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Digital Internship Model for Higher Professional Studies

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INTELLECTUAL OUTPUT 1

METHODOLOGY FOR DIGITAL INTERNSHIP IN PROFESSIONAL HIGHER EDUCATION

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Background

Work-based learning is a substantial part of professional education. For a vast majority of study programs in professional higher education institutions (PHEIs), an internship is mandatory for the program completion, with defined learning outcomes and ECTS-expressed workload. The internship concept is based on a planned period of experience in the workplace to help students develop particular skills, knowledge or understanding.

In addition to the classical internship, nowadays it has become obvious that the assignment of work-based tasks can be performed digitally and remotely, thus providing a more flexible, efficient, personalized, low-cost, and adapted internship solution. Virtual internships (VI) enable students to gain real-world experience in a remote online setting and offer several advantages over traditional internship programs. With the development of adequate monitoring of student progress, virtual internships can significantly facilitate and speed up students' achievement of learning outcomes. Virtual internships may be a solution for the inclusion of students who cannot participate in traditional internships due to financial, geographical reasons, or disabilities etc. Importantly, virtual internships allow easy and low-cost student exchanges, providing students with international experiences.

Virtual internships are a type of remote internships that primarily involves the use of online and cloud-based technologies for conducting assigned work activities. The following guidelines pertain to virtual internships and should be used in conjunction with the general policies on academic internships at professional higher education institutions.

Terminology used in this document

In this document, several terms will be used as follows:

Professional student internship - a form of teaching activities during studies, which implies the practical work of the student in the goal completing theoretical, academic knowledge and establishing links with the practical knowledge and experience necessary to perform future work. This form of teaching is, in various forms, compulsory in most graduate academic study programs.

Virtual internship - the use of an information and communication technology (ICT) supported environment, where students interact with each other and companies independent of time and space and across traditional geographical boundaries. In this environment, effective communications are created between students, faculty and company representatives, in order to carry out a specific and meaningful work-based activity that fits within the student's compulsory educational curriculum." (The INTERN project, 2007).

Student - a person formally enrolled in a study program at a university, higher school or college.

Employer – enterprises, companies, organizations, societies, institutions, small, medium and large companies, shops, associations in public, state, private and mixed ownership, which have the needs, desire and ability to work on the preparation, organization and implementation of student internships.

Internship supervisor - a person within the company with appropriate professional experience and personal qualities that is voluntarily included in the program of the implementation of professional student internships. This person performs a number of tasks and activities aimed at preparing, organizing and controlling the implementation of student internships, monitors and directs the work of students, evaluates their performance and achieved results, and prepares appropriate reports.

Internship mentor – a teaching staff member at a university/faculty/school (professor, assistant, doctoral student) who, in cooperation with the internship supervisor, performs all preparatory, organizational and control activities necessary for the successful implementation of

student internships. The internship mentor performs the final evaluation of the achieved internship results.

Student exchange - a (usually reciprocal) arrangement whereby a student at a university or school studies at another educational institution, typically abroad, for a fixed period.

Virtual student exchange – practical training that consists of sustained, technology-enabled, people-to-people education programs or activities in which constructive communication and interaction takes place between individuals or groups who are geographically separated and/or from different cultural backgrounds, with the support of educators or facilitators. Virtual exchange combines a deep impact of intercultural dialogue and exchange with the broad reach of digital technology (Being Mobile project (2006)).



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PROFESSIONAL STUDENT INTERNSHIP

An internship implies offering a work-based learning experience to students by placing applied learning outside the university in order to intensively integrate academic knowledge with practical experience at the centre, giving them an opportunity to find their professional field(s) of interest(s) and enhancing their employability.

Work-based learning may be required as part of the curriculum or optional, and is common primarily in the medicine, engineering, arts, law and business-related fields. Differences exist between institutions and even between degree programs.

There are three major actors involved in any internship scheme: student, higher education institution (HEI) and employer.

Internships, therefore, can be initiated and driven by any of the three actors involved: student, HEI or employer (Q-Planet. 2009).

- In the HEI-driven scheme, the process is initiated by the university typically as a result of specific requirements in the curriculum. In most cases, this means that work placements are compulsory.
- In the company-driven scheme, the driver is typically the employer who wishes to enter into direct contact with students – prospective employees – and to contribute to their training.
- The student-driven scheme is defined as a situation where the student is the most responsible for all the actions regarding the placement process.

Higher education institutions - legal regulations

At the level of higher education institutions (HEIs), an internship is organized to provide structured and applied learning through practical experience, leading to the recognition of learning outcomes, under the supervision of a professional(s) with a significant background in the field of the experience. For a majority of professional higher education institutions (PHEIs), an internship is mandatory for the program completion, with defined learning outcomes and ECTS-expressed workload

From the perspective of PHEIs, the minimum duration and structure of an internship, as a mandatory part of higher professional studies curricula, are defined by the study program accreditation standards, in compliance with the national legislation.

For example, Serbian Regulations on Standards and Procedure for Accreditation of Study Programs for the first and second level study programs (EQF 6 and EQF 7) defines the minimum number of internship hours, with specificities for each scientific field.

- Natural-mathematical sciences

In the final year of the first and second level studies, students have 90 hours of vocational practice, granting them 3 ECTS credits, and in the fourth and fifth year of integrated studies, they have 90 hours of vocational practice, granting them 3 ECTS credits.

- Technical-technological sciences

An integral part of any curriculum of basic and master's degree study programs in the field of technical and technological sciences, the vocational practice and practical placement lasts at least 90 hours, and is carried out in relevant scientific research institutions, in organizations performing innovation activities, in organizations providing innovation support infrastructure, in companies and public institutions.

In the field of biotechnical sciences, in the field of agriculture and forestry, during the basic studies, students have professional practice of at least 90 hours, production practice of at least 90 hours and technology-organizational practice of at least 90 hours.

- Humanities

In the final year of the first and second level, the vocational practice lasts 90 hours, granting 3 ECTS credits, and in in the fourth and fifth year of integrated studies, it lasts 90 hours, granting 3 ECTS credits.

- Medical science

The Serbian requirements for the accreditation of study programs in the medical field concerning the practice are in compliance with the Directive 2005/36/EC, and therefore regulated by this Directive.

- Pedagogical study programs

Higher education institutions offering pedagogical study programs must provide the pedagogical practice in the second, third and fourth year of studies of at least 90 hours per year. In the fifth year of studies, the pedagogical practice lasts 180 hours, granting 6 ECTS credits. The pedagogical practice is carried out in pedagogical institutions.

Higher education institutions that do not provide pedagogical education within the study programs, and whose graduates would be teachers of vocational subjects in secondary schools, must, in accordance with the Law on the Foundations of the System of Education, provide the education in psychological, pedagogical and methodical disciplines of at least 30 ECTS credits, which may be provided at a higher education institution during the course of studies or after graduation, and 6 ECTS credits for practice in pedagogical institutions.

The Bulgarian regulations are somewhat flexible, allowing an individual HEI to define its own internship for many bachelor's and master's degree programs (EQF 6 and EQF 7). However, there are several national regulations covering the minimum requirements for specific professional qualifications. The specific requirements are summarized below:

- Natural and mathematical sciences

In the last twenty years, there have been no uniform Bulgarian state requirements for the minimum number of hours for theoretical and practical training and practice for the bachelor's and master's degree programs in the area of natural and mathematical sciences. At many universities, including the University of Sofia, which is the most renowned for these subjects, the study programs include a minimum practical training threshold of 150 hours, 5 ECTS.

- Technical-technological sciences

Again, there have been no uniform state requirements for the minimum number of hours for both theoretical and practical training and practice for the engineering bachelor's and master's degrees. At the University of Ruse, all engineering study programs include a total of 210 hours of practice and internships, which are divided as follows:

- after the 4th semester – 90 hours, 3 ECTS and
- after the 6th semester – 120 hours, 4 ECTS.



- Humanities

In the last two decades, there have been no uniform state requirements for the minimum number of hours for both theoretical and practical training in the humanities programs. At the University of Ruse, there is one undergraduate practical placement in the duration of 120 hours (4 weeks), granting 4 ECTS credits, and it is to be taken after the 8th semester.

- Medical science

The requirements for the acquisition of professional master's degrees in "Medicine" and "Dental Medicine" were adopted by the Decree of the Council of Ministers № 245/16.11.2005. The nationwide educational minimums for theoretical and practical training and practice are determined as follows:

1. Practical training is carried out as follows:

- Study practice (clinical internship) after the sixth semester, in the duration of minimum 30 calendar days - 150 hours;
- Teaching practice (clinical internship) after the eighth semester, in the duration of minimum 30 calendar days - 150 hours;
- Pre-diploma internship after the end of the tenth semester - 310 calendar days, or 1320 hours.

2. Practical training of students is organized by an HEI and carried out in medical institutions and establishments which have received a positive accreditation report by the Law on medical establishments.

The state requirements for the acquisition of the professional bachelor's qualifications "Nurse" and "Midwife" were adopted by the Decree of the Council of Ministers № 248 / 22.11.2005, which determines the educational minimum for theoretical and practical training as follows:

- The practical preparation shall be organized and carried out at faculties or branches of an HEI in accordance with the curriculum.
- Practical training shall be carried out in medical institutions and establishments which have received a positive accreditation report for training students.

3. Practical training shall be conducted by lecturers, graduates of the "Nurse" specialty programs, with bachelor's or master's educational degrees in the "Health Care Management" subject within the professional field "Public Health" with professional qualification "Head of health care and lecturer in practice".

4. The minimum duration of practical training is as follows:

- Educational (clinical) practice - from the first to the sixth semester inclusive, a minimum of 1140 academic hours;
- Undergraduate internship – the internship is done in the seventh and eighth semester, in the duration of minimum 1600 astronomical hours.

- Pedagogical study programs

The Bulgarian state requirements for the acquisition of the professional qualification "Teacher" were adopted by the Decree of the Council of Ministers № 289 / 07.11.2016 and they determine the educational minimum for theoretical and practical training for full-time and distance-learning students, as well as for part-time students, where at least 50% of the time is to be planned for internships and practical training. All the training is conducted in kindergartens and schools of the preschool and school education system, and is carried out in the following education forms, with the minimum number of academic hours as follows:

- hospitation: 30 hours (in UR 30 hours – 2 ECTS)
- pedagogical practice: 60 hours (in UR 75 hours– 6 ECTS)
- internship: 90 hours

Hospitation is the observation and analysis of pedagogical situations, lessons and other organizational forms in kindergartens and schools, carried out under the direct supervision of a teacher from a higher education institution.

Before undergoing the pedagogical practice, the trainees must provide information on the place where they wish to practice a profession in the electronic form on the basis of the acquired professional qualification "teacher".

The internship includes students' independent participation in the educational process by carrying out pedagogical activities or giving lessons, as well as in other organizational

forms in kindergartens and schools, under the guidance of a teacher-mentor and a teacher from a higher education institution.

Enterprises - legal regulations

At the enterprise level, internships are regulated by the national labour legislations in terms of occupational safety and health.

HEIs should ask the student to check his/her health, accident and other coverages, such as:

- Health insurance
- Medical treatment
- Social security service
- Accidents including accidents at the workplace resulting in disabilities
- Sick leave, if relevant
- Civil liability

Enterprises should:

- Inform the student about the relevant regulations, especially those relating to work schedules, minimum weekly rest period and vacations;
- Provide a designated work station and accessibility to the workplace when the internship is conducted face-to-face; as for a distance internship, it is necessary to verify that the student has the necessary technical devices;
- Provide all materials that might be needed during the internship;
- Provide an access to a complaint channel to report abuses;
- Make sure that the internship agreement can be prematurely terminated by any party in case of the breach of the agreement (or any relevant regulation), misconduct or malevolence, repeated unjustified absence of the intern or the endangerment of the physical and psychological health of the intern.

TYPES OF PROFESSIONAL STUDENT INTERNSHIP

There are five basic overlapping dimensions that can apply to the internship categorization:

Mandatory (compulsory) internship versus voluntary internship (or credit versus no-credit internships)

In professional higher education, internships are typically part of program curricula, mandatory for the program completion. However, a student can do the internship as a part of an individual extracurricular plan in order to gain experience.

When an internship is performed in exchange for PHEI credits, the assigning of credits strictly concerns the student and his or her school. The mandatory internship must be strongly related to an academic discipline, usually with the requirements that students demonstrate what they have learned during the internship (by keeping a journal, writing an essay, or preparing a presentation).

The voluntary internship does not add to the sum of credits required for the program completion, but is described in the Diploma Supplement as an extracurricular activity.

Time of year

Internships typically take place during the academic quarter or semester, but they can also be organised during the summer or winter break.

Based on the time of year, the basic types of internships are: semester internships, quarterly internships, summer internships, fall internships, spring internships, and holiday or winter internships (i.e. during a winter break).

Industry

This internship dimension is in correlation with the scientific field of the study program, combined with the type of industry that engages students. Thus, internships can be categorized as: technology internships, finance internships, marketing internships, advertising internships, fine or performing arts internships, legal internships, PR internships, and publishing internships.

Paid versus unpaid internships

Whether an internship will be paid or not depends on the national labour regulations, but even more, on the primary beneficiary of the internship. The primary beneficiary of an unpaid internship must be the intern, and the intern's work cannot replace the work of an employee.

The criteria for an unpaid internship include the following:

- Training resembles that which would occur in an academic setting or a vocational school, though the internship takes place at a business facility.
- Training is organised for the benefit of the interns, not the employer.
- Interns do not displace regular employees. Instead, interns work in partnership with and under the supervision of regular employees.
- Employers receive no immediate benefits from interns' activities. In a true internship, program training will occasionally impede business operations.
- Interns are not promised or entitled to a regular position once they have completed the internship.
- Employers and interns mutually agree that the internship does not qualify as paid before the internship begins.

If an internship program falls outside of these parameters and employer benefits from student work, it has to be a paid internship, and its participants are considered as employees for the duration of their internship.

On-site versus virtual internships

While typically an internship is considered as an opportunity for the student to gain real-world work experience, another option is a "virtual internship," which can be completed remotely. This means that student can work from home rather than in a company. A virtual internship involves primarily the use of online and cloud-based technologies for conducting assigned work activities.

VIRUTAL INTERNSHIP

The virtual work placement is defined as follows: “a virtual work placement involves the use of an information and communication technology (ICT) supported environment, where students interact with each other and companies independent of time and space and across traditional geographical boundaries. In this environment, effective communications are created between students, faculty and company representatives, in order to carry out a specific and meaningful work-based activity that fits within the student’s compulsory educational curriculum.” (The INTERN project, 2007)

According to the Ulla Rintala (EU-VIP project), the benefits that HEIs and students gain from applying a virtual internship scheme include:

- Providing a way to integrate work placements in full-time study programs
- Providing the flexibility in time and space (e.g. for students with a job/disabilities)
- Providing a way to combine studies, work and social life
- Ensuring regional mobility without the need to move, and providing an opportunity to learn something about regional cultural differences
- Providing a way to develop new competences (e.g. students learning a new language and new ways of working such as teleworking)
- Providing a professional way to build partnerships between the business world and educational systems.

As for employers, according to the Ulla Rintala (EU-VIP project), the list of benefits includes:

- Increase in profits (productivity is higher with remote than with traditional work placements)
- Overcoming space limitations (space restrictions can cause a decrease in the number of placements as space is one of the most expensive inputs for companies)
- Overcoming geographical limitations (no geographical relocation of workers is needed; companies do not need to relocate the student, he/she can remain at home)
- Reducing the dependency on the labor supply of a particular area
- Overcoming time limitations
- Reducing x-inefficiency of workers (avoid free riders; the work of the trainee can be easily measured, even when working as part of a team)
- Short-lasting and/or unpaid (the firm can save money)



- Easier than traditional ones (employers are experimenting with the idea because more HEI students have an access to computers; virtual work has become more common, and companies want to tap from more affordable labor sources).

General virtual internship requirements

A virtual internship position, just as an on-site internship, must meet the following requirements:

- The internship position must give students the opportunity to participate in the work process.
- The internship position must give students the opportunity to perform work at the level of the study program. The experience must be an extension of the classroom-based learning: a learning experience that ensures applying the knowledge gained in the classroom. It must not simply be aimed at advancing the operations of the employer or be the work that a regular employee would routinely perform.
- The internship position must give the student the opportunity to perform work related to the knowledge and/or skills acquired during his/her study.
- The skills or knowledge acquired must be transferable to other employment settings.
- The experience has a defined beginning and end, and a job description with desired qualifications.
- There are clearly defined learning objectives/goals related to the professional goals of the student's academic coursework.
- It must include the supervision by a professional with expertise and educational and/or professional background in the field of the experience.
- There is routine feedback by the experienced supervisor.
- There are resources, equipment, and facilities provided by the host employer that support learning objectives/goals.
- The internship provider must give the student the opportunity to reflect on the internship and to write an internship report. This is an integral part of any internship.

Virtual internship criteria for academic credit assignment

In order to grant ECTS credits to the student, the virtual internship description and communication from the employer should clearly state:

- The description of the intern's responsibilities, with clear expectations and deliverables
- The type of training provided and how it will be provided
- The supervision provided including the communication plan with preferred methods of communication
- The number of hours the student will spend working on projects
- The number of direct supervision hours the student will be provided with
- The methods of communication: specialized platform, e-mail, phone conferences, Skype, Google
- Hangouts, etc.
- The schedule/procedure for consulting the supervisor regarding progress reports (i.e. daily, weekly, etc.)
- Regular meetings with a potential for in-person meetings or office visits
- Clear commitment of time and technology/tools required of students
- The opportunities to present work and/or collaborate with other employees.

ECTS academic credit assignment

If an internship is mandatory for the completion of a program (or part of a program), it must be part of learning outcomes and student workload assessment and therefore must be included in the distribution of points. In that case, the number of points awarded to the professional practice should be included in the total number of credits for the corresponding academic year.

As with any other part of a program, internship points are awarded only when the student achieves the learning outcomes, after their knowledge has been tested.

If the professional practice is part of organized mobility (e.g. Erasmus professional practice), the Learning Agreement for professional practice states the number of points that will be granted to the student if he/she achieves the expected learning outcomes.

The workload assessment and ECTS credit assignment should be done in accordance with the standards described in https://ec.europa.eu/assets/eac/education/ects/users-guide/index_en.htm.

In the case when an internship takes place during the formal learning process, but is not considered as a compulsory part of a program, it is advisable to define learning outcomes and workload in the Learning Agreement. Learning outcomes achieved through internships that are not considered a mandatory part of a program should also be listed in the Diploma Supplement. In the same way, these learning outcomes should be recognized by awarding them the appropriate number of ECTS credits, which are in that case considered as additional in relation to the standard number for the academic year.

Defining learning outcomes

Internship learning outcomes are general and program-specific. Moreover, they differ depending on the educational level and year of study.

- **Bachelor's level internships**

The primary goal of a bachelor's level internship is an orientation towards the prospective future employment. Students are introduced to the work field and can gain some experience working in a professional organization.

- **Master's level internships**

Internships at the master's level must have a clear academic or practice-based research component or be directed to solving a practical problem. If the internship itself does not comprise a research component, students have to carry out an additional research project directly related to the internship. The employer offering the internship must be informed beforehand that the student will carry out the research, and must be asked emphatically to facilitate the research by allowing time, access to archives or data, granting them rights to interview the employees, etc.

The program-specific internship learning outcomes include:

- professional behavior and/or knowledge (i.e. mastering the employer's expectations for workplace behavior; gaining the knowledge about a specific company/industry; gaining the knowledge about a specific technological process, mastering common job functions such as: marketing, management, customer service, accounting, security, PR, production, design, training, etc.; connecting classroom learning to its application in the workplace).
- Specific skill-building (i.e. improving skills, confidence, competency in specific areas related to the study program or particular area of career interest).
- Project-related skills (i.e. developing skills necessary for carrying out research, analysis, organization, time management, teamwork, multiple task coordination, initiative, adaptability, and project completion).

In addition, internship learning outcomes include the development of a wide variety of **soft skills**, such as:

- Communication skills (i.e. speaking, writing, presenting, persuasion (sales), customer service, interpersonal, teamwork, leadership, and listening skills — as practised in the professional world).
- Employability-enhancing activities (i.e. gaining experience to add to your resume; expanding your network of company or industry contacts; earning a job reference to vouch for your performance).

To be useful, learning objectives should be SMART:

Specific

Measurable

Attainable

Results-Focused

Time-Focused

Learning objectives focus learning on specific areas and can help students maximize their internship experience.

Virtual internship expectations

For the successful implementation of a virtual internship, a list of expectations and requirements needs to be met by each party involved (student, HEI, employer). The expectations are defined for each party for the period prior to, during and after the internship implementation, and they are given in the table below:

	Prior to the internship	During the internship	After the internship
Student	<ul style="list-style-type: none"> The information on the duration, beginning and end of the program (learning activities and goals), working conditions, supervisors and mentors, assessment methods. The internship provides an opportunity to apply theoretical knowledge, as well as to gain relevant experience. The support for identifying a suitable virtual internship - choosing between several options. Clear instructions on how to apply for a specific virtual internship. 	<ul style="list-style-type: none"> Thorough onboarding and orientation. The internship program in compliance with the study program. The clear definition of tasks and deadlines. The clear definition of communication pathways. Timely feedback. The accomplishment of learning tasks and achievement of learning outcomes. The continuous supervision throughout the virtual internship. Regular contacts with HEI mentor in order to identify potential problems. 	<ul style="list-style-type: none"> The certification (ECTS), diploma supplement and an opportunity to access the labor market (based on the combination of theoretical knowledge and practical work) are what students expect after the internship assessment.
HEI	<ul style="list-style-type: none"> Companies must clearly articulate the positions, in terms of the quality of supervision and activities, and in line with ECTS credit system. A certain level of flexibility is expected in 	<ul style="list-style-type: none"> The company is expected to implement the agreed activities. Students are expected to perform the assigned tasks. The communication between all three parties - in writing or electronically is an 	<ul style="list-style-type: none"> A detailed report is expected from the students for the position, including an evaluation of the overall internship, satisfaction, and possible recommendations for improvement. Along with the report,

	<p>adapting the requirements of the internship, and certain jobs in the firm should correspond to the internship program.</p> <ul style="list-style-type: none"> • The quality supervision by company members is an important point for successful student internships. • Students are expected to take some initiative to find the adequate internship. 	<p>important item for the implementation of quality practice and satisfaction of both students and SMEs.</p> <ul style="list-style-type: none"> • A degree of flexibility is expected in adapting the practice based on the feedback from the school or student. • Learning is properly documented for ECTS credit awarding. • Regular or periodic reports from the enterprise are required. • For a productive student internship, a proactive attitude, punctuality, readiness for the required work, and readiness for the integration into the work environment are expected. 	<p>students are expected to submit a description of the acquired theoretical and practical knowledge, and a description of the possibilities of integrating the acquired knowledge into the work environment.</p> <ul style="list-style-type: none"> • After completing the training, the university expects from the company an assessment of the student's activities and acquired skills, their report and evaluation of the entire practice, recommendations for improvement and assessment of the student's theoretical preparation to provide quality work contribution during the internship process. • Following the training process, the cooperation with the enterprise is expected to expand.
Employer	<ul style="list-style-type: none"> • Employers expect HEIs to select well-prepared students. • The opportunity to negotiate internship contracts. • Good communication with HEIs is needed, and thus the inclusion of the required knowledge (by a company) in the 	<ul style="list-style-type: none"> • Students are expected to be motivated. • The support from the university (the preparation of the briefing / mini course and constant contact in order to solve problems). • Providing quality and competent students. • Achieving students' work 	<ul style="list-style-type: none"> • Obtaining a quality worker. • Awarding a certificate of completed training with an explanation of the acquired competences and skills, obtained with the assistance of HEIs. • It is also expected to establish long-term cooperation with HEIs.



	<p>curriculum.</p> <ul style="list-style-type: none"> • A quality statement by the company or school about why the position in a specific company is good for the student (value proposition). 	<p>goals.</p> <ul style="list-style-type: none"> • New ideas, approaches, investments. • Regular checking and monitoring of students is also required, as well as ensuring that the tasks are in accordance with the curriculum. 	<ul style="list-style-type: none"> • To create additional value with a job well done (trainee / student in practice) and receive feedback from HEIs. • Successfully implemented student internships have a positive impact on social responsibility.
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DIGITAL INTERNSHIP MODEL IN PROFESSIONAL HIGHER EDUCATION

The digital/virtual internship model for professional higher education is directed at finding solutions to the problem of transferring field-specific formal requirements and learning outcomes into the digital format. The focus is placed on the creation of the model suitable for the internship in different economy sectors, including the technical sector and tourism.

The model supports the needs of the internship triangle: student-PHEI-world of work. It allows students to select and approach the digital internship position in the workplace; PHEIs to perform monitoring and validation of student progress, assessment of achieved learning outcomes, knowledge, skills and competences during the digital internship, to be supported by companies in terms of training internship mentors; and for the companies, it will facilitate the internship implementation, which includes designing complete or partial digital internship positions, selecting and delegating particular tasks to students, monitoring of student progress and program accomplishment.

The DIMPS model targets the PHEIs in emergency situations, but it also increases the responsiveness of PHEIs to the challenges of the Fourth Industrial Revolution.

Accordingly, it targets students, particularly those pursuing economics degrees, which are less directed towards the digital mode of work, providing them with more efficient work-based learning. Furthermore, it widens the spectrum of internships that will be accessible to students with difficulties.

The digital internship model also targets the world of work, perceived opportunities and challenges of representatives of key stakeholders in the development of digital internships.

By adjusting learning requirements and outcomes, this digital internship model can be adopted at other qualification levels, particularly those in dual education.

Using a specialized, secure and collaborative web software solution, the DIMPS provides a more flexible, efficient, personalized, low-cost, and adapted solution for virtual internships.

The DIMPS virtual internships software solution architecture is based on open standards, so it can be connected or integrated in both directions with other specialized e-learning platforms that complement virtual internships user experience. Interactions through online platforms enable early networking, direct contacts with employers, meeting new people with the same interests, and communication between peers within classes, schools, and cities.

The DIMPS platform virtual internship may be conducted through live, virtual instruction from an internship supervisor (synchronous) or self-directed online assignments (asynchronous).

DIMPS PROCESS GUIDELINES

The implementation of the DIMPS requires careful planning and envisioning of the whole virtual internship process. The DIMPS planning includes the necessary steps to be taken by each party involved (student, HEI, employer) during different stages of the internship implementation (prior to, during and after the internship).

The guidelines presented below largely reflect the virtual internship initiated and driven by an HEI, where the process is initiated by a university typically as a result of specific requirements of the curriculum, thus being compulsory and awarded a number of ECTS credits. Yet, it could be easily adapted for student- or employer-driven internships.

STEPS TO BE PERFORMED PRIOR TO THE DIMPS INTERNSHIP

HIGHER EDUCATION INSTITUTION

Determine the professional learning outcomes for the study program

During the process of setting learning goals for the study program, the HEI should include stakeholders, then define learning objectives for the internship. For professional higher education, learning outcomes should incorporate the desired industry-related knowledge and skills, as well as the abilities required for the successful career advancement. It is necessary that the internship learning objectives can be translated into various learning activities, and assessed. It is important that the learning objectives are also appropriate for the level of qualifications. The HEI should also allow the alignment between learning objectives and professional skills, and transparency of the process by publishing course design regulations.

Secure / regulate internship places (positions)

The HEI defines and publishes internship standards with the following specifications: necessary areas and learning objectives, employment conditions, mentoring and supervising, financial contracts / conditions, which requirements are necessary for the report, rights and obligations of each actor (student / HEI / employer). The HEI must have a person responsible for identifying the internship positions within the company, must have a procedure that allows the student to choose an internship place, and must have guidelines / a training course for students to help them identify a suitable internship place.

Publish a list of available internship places on the DIMPS platform

HEIs should maintain a database of all possible internship places, which include detailed information, skills that can be developed, and the rating of those places based on previous experiences. That database should be available to all students.

Implement a training program for DIMPS virtual internship development for employers

HEIs should develop a training program with an aim to include companies unfamiliar with the virtual internship program, in order to offer its students a wide variety of internship positions.

Negotiate learning agreement

HEIs should provide the following necessary information for the learning agreement: the duration of the internship (duration, start and end period, periodicity), then learning objectives (internship program), information on employment conditions (salary, security, working hours), information on supervisors and mentors (their roles and responsibilities), information on students' reporting method, communication regime and assessment methods. It is important that an HEI provides a contact person and problem-solving mechanism, includes the terms and requirements of the employer in the contract, and provides a template for students and employers to document the internship.

EMPLOYER

Create a virtual internship position

In order to successfully create an internship position, the employer has to grant the HEI access and enable open communication with the HEI (determine the contact person for the communication with the HEI). It is necessary to define future needs, i.e. necessary work skills, and to participate in the labor market research. The important steps for the creation of an internship position on the part of the employer include:

- Determining the capacity of the firm to receive additional employees (students) in accordance with the conditions of practice (do they have enough work for students undergoing practical training?).
- Explicitly defining the professional field of work with recommendations for learning objectives.
- Explicitly defining the work skills that the place can offer (that students can master).
- Preparing the financial plan for the practice, identifying the necessary resources and expected benefits / revenues.
- Appointing supervisors with adequate experience, able to perform training, if necessary.
- Providing suitable working conditions.

Negotiate the learning agreement

Specifying (in cooperation with HEIs) the conditions that will be included in the learning agreement / contract:

- Financial
- Student position within the company
- Name of the supervisor and his / her duties
- Student tasks within the company
- Work goals for students.

Prepare thorough onboarding and orientation material and publish it on the DIMPS platform

In order for the student to get oriented and well established in their new working environment, supervisors should plan to devote the student's first day on the job to orientation and training. Therefore, the supervisor should prepare the materials that involve: learning about the organization, reviewing organization-wide communication standards and workplace expectations, and reviewing the student's defined learning goals. As this orientation will not be completed in-person, a synchronous meeting platform should be used for the orientation, in addition to the electronic written documentation. This will provide the student with an opportunity to ask clarifying questions, as this might be their first professional work environment, and quite likely their first virtually-based position.

Prepare the training materials and upload them to the DIMPS platform (if applicable)

If the learning outcome includes the student training about a particular work process, especially a technological one, it is advisable to prepare the materials in advance, in the form of a video presentation, for example.

Prepare the tasks for the student in concordance with the learning agreement and publish them on the DIMPS platform (if applicable)

If possible, the task description with expected outcomes and time schedule should be uploaded to the DIMPS platform in advance. It may facilitate the supervisor's tasks during the internship.

STUDENT

Plan and choose the internship

Prior to the internship, students should identify 4-6 learning goals to be completed during the internship. They could incorporate the desired industry-related knowledge, skills, and abilities required for the successful career advancement. With the mentor from their HEI, students make a choice between the virtual internship positions in the DIMPS database. The student can suggest to the HEI to organize the internship with another employer that fulfills the requirements, in which case the preparation and negotiation of the virtual internship will occur as previously explained.

Supervisors from the company will work with the student at the beginning of the internship on the development of a plan in order to ensure that the established goals are met, and check in regularly throughout the internship to see if the student is on track to meet these goals.

STEPS TO BE PERFORMED AT THE BEGINNING OF THE DIMPS INTERNSHIP

Prepared and signed learning agreement

Learning agreement should be signed by all the parties involved. The HEI mentor is a person responsible for signing the Learning Agreement, amending it if needed and recognizing the credits and associated learning outcomes on behalf of the responsible academic body as set out in the Learning Agreement. The supervisor at the receiving organisation is responsible for signing the Learning Agreement, amending it if needed, supervising the student during the internship and signing the Internship Certificate.

The learning agreement shall include:

1. Signatories of all the parties included
2. Identification of the HEI mentor and employer supervisor who will guide students throughout the internship
3. Duration: the length of the internship
4. Schedule: the expected working hours or presence hours and timetable
5. Description of the role and the tasks of both the student and host organization
6. Learning objectives and skills to be developed and those to be evaluated
7. Payment, if applicable
8. Credit points: ECTS credits (when relevant)

STEPS TO BE PERFORMED DURING THE DIMPS INTERNSHIP

HIGHER EDUCATION INSTITUTION

Virtual internship monitoring

The HEI should design a procedure for ensuring the quality of internship positions, taking into account random verification and creating a procedure for periodic examination of students and employer in order to monitor the progress of practical training. Internship monitoring also means that the HEI provides a contact person and a problem-solving mechanism.

EMPLOYER

Virtual internship implementation

Provide a periodic review (meeting) where students receive feedback on the implementation of the internship and where they can evaluate mentoring.

Provide adequate procedures that guarantee the fulfillment of all the obligations under the contract.

Implement procedures that introduce the student to the company and its role.

Be flexible in adapting / changing feedback-based practices.

Document student progress in achieving learning goals, using templates provided by the HEI.

Create a safe and positive environment.

Provide appropriate resources for mentoring (time, financial compensation, training).

Provide a contact person and problem-solving mechanism.

Timely feedback

Supervisors should review student deliverables and provide timely feedback to students on a regular basis. Supervisors are asked to schedule feedback meetings for a minimum of thirty minutes each week to engage in direct mentorship with the student regarding their progress towards learning outcomes and areas of professional development. Pre-planned training topics should also be discussed during these sessions. A synchronous meeting plugin on the DIMPS platform should be used for this portion of the internship.

Consistent communication

Summative feedback should be provided consistently at least once a week. This includes an update on expected work activities for the week, outcomes from prior work submissions, and other relevant announcements pertaining to the organization. A good practice is to schedule a regular email report around or on the same day each week.

Pre-arranged schedules

Although the key feature of remote internships is the flexibility of the work schedule, supervisors and students should agree upon a definite time allotment on a weekly and daily basis for internship activities.

Organizational involvement

In addition to facilitating a remote or virtual internship, site supervisors should make a good faith effort to integrate the intern into the organization's work culture. After the initial onboarding orientation, this may include visits to and attendance at selected team meetings, use of company tools and resources, and any other forms of access to other staff members.

STUDENT

Virtual internship implementation

Perform tasks under supervision and write the digital internship journal.

Meet deadlines and manage time effectively

When students work from home, they have to build the work ethics. It is necessary for a student to keep track of important dates and assignments and be sure to submit work in a timely manner. Students should complete assignments on time and let supervisors know if they have time to take on more projects.

Students are strongly advised to create their own professional environment. Even if they are not in the traditional workspace, making an effort to dress professionally will help students stay motivated and get into a work mindset.

STEPS TO BE PERFORMED AFTER THE DIMPS INTERNSHIP

HIGHER EDUCATION INSTITUTION

Internship assessment

Require a written report (with oral explanation) on the internship from the student and the uploaded one to the DIMPS platform

Provide the student with the fair and transparent assessment with an explanation of the assessment, including the achieved level of internship learning goals

Certify completed training with a description of acquired skills and ECTS credit assignment.

Indicate the merits of the completed internship.

EMPLOYER

Internship assessment

When viewed from the employer's perspective, the evaluation of the internship involves feedback on student performance during training, and this includes: monitoring according to the format defined by the HEI, a detailed description of the student's level of progress or achievements following the goals set by the employer, then the documentation of the training, and the inclusion of the student performance assessment. For the internship assessment purpose, the employer will also provide the student satisfaction assessment / evaluation and seek feedback from the HEI.

STUDENT

Continue towards his/her study program accomplishment and certification. Enjoy the benefits of accumulated knowledge and experiences.

The DIMPS internship combined with the virtual student exchange

The virtual internship platform provides a great opportunity to facilitate virtual internship mobility schemes. Since more and more organizations operate internationally, students are also encouraged to take on work placements abroad. However, a large number of students simply do not have the opportunity to take on work placements abroad for social, financial or other reasons. Using ICT tools such as the DIMPS platform to support some form of virtual work placement with a foreign company is particularly suitable for these students. Virtual work placements enable students to take on work placements abroad without having to leave their home country. These virtual work placements are not only beneficial for students, but also for HEIs and companies. (The INTERN project. 2007).

The virtual mobility internships combine the aforementioned triangle HEI-student-employer at several schemes (The INTERN project. 2007):

- A company in one country contacts an HEI in the same country and looks for work to be done by students in another country as part of a virtual work placement and supported by the academic or teaching staff of their own HEI.
- Students from two (or more) different countries work for a company located in another country.
- A company in one country works with students from its own country along with another company already based in a second country.

The basic features of the preparation, implementation and assessment stage of the virtual internship remain the same regardless of the student country of origin. Yet, the responsibilities of the sending and hosting HEIs have to be defined by the learning agreement. The best recommendation is to follow the Erasmus+ procedure for the student traineeships mobility https://ec.europa.eu/programmes/erasmus-plus/opportunities/traineeships-students_en for the documentation and tracking as they can be easily applied to the DIMPS platform.

List of references

1. BEING MOBILE project. <http://www.being-mobile.net/>
2. EU-VIP: Innovating International Placements Through Virtual Mobility: The EU-VIP Project
3. EU-VIP: State-of-the-art in support of virtual placements A study carried out in the framework of the EU-VIP project
4. INTERN. Virtual internships: real experience in a virtual world. A best practice handbook for those interested in the concept of virtual internships in business education. 2007.
5. Q-Planet project. <http://www.q-planet.org>

Necessary documentation for the implementation of the virtual internship for higher professional studies

Form 1: Rulebook on student virtual internship (made by an HEI)

Form 2: Cooperation agreement with the institution where the internship will be performed (signed by the HEI and employer)

Form 3: Learning agreement on the realization of virtual internship for each student (signed by the higher education institution, employer and student)

Form 4: Certificate of completed internship (signed and certified by the employer and head of the internship at the institution where the internship was performed)

Form 5: Virtual internship diary (kept by the student and signed by the student and the supervisor at the institution where the internship was performed)

Form 6: Report on completed internship (compiled and signed by the student)

Form 7: The form for the assessment of the virtual internship (signed by the supervisor at the institution where the practice was performed and by the internship mentor at an HEI)

Form 8: Student satisfaction survey form (to be filled in and signed by the student)

Form 9: Erasmus+ Learning Agreement - Student Mobility for Traineeships