

# VIRTUAL PLACEMENTS: IMPROVING THE INTERNATIONAL WORK EXPERIENCE OF STUDENTS

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## Abstract

In a context of increasing global economic connectivity and interdependence, gaining practical work experience (skills and competences) in a professional and international environment is vital. For that reason, higher education institutions, students and companies have a growing interest in cross-border work placements.

When students go physically abroad for a work placement, preparation, coaching and follow-up of students is not always optimal. Virtual mobility activities to better prepare them for the work placement will result in a more fit-for-purpose matching of students and companies. Virtual follow-up and coaching systems will enable more knowledge exchange between the higher education institutions, companies and students on tutoring issues, tasks, student performance.

These traditional physical work placements, where the learner travels to the company abroad, require a degree of flexibility (of finances, time, and motivation). Only a relatively small number of learners is therefore able to enjoy an international, professional opportunity. Here, the set-up of fully virtual placements, for those who cannot physically go abroad for financial, social or other reasons, could overcome this need for enlarged access and flexibility.

The EU-VIP project ("Enterprise-University Virtual Placements") exactly wants to enhance the quality, efficiency and impact of international work placements by focusing on how to organise international work placements using the advantages of the newest educational technologies. The project is developing models and services for virtual mobility activities to support students before, during and after a work placement abroad but will also look into the possibilities of fully virtual placements.

Finally, the paper will give an overview of the advantages but also the challenges related to the implementation of virtual components in work placements.

Keywords: work placement, internship, virtual mobility, internationalisation, educational technologies.

## 1 INTRODUCTION

In a context of increasing global economic connectivity and interdependence, gaining practical work experience (skills and competences) in a professional and international environment is vital. For that reason, students and companies have a growing interest in cross-border work placements or internships.

Learning mobility, i.e. transnational mobility for the purpose of acquiring new skills is one of the fundamental ways in which individuals, particularly young people, can strengthen their future employability as well as their personal development.

There has been much reflection in political and expert circles on the benefits of learning mobility and how it could be expanded. The Council for example concluded in November 2008 that "every young person should have the opportunity to take part in some form of mobility, whether this be during their studies or training, in the form of a work placement, or in the context of voluntary activities" [1]. Also the Leuven Communiqué, adopted on 29 April 2009 by the Ministers in charge of higher education in the countries participating in the Bologna process, stipulates that in 2020, at least 20% of those graduating in the European Higher Education Area should have had a study or training period abroad" [2].

However, traditional physical work placements, where the learner travels to the company abroad, require a degree of flexibility and there are a number of barriers to such physical mobility initiatives. These include financial, geographical, social and other reasons. Only a number of learners is therefore able to enjoy an international, professional opportunity. Likewise, smaller or more remotely located enterprises find it hard to gain access to this form of international university-enterprise cooperation.

For those physical placements abroad that do happen, there are also a number of difficulties. e.g. students receive insufficient and discontinuous feedback their home institution, communication between the enterprise and the higher education institution is often incomplete regarding objectives or expectations, feedback about a placement at an enterprise to the higher education institution and vice-versa is barely formalised and occurs mostly at the end of the placement, no structural feedback from working experiences into university curricula, etc.

The integration of virtual mobility components into work placements can overcome this need for enlarged access and flexibility and could also help in overcoming at least some of the existing difficulties. Virtual mobility is in this context understood as a set of ICT-supported activities that realise cross-border, collaborative experiences in a context of teaching and/or learning. These activities can take place in a fully ICT supported learning environment or as a complement to physical mobility (before, during and after).

Today's progress in ICT makes it entirely possible to integrate virtual mobility in international internships and this form of mobility will provide students with opportunities to practise with ICT tools and modern forms of international communication (e.g. videoconferencing) in a professional context. The whole idea also responds to a number of concerns expressed at a European political level. First, student mobility is considered an essential precondition for the realisation of an open and dynamic European educational landscape (a European Higher Education Area – EHEA) as it contributes to the European integration and labour mobility [3]. Second, the European goal to create a European Information Society (e-Society) [4] and the European Employment Strategy [5] both express a strong commitment to support the production and use of information and communication technologies as a key driver for social and economic development. Third, for both issues – increased mobility and ICT skills – the European Union continually emphasises the importance of social inclusion (e-inclusion) [6].

In this paper, two possibilities of improving and supporting or even replacing work placements through virtual means are presented. This is followed by an introduction to the EU-VIP project (“Enterprise-University Virtual Placements”) [7]. This EU-funded project exactly wants to enhance the quality, efficiency and impact of international work placements by focusing on how to organise international work placements using the advantages of the newest educational technologies. Thereafter an analysis of the advantages and the challenges related to the implementation of virtual components in student internships will be given.

## **2 TYPES OF VIRTUAL WORK PLACEMENTS**

Virtual mobility can support work placements in a number of ways. We see two main types: the fully virtual work placements and the virtual support for physical work placements.

### **2.1 Fully virtual work placements**

A virtual work placement can be a fully ICT supported professional experience. This form enables learners to enjoy an internship at a company without having to leave their home or their home university. Those fully virtual placements allow more students who for some reason cannot go abroad to benefit from an international experience, learn a foreign language and acquire intercultural communication skills in a business context.

The INTERN project, as one of the first projects to really put the idea of virtual work placements into practice, defines the term 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" [8]. Such virtual work placements require specific projects that motivate the learner to participate and exclude the need for their physical presence.

In the framework of the INTERN project a series of scenarios for European business learners were explored from September 2000 until September 2002. Four specific pilot virtual internships were organised between experienced business schools and international companies: (i) an assignment led by Buskerud University College for a Norwegian small and medium enterprise (SME), Tronrud Engineering, to research markets, exhibitions and fairs for one of their products in other countries; (ii) an assignment led by IFI for a French company, Kremlin, Inc. to find out more about the Danish market and the potential market for spray equipment; (iii) an assignment led by Arcada for ICL Invia, a Nordic service provider and operator of advanced information systems to investigate the use of Information Technology in customer relationship management for hotel chains and hotel marketing chains in Finland and Norway and (iv) an assignment led by TietgenSkolen for the Danish DFDS Transportation Group, who wanted to carry out a logistic survey of track and trace systems.

Virtual work placement projects should, however, not be exclusive to the business/commercial sector. There are plenty of opportunities for cross-border collaboration for almost all other sectors, from companies active in socio-cultural research (anthropological studies, migration studies, etc.) or communication sciences (media research, impact studies, press) to ICT-companies (programming, web design, project management tasks), publishers (translation, interpreting, graphic design, editing), international law firms or advertising agencies, etc.

A virtual student internship could also be organised for an entirely virtual, yet standing, company. A growing number of companies today only exist as a network of computers. The concept of VirtualBusinessTeams (VBT) developed by the Open University of the Netherlands explores deployment modes for this form of professional learning. VBTs are defined as teams of students or trainees who perform work assignments "as tele-workers in a networked enterprise, a cluster of personal desks or workbenches equipped to support various forms of collaborative work" [9].

## 2.2 Virtual support for physical work placements

Virtual mobility can also be used in addition to a physical work placement. The latter is then enriched by virtual preparatory and follow-up activities as well as virtual support mechanisms, subsequently enhancing its effectiveness and success.

Virtual mobility before and after a work placement occurs in an ICT supported learning environment where learners and company employees find each other for the preparation and the follow-up support of a work placement. From the perspective of the student, preparatory virtual mobility actions can offer support at a social, cultural and linguistic level as well as an introduction to placement related tasks. The impact of these preparatory activities on learners cannot be denied: they will be well-prepared, focused and more productive during their internship visit, which is in turn beneficial to the hosting company. Unlike fully virtual work placements, virtual support before, during and after does not solve limited access to physical, transnational work placements. It does, however, provide tools to enhance, support or extend the physical visit.

Offering ICT support before, during and after *student exchanges* was already explored by the VM-BASE project (Virtual Mobility Before and After Student Exchanges). This project was focused on (1) raising the quality of student exchanges by offering virtual support, both before, during and after the physical mobility; (2) supporting teachers in coaching exchange students at a distance (e-coaching) [10]. It seems obvious that a lot of the ideas developed in this project can be quite easily transferred to the context of work placements.

Careful preparation is the key to successful learning mobility. Internet and other electronic forms of information allow young people to prepare stay abroad, learn the language, acquaint themselves with the host country and its culture, their future host institution and/or company, developing direct contacts, etc. Opportunities to prepare a physical work placement through ICT range from orientation modules; industry-university networking; virtual pre-selection (e.g. a exploratory (job)interview between student and company before the placement could be done using video or web conferencing), tests to virtual introductory language and culture courses; digital literacy courses, etc. An ICT supported (learning) environment can, for instance, be a meeting place for learners in search of a professional experience in a certain sector and a virtual platform which enables university-industry

networking. See for example the matchmaking portal developed in the framework of the CSVM-project [11], or other initiatives such as LEO-NET [12] and Ap n' Go [13].

Once a company/project or sector has been selected, virtual preparation could offer internship information about the company, the project or tasks, the required profile and/or knowledge, the accommodation facilities, etc. For the subsequent phase of subscription or recruitment, ICT could support today's traditional paper based applications. Web conferencing tools offer the possibility to enhance the usual application with a virtual conversation to get a better picture of the capabilities of potential learners. Ultimately, an ICT supported environment (i.e. an interactive web site, a portal, a learning environment,...) could also offer access to a set of preparatory courses to support the student to better train for his/her professional experience. These courses could range from language training and cultural courses to digital literacy courses etc.

During a placement abroad educational technologies such as e-portfolio or blogs can be used to stimulate self reflection about the learning process and both the company and the teachers/tutors at the higher education institutions have the possibility to follow-up and eventually comment on the progress made by the student. The HELPP project that explored the use of a 'blogging' system to support three way communications and reflection between tutor, students and work placement mentors during work experience is a good example in this respect [14].

Once a physical work placement is finished, virtual components can be valuable for the assessment and evaluation or for the virtual support of an alumni network. With regard to the latter, virtual mobility can help to sustain contacts after leaving the host company. Virtual components facilitate the networking opportunities once a physical or a virtual professional experience is finished. Successful social networking web sites such as Linked In or Xing are popular examples of possible environments. As to that, the previously mentioned matchmaking portal could contain a module for (professional) alumni networking.

### **3 THE EU-VIP PROJECT**

Notwithstanding the advantages of both types of virtual placements they are not an out-of-the-box solution yet. Further research will be done in the framework of the EU-funded project EU-VIP, where both types of virtual placements will be tested through the set-up of specific pilot activities.

#### **3.1 Description of the project**

The EU-VIP project ("Enterprise-University Virtual Placements") wants to enhance the quality, efficiency and impact of international work placements by focusing on how to organise international work placements using the advantages of the newest educational technologies. For this purpose, the project will develop the necessary (technical, pedagogical, organisational) models and services for the two types of virtual work placements, i.e. fully virtual placements and virtual support for physical work placements.

The project brings together 16 partners from 8 different countries. To ensure the success of the project all target groups are represented: the consortium is composed of higher education institutions and European not-for profit associations of universities, businesses and students. The project has started in October 2009 and will run until September 2011.

#### **3.2 Framework for scenarios for virtual internships**

The overall goal is to develop an innovative pedagogical and organisational model for setting up virtual internships, thereby strengthening interaction between the various stakeholders, namely higher education institutions, students and enterprises. Several scenarios will be developed by the project partners which will be implemented during the pilots.

The scenarios will vary according to the degree of integrating virtual components into the work placements (fully virtual placements or virtual support for physical work placements). Further, the design of the scenarios will also depend on which actor is driving the process: higher education

institution, student or employer. The process is slightly different depending on the driving factor. In the **university 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 – potential future employees – and to contribute to their training. And last but not least is the **student driven** scheme which is defined as a situation where the student is the main responsible for all actions regarding the placement process. Thus, the work placement is mainly based on students' own interests and motives [15]. There are also a number of internship programs through which students can find placements.

Different scenarios will be defined and therefore, the project has put forward a common framework for the development of the scenarios.

As a first step the EU-VIP consortium has categorised the activities, procedures and services supporting students taking on work placements abroad under four phases (preparatory, before, during and after), in which the nature of the activities may vary.

Secondly, the project has identified the various actors involved in the different stages of the virtual work placement process. For the higher education institutions we can distinct three groups. A first group is formed by the student counsellors, student administration and student career service (HEI – SC/A). They are key actors and have the necessary knowledge and expertise when it comes to supporting mobile work students. A second group is constituted by the curriculum responsible. Their role is to ensure that the virtual work placements are integrated parts of the curricula. The teachers and coaches (HEI – T) are the third group. They are key players in the implementation of virtual mobility and e-coaching the mobile students. It must however be noted that this distinction in groups for higher education institutions is not the same for all countries. Existing policies and practices vary not only between organisations but also within them. The other stakeholders involved are the students (S) and the business representatives (B).

In the framework, each phase identifies and integrates the stakeholders, their roles and typical activities. The four phases will be described in the following:

- 1) **Preparatory phase:** when a student starts to think about going abroad, searches for information on possible work placements, makes the application, etc.  
Examples of activities and which actors are involved include:
  - Networking between HEI's and international businesses (HEI and B)
  - Integration of the internship in the curriculum (HEI – CR and HEI - T)
  - Setting up internal discussion and consultation between all HEI staff involved (HEI – SC/A, HEI – CR and HEI - T)
  - Promotion of and information about international internships (HEI and B)
- 2) **Before the work placement:** when the student's application is approved and he/she starts to prepare for the actual placement.  
Examples of activities and which actors are involved include:
  - Going through the application and selection procedures (HEI and S)
  - Supporting students in administration and practical organisation (HEI – SC/A)
  - Registration of work placements (HEI - SC/A)
  - Setting clear goals, expectations, tasks, deadline, communication and feedback protocol (B, T and S)
  - Preparative training sessions, preparing student guidebooks (B, T and S)
- 3) **During the work placement:** when the student is doing the actual placement  
Examples of activities and which actors are involved include:
  - Coaching and feedback for students (joint responsibility of HEI – T and B)
  - Organisational socialisation (S)
  - (Further) acquiring international skills (S)
  - Reflection on personal development in relation to goals (S)
  - Confronting acquired knowledge and skills with practice and further developing these skills (S)
  - Career guidance (SC/A)

- 4) **After the work placement:** when a student returns back to his/her home institution and the actual training is completed.

Examples of activities and which actors are involved include:

- Writing a report on the internship (S)
- Evaluation of student (B and HEI - T)
- Evaluation of partnership business – university (B, HEI and S)
- Long term career guidance of the student (HEI – SC/A and S)

In each of these four phases, new technologies can help to enable an optimal interaction between the different stakeholders. A few concrete examples of such activities have already been given in the previous section.

In EU-VIP, the models and services for integrating virtual mobility in work placements will be further developed through a process of testing and implementing scenarios in 18 pilot projects. These pilot projects will be evaluated by the three target groups of the project: higher education staff, business representatives and students. The feedback from these stakeholders will be used to improve and optimise the developed scenarios.

## 4 BENEFITS AND OPPORTUNITIES OF VIRTUAL INTERNSHIPS

Work placements in general are a professional way to build bridges between business life and the educational system and can enable a more smooth transition for students from the world of education to the world of work. This is not different for virtual internships, but the use of ICT to support internships does make it possible to deepen and enlarge cross-border and cross-sector cooperation and communication between business and universities even more. Virtual mobility incites new ways of knowledge transfer. Virtual work placements can give extra-institutional visibility to excellent knowledge and know-how developed in a given university while at the same time inviting companies to give important feedback to the educational institution regarding the curriculum and approach taken, and its relevance to the current business environment. This has advantages for both the educational institution and the company, whereby they each come to understand the other's needs. This form of mobility will also provide a way to learn new competencies and enhance for example the student's ability to practise with ICT tools and modern forms of international communication in a professional context.

Virtual mobility and work placements are an exciting blend for a number of other reasons as well. Virtual internships provide access to new, non-traditional and/or remote audiences that cannot participate in normal, physical work placement projects. These audiences can range from learners with limitations in (financial) resources to disadvantaged regions or individuals (e.g. students with special needs). Virtual placements consequently offer chances for an international, professional experience to people who would otherwise not benefit from them, which in turn contributes to the idea of 'equal opportunities for all' and the democratisation of education [16]. With this enlarged access, participation in student internships will be increased, thus enlarging the 'customer base' of an educational institution and the 'recruiting base' of an international company: more students can be drawn to the former thanks to the attractiveness of a professional, international learning experience with the latter and vice-versa. Ultimately, more and better access to cross-border teamwork also contributes to the development and deepening of a sense of European citizenship.

Finally, virtual mobility components in work placements also offer learners a new sense of flexibility, both in time and in space. A virtual work placement learns that a professional experience is no longer location dependent. Learners can engage in a professional learning experience independent of their physical location, be it their homes, their home institutions or a host university. Virtual internships can provide a way to combine studies, work and social life (e.g. easier integration of the internship in full time study programmes, more flexible combination of a work placement with a student job).

## 5 CHALLENGES

Despite all the benefits, the integration of virtual mobility in work placements, either as a complete alternative or as a support mechanism, remains challenging. There are several points of interest both at an organisational, pedagogical and technological level [17].

Even more so than for 'traditional' work placements, a good definition of the project (aims, conditions, tasks) a careful preparation and a detailed planning (time, budget, effort) and a clear distribution of roles prior to the activity is absolutely necessary. A virtual work placement project needs to consist of useful tasks from companies. The assignments need to be as such that the student's contributions are esteemed valuable to the company. Similar to a physical placement, the student cannot just be passing time behind the desk.

When drawing up the planning of the virtual work placement, one should always check the feasibility of all activities. A good planning should also anticipate time for making acquaintance. Company representatives need time to familiarise themselves with the background, the characteristics and the expectations of the learners and the learning objectives. The learners need time to get to know the company or the sector they will work for. As indicated above, virtual mobility can be a support mechanism for this preparatory stage. Project information and preparatory modules or courses (such as language skills and intercultural aspects) can be delivered through an ICT supported environment, both for a virtual or physical work placement. The planning should also anticipate enough time for the learners and the teachers to work on the virtual activities. E-coaching is a time-consuming job, which is often underestimated.

A clear definition and distribution of the roles and responsibilities of every actor taking part is recommended and demands clear guidelines as to what exactly is expected in terms of international collaboration. This definition could profit from a preceding, detailed overview of the profiles of all parties involved (students/teachers/support persons/management etc.). A written and explicit working agreement between the company and the educational institution which incorporates all the above can offer a solid working basis. During the work placement it should be made sure through monitoring and evaluation that everyone is meeting their responsibilities.

Although virtual mobility excludes the need to travel, research has shown that face-to-face contact at some point or on some level is beneficial to the success of the activities because they build a feeling of trust and responsibility. Such personal meetings could be integrated in the planning and preparation of the activities for the organisers of the virtual student project (educators and company representatives). During the virtual internship these could be a visit to the company headquarters or a final internship event on location. In case of fully virtual placements, new methods need to be found to realise this trust between company and students, for example through ICT supported synchronous communication (Skype, chat, web conferencing).

Ultimately, a virtual work placement also profits from true commitment from all the actors involved. Academic and teaching staff should back the idea of learned activities. They should believe in the essential link between learning and the workplace. The company must be able to see the benefits and needs to be prepared to meet its commitments. The learner should also be open for the idea and have the appropriate educational background. Her/his ability to work independently is a requirement.

On a pedagogical level, a virtual work placement requires a specific pedagogical approach. Professional experiences supported by ICT should be more than poor substitutes for physical work placements. Although a consistent e-learning pedagogy on how to organise virtual mobility initiatives does not yet exist, research concludes that approaches such as guided independent self-study, collaborative learning, problem/project-based learning are the better methods for the organisation of virtual activities. The pedagogical model upon which the INTERN project bases its work, for instance, views the individual learning process as having two dimensions. The first dimension is the difference between tacit knowledge i.e. knowledge that is personal and intuitive and explicit knowledge, i.e. knowledge that is meaningful and communicable. The second dimension is that of learning through theory versus learning through practice. The INTERN pedagogical approach builds on the idea that different learning processes operate through the interplay between theory and practice, and between tacit and explicit knowledge. The INTERN pedagogical model therefore incorporated four aspects A-D: (A) conceptualisation (theoretical lectures in the specific academic fields studied); (B) experimentation (theoretical concepts in the individual pilot projects were elaborated on in web discussions and cases were solved on the project's web site); (C) experience (company representatives who acted as coaches in the assignments shared their practical knowledge with the learners); and (D) reflection (reporting the findings of the tasks and problems to the company representatives through videoconferencing) [18].

A second pedagogical consideration is that a virtual internship needs an adjusted approach to assessment compared to physical work placements. Assessment procedures for virtual activities, however, are not easy to design. They should be built not only on study results and products but even

more so on the study process. An online 'internship-weblog' for instance should be more than the collection of a number of posts. Regular reporting of the work done or crucial (ICT supported) feedback moments between the learner(s) and the educators and/ or company representatives should be foreseen in the internship project. The methodology of evaluation and assessment should be agreed on before the start of the project.

From the technological point of view, a basic requirement for realising a successful (semi-)virtual internship is the availability and selection of a user-friendly, easy-to-access ICT environment that is appropriate for the tasks. Complicated tools and platforms could hamper the success of the communication or collaboration tasks. Learning environments might have to be opened to outsiders as a collaborative work placement project requires access rights for all users to a central virtual learning platform where the activities take place. Videoconferencing equipment should be tested beforehand and usually requires guidance during a session. Web conferencing requires a stable Internet connection with an adequate amount of bandwidth.

Finally, the students, coaches and company representatives also have to be e-literate in order to use the technology in an appropriate way. This foreknowledge should cover the appropriate equipment, the correct application, the necessary technical support, and an understanding of usability or user-friendliness. A clear definition of the required e-skills for all actors involved in the internship could thus improve the chances of success. On the other hand, appropriate training, distribution of manuals and codes of conduct on the use of ICT can also solve the possible lack of technical knowledge and e-literacy. Before the start of the virtual work placement, preparatory ICT supported modules and courses could be foreseen. Throughout the work placement, training and support should be provided (via help modules, FAQ, helpdesk possibility, contact person etc.). Similar to the assessment, all organising institutions should make clear agreements with one another as to who is responsible for support (the home or host university) and on how support will be provided.

In sum, although the introduction of virtual components in work placements is undeniably motivating, it remains challenging. Considering its early life, virtual work placements are still in a "trial and error" phase. They cannot be delivered as plug-and-play yet. Especially the organisational aspects require crucial attention.

## **6 CONCLUSION**

Virtual mobility is mostly used in the context of student exchange programmes in higher education as an opportunity to broaden international cooperation and collaboration initiatives to those without the flexibility or resources for physical relocation. In this paper, we argue that the increasing demand for international work placements by learners and companies can profit from the integration of virtual mobility as well. In addition to the creation of enlarged access, virtual work placements also bring with them new forms of flexibility. These opportunities could be reached through the organisation of fully virtual work placements or through the integration of targeted ICT supported learning before, during and after a physical work placement. Notwithstanding the advantages of each opportunity, virtual mobility is not an out-of-the-box solution yet. Further research will be done in the framework of the EU-funded project EU-VIP, where both types of virtual placements will be tested through the set-up of numerous different pilot activities.

We do not argue that a real, physical work placement should be substituted by any virtual form. Rather, it should be recognised that both are different ways of professional learning, each with their own (dis)advantages. Therefore, the argument that virtual mobility cannot (yet) realise the intensity of social interaction or reach the depth of cultural exchange of a real, physical experience should not limit us in taking advantage of the many constructive aspects related to this sort of learning outlined above. A blended form of work placements, which integrates virtual components in the physical internships, can already make for richer learning experiences than solely physical internships.

Essentially, an ideal internship is a blend of virtual and physical components: a physical work placement could profit from virtual support mechanisms; a virtual work placement from a face-to-face encounter.



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