can provide the possibility for transnational cooperation and virtual exchange of workforce and trainees.

The developed model, the established platform and the support toolkits will be subject to additional evaluations and improvements in the upcoming years. The consortium behind the DIMPS project will also explore the available opportunities for multiplication of the project results, either by inclusion of additional industry partners from different business domains, or by involvement of academic organizations from different countries in Europe.

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