

Scenarios for the Integration of Virtual Exchange in Higher Education

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ABSTRACT

This paper describes the results of the analysis carried out within the Erasmus+ FRAMES project (<https://frames-project.eu/>) which collected and analysed Virtual Exchange (VE) case studies building upon desk research and through an open survey, so as to identify and describe various scenarios of accredited VEs. By using a qualitative methodology based on pattern matching analysis, collected cases were aggregated into four scenarios to be potentially used by a variety of European Higher Education Institutions (HEIs): VE as a preparatory or follow-up activity to physical mobility (blended mobility); VE as an intertwined component of physical mobility (blended mobility); VE as a stand-alone learning activity; VE as a component of a course. The main conclusions and recommendations revolve around the need to expand the number of potential scenarios across all disciplines and contexts and the urge to train academic as well as administrative staff to facilitate the integration of VE in HEIs.

Keywords: Virtual Exchange, Internationalisation, Blended Mobility, Accreditation, Recognition, Integration,

INTRODUCTION: CONTEXT AND KEY CONCEPTS

Study abroad and other forms of physical mobility have been an important component of the internationalisation strategy and educational offerings of many higher education institutions (HEIs) worldwide in the last decades, and since 1987 the Erasmus programme in Europe has enabled millions of students to obtain an international experience as part of their university education (European Commission, 2017).

It is, however, true that physical mobility is still aimed at a niche and somewhat eclectic market. Although the goal was to reach 20% of those graduating in the European Higher Education Area by 2020¹ (Louvain Ministerial Communiqué 2009), the remaining 80% does not have the excellent educational opportunity of living and studying abroad for a certain period of time. In recent years, stakeholders have explored VE, which can complement existing forms of physical mobility, as an additional pathway to obtain an international and intercultural experience. Research has found that VE can help develop students' intercultural and communicative skills (Avgousti, 2018; Çiftçi & Savaş, 2018; O'Dowd, 2021), digital literacies, intergroup relations, and ability to work in international teams (O'Dowd & Beaven, 2019), thus favouring the acquisition of those transversal skills and competences which are highly required by the labour market today. VE can also contribute to the internationalisation of the curriculum and Internationalisation at Home (IaH) (De Wit, 2016), thus enabling an increasing number of students to acquire intercultural competences without having to travel abroad for their physical mobility.

Currently, and especially since the global health crisis that forced education to move on-line, a high number of universities are already implementing VE practices as a curricular alternative or as a component of a course. Equally, some universities are starting to explore blended mobility and VE. Nevertheless, universities exploring blended mobility and VE for the first time, as well as those having already gained practice in these activities, still seem to experience two great challenges:

¹The total number of physically mobile students per year is still quite below the target set, however. For example in 2017 there were 325.000 student mobilities out of 17,340,000 tertiary level students (<https://op.europa.eu/en/publication-detail/-/publication/519aa03d-1f0b-11e9-8d04-01aa75ed71a1/language-en/format-PDF/source-search>).

- i) how to design and implement blended mobility and VE schemes that are inclusive and intercultural?
- ii) how to integrate and accredit blended mobility and VE activities as a stable component of their academic offer?

To address these two challenges, this article presents the results of an investigation which collected and analysed VE case studies. The case studies will provide examples of integrated and accredited VE practices in Higher Education. We refer to ‘accreditation’ as the process of granting official status to the knowledge, skills, and competences developed as a result of a course or of an educational experience (e.g., an internship) by a HEI. As the term ‘accreditation’ implies, this must be done through the process of granting credits. We differentiate the term ‘accreditation’ from ‘recognition,’ keeping in mind that ‘accreditation’ and ‘recognition’ may have different meanings or refer to different processes in various contexts. We use the word ‘recognition’ for situations when a course or educational practice is recognised, but this is not done through the granting of credits. Recognition can be done, for example, through the award of certificates, open badges or another type of recognition that does not imply credit recognition.

Before presenting our VE case studies and the results of our analysis, we describe and clarify terminology regarding types of mobility in the following section, to have a common understanding of the main concepts that are key to this study. Following this conceptual clarification, the methodology adopted in this study is presented. The second part of the article focuses on the different scenarios identified through the data. Finally, we give some conclusions and recommendations for the future based on the scenarios we discuss to move further the ongoing debate about the integration of VE in Higher Education.

Terminology when Talking about Virtual Exchange and Mobility Modalities

Despite the increasing expansion of VE practices connected to mobility schemes and programmes, there is still some confusion in the terminology used by different stakeholders, particularly when referring to virtual mobility and exchange, or blended mobility. While ICT (Information and Communications Technology) is at the centre of all these educational practices, there are significant differences among them. Within the FRAMES project² (Beaven et al., 2021) these concepts are well differentiated.

² FRAMES (<https://frames-project.eu/>) is a two-year co-funded project with support of the Erasmus+ programme of the European Union (nr. 2020-1-IT02-KA226-HE-095196) that aims to foster an harmonised implementation and accreditation of VE, as an integral part of (blended) mobility approaches, among

Following the definition provided by the Virtual Exchange Coalition (<http://virtualexchangecoalition.org/>), we understand VE as: “technology-enabled, sustained, people-to-people education programs”. In VE there is an element of collaboration and exchange between participants, with a focus not only on content learning but also on the development of transversal skills, including intercultural communication and digital literacies. A core principle is that the collaboration needs to be sustained: in other words, a one-off meeting - such as taking part in a webinar - does not constitute a VE project. Terms such as COIL (Collaborative Online International Learning) (Rubin, 2016), Global Digital Exchange (Starke-Meyerring & Wilson, 2008), Telecollaboration (Beltz, 2001; Warschauer, 1996), Teletandem (Leone & Telles, 2016) and e-Tandem (O’Rourke, 2007) -- the latter three used primarily in the area of foreign language learning -- all share the same defining elements (Beaven et al., 2021). For an overview of the terminology and the different models and approaches of virtual exchange that have been used in higher education, see O’Dowd (2018).

In contrast to VE, Virtual Mobility is defined here as educational practices that allow students from one educational institution to follow courses organised at a different institution (usually based in a different country) without having to leave home. The essential component of VE, which is the intercultural learning obtained through collaboration between students in the two institutions, is not necessarily present in Virtual Mobility programmes. The focus of Virtual Mobility is to provide subject knowledge (possibly in an area or a specific topic not taught at the student’s home university) by taking advantage of complementary expertise, and does not require the student to interact with peers from the host institution (Van Hove, 2021). Whereas, Blended Mobility is defined as:

A combination of physical mobility with a virtual component facilitating a collaborative online learning exchange and teamwork. For example, the virtual component can bring learners together online from different countries and study fields to follow online courses or work collectively and simultaneously on assignments that are recognised as part of their studies. (Beaven et al., 2021, p.12).

Blended mobility could take two different formats: a predominantly physical mobility course, supported by virtual/online mobility, or a predominantly online course supported by physical mobility. In this case, the advantages of a (short or long) immersion are combined with the advantages of a flexible implementation of mobility, capturing both the benefits of physical and virtual mobility (Henderikx & Ubachs, 2019, p. 12). As O’Dowd and Helms’ (2020) recent position paper states, blended mobility can therefore integrate a physical mobility period with a VE project. Interestingly, The European Commission has

European HEIs, making the European Higher Education Area more innovative, intercultural and resilient.

announced that blended mobility will play an integral role in the Erasmus+ programme for 2021 – 2027. This will involve combining short, intensive physical mobility for students (5-30 days) with a virtual component before, during and/or after the physical mobility.

Besides the aforementioned key concepts regarding mobility (virtual mobility; blended mobility), mobility programs themselves can take one of three modalities: physical mobility, virtual mobility, or blended mobility, with the last two being a complement to physical mobility. In physical mobility, the international learning experience is accompanied with immersion in another university and country, contributing to personal development, language learning and intercultural competences, and living in a different social and cultural context. This combination between an academic experience and immersion makes physical mobility attractive for students and highly valued by teaching staff, although a minority of students typically benefit (Henderikx & George Ubachs, 2019, p.14). These mobility formats do not need to be exclusive and can be complementary and interact among each other, in some cases using innovative pedagogies such as VE (O' Dowd, 2013).

The revision of the terminology presented in this section sets out the groundwork for the forthcoming analysis of the scenarios emerging from our data analysis. In the next section we detail the methodology used in the current study.

METHODOLOGY

This study's methodology unfolded in two stages. First, to identify and describe various scenarios of accredited VEs, existing VE case studies from multiple sources were collected and analysed. The primary sources used were the EVOLVE³ (Project Team, 2020) report and a published collection of case studies (Helm & Beaven, 2020), due to the fact that they represent the most in-depth and updated collections of VE case studies relevant for the purposes of this analysis. As the study was conducted under the umbrella of the Erasmus+ FRAMES project (<https://frames-project.eu/>), the consortium partners were also invited to map relevant initiatives from their own or from other institutions to be considered for inclusion in the collection of case studies. In this first stage, our methodology consisted of “pattern mining, a process of discovering and displaying previously unknown interrelationships, cluster and data patterns” (Zhou et al, 2010, p. 107). Pattern mining is one of several possible data analysis methods. In our own study

³The EVOLVE project (<https://evolve-erasmus.eu/>) was funded as a Forward-Looking Cooperation Project under Erasmus+ Key Action 3: Support for policy reform, Priority 5 – Achieving the aims of the renewed EU strategy for higher education (EACEA 41/2016). EVOLVE (Evidence-Validated Online Learning through Virtual Exchange) was conducted as a project to mainstream Virtual Exchange (VE) as an innovative form of collaborative international learning across disciplines in HEIs in Europe and beyond.

we opted for a pattern mining approach chiefly because it allowed us to concentrate on identifying features that describe specific patterns and items that typically occur together in different VE practices. These include identifying the aim of the VE and the number of active participants. Pattern mining also helps to establish the various types of activities and collaborations. Finally, pattern mining readily offers the institutionally recognised status of the activities as well as the complete duration of the VE. After analysing these different patterns, multiple scenarios arose from the cases collected in this first stage: VE as a preparatory or follow-up activity to physical mobility; VE as an intertwined component during a physical mobility; VE as a stand-alone learning activity; VE as a component of a course (traditional or online); VE as an opportunity of internship/placement; and VE as an opportunity for staff development (blended or stand-alone). From amongst all of these, four scenarios were extracted and aggregated based on their potential application to every European HEI.

The second stage of this study consisted of data collection via a survey that was sent out to potential stakeholders (consolidated VE practitioners, coordinators of other VE projects distributed through VE Associations such as Uni Collaboration) to collect further examples of the scenarios that emerged from the first stage of the study. The call for participation in the poll was an open dissemination call and did not exclude any respondents. There were no explicit criteria for excluding any respondents and we ended with a final tally of 20 discrete responses.

The survey, designed in Google Forms (see Appendix 1), was aimed at investigating VE initiatives that were taking place at survey respondents' institutions through the collection of a description of VE practice, including its accreditation and integration status, and the type of pre-identified scenario with which the practice could be matched.

A total number of 71 cases were collected throughout the study. The criteria for the selection of cases were:

1. Specific criteria within scenarios: extent to which the initiative illustrates at least one of the scenarios identified in the first stage of the study;
2. Quality over quantity was also considered. For instance, the high number of participants or a large-scale practice did not have priority as a criteria;
3. Potential for transferability to other HEIs in Europe; in other words, that VE is not context specific and can be implemented in other HEIs;
4. Sustainability in the short and long term regarding human and financial factors;
5. The case had to be a permanent addition to the curriculum, rather than the VE being perceived as an ad hoc measure aimed at replacing physical mobility in an emergency situation (e.g., COVID-19);
6. An overarching integration / accreditation strategy had to be in place or in progress;
7. Potential for scalability while maintaining quality & sustainability;
8. "High impact" of the case, in the sense that the case features high in many of the established criteria of this list.

As general criteria, the following aspects were also considered. More geographical spread – to have a good representation of the European context - and greater interdisciplinarity, in the sense of multidisciplinary projects exchanges. The inclusion of different types of HEIs was also considered: both public and private institutions, Comprehensive and Applied Sciences universities, research institutions and universities in arts and music.

To guarantee the validity of the results, each project partner was asked to complete one or more detailed case studies on a mapped initiative comprising 71 cases as a whole using a common template. Equally, each of the case studies was reviewed by a different partner institution. Furthermore, a peer-review conducted by the external quality expert -- appointed for the FRAMES project -- validated the report of the different scenarios.

RESULTS

The FRAMES team identified four scenarios in this study and we now use these scenarios to describe how to integrate VE projects into educational settings. In addition, we relate the key benefits as well as the major challenges for each scenario, and we refer to specific relevant cases which are fully detailed in the FRAMES report (<https://frames-project.eu/outputs/scenarios/>), so as to provide a better idea of how the scenarios can take shape.

Scenarios

Virtual Exchange as a Preparatory or Follow-up Activity to Physical Mobility (Blended Mobility)

In this scenario, VE is offered to students either before or after physical exchange and is thus an example of blended mobility. When it takes place before physical exchange, VE is mainly aimed at the students' linguistic, cultural, and psychological preparation before the exchange itself, while if VE follows physical exchange, the focus is more on helping students reflect on the VE experience and then reinforcing and fostering cooperation after mobility. On certain occasions, VE occurs in a timeframe between the physical exchanges of two different cohorts and therefore involves both former and future mobile students from the same institution. In these cases, a strong social bond between cohorts is encouraged, as future mobile students build upon the experience of already mobile ones to get ready for the exchange.

The VEs fitting this scenario prove to have a great impact on students' preparation for their mobility experience, both in terms of practical and logistic aspects of living abroad - see for instance the eTandem (Griggio & Pittarello, 2020) and iTell PREP (Giralt & Jeanneau, 2016) projects. In terms of subject knowledge, the case of the “Trans-Atlantic Engagement VE” in Dentistry (Waterhouse et al, 2020) is a good example in which participants compare various policies and practices in place in different countries to expand their discipline-practice knowledge in preparation for their journey abroad. Furthermore, as can

be witnessed in the eTandem project, this type of VE demonstrates that students who might be interested in an online exchange can be involved, despite not being/having been mobile, since they can practise their target language and develop intercultural competences through VE participation. These students frequently act as buddies for the mobile students visiting their universities in the next semester.

On the other hand, the main challenges arising from these VEs are twofold and can be summarised as follows: (1) the wide variety of participating students who might greatly differ in their language proficiency, subject-matter knowledge, and degree level specialisms; and (2) the lack of full recognition for all participating students, unless the VE has been fully integrated at institutional level as a useful tool to prepare the students for physical mobility. For example, by inserting the VE within already existing ‘mobility preparation’ or ‘transversal skills’ modules, the participating universities may show their various levels of involvement and commitment, which may result in different motivation levels for students and indeed, the future sustainability of such initiatives.

Virtual Exchange as an Intertwined Component of Physical Mobility (Blended Mobility)

This is another example of blended mobility, where the VE is “intertwined” with physical mobility into a single educational experience and is thus directly related to the activities undertaken during physical mobility: virtual tasks and activities are key for the students to be able to participate in the activities undertaken during the physical exchange. VE may be part of a specific initiative - e.g., a summer school such as the NICE project (Network for Intercultural Competence to Facilitate Entrepreneurship, 2020) or an international conference as the Euroweek VE (Professional Inter-University Management for Education Networking, 2020) - or of a wider activity (if students set up a specific project during their mobility), or also take place while students are abroad, for example through a ‘while abroad’ module designed by two or more institutions.

This type of VE enables HEIs to offer a semester-long international and intercultural experience with only a short physical mobility period and is thus more inclusive of students who are unable to travel for longer periods of time. The main challenges linked to this scenario are, in addition to sustainability, the different recognition and accreditation procedures adopted by participating institutions, which may also make the international dimension of the experience invisible, for example when individual universities grant credits to their own students as if the VE had been delivered only by the university itself. The effort should hence be made by member universities to further collaborate to find a shared recognition and accreditation process.

Virtual Exchange as a Stand-alone Learning Activity

This scenario includes those VEs which are not embedded within longer modules, nor seen as a part of a blended educational experience. The VEs fitting

in this scenario are the result of a close collaboration with partner institutions and see students working together from different cultures and countries similar to other VEs. The main feature, however, of this type of VE regards the recognition and accreditation of the VE as a learning activity on its own, which may occur in various ways: as a compulsory or elective course of a broader curriculum; as a ‘practicum’, i.e. involving practical work; as a transversal skill module offered to all students in an interdisciplinary approach; or as an extracurricular activity reported in the diploma supplement with additional credits. This is where the student international/intercultural experience during the VE is visible.

This solution is a tool to support the Internationalisation at Home (IaH) strategy of an institution, as they offer a more inclusive opportunity by satisfying the needs of those students who cannot be physically mobile for various reasons. Very frequently, these VEs are provided by an external organisation⁴, as is the case with the Soliya (<https://soliya.net>) or Sharing Perspectives Foundation (<https://sharingperspectivesfoundation.com/>) ready-made VE programmes⁵, ensuring high quality and external evaluation and monitoring. In this case, the university time investment is very limited.

On the other hand, recognition and accreditation of such ready-made courses may result in more challenge due to the perceived reluctance, at university level, to assign credits to a course offered by an external organisation. To overcome this challenge, those university units concerned need to understand thoroughly how such programmes are developed, and thus integrate the assessment process. If the VE is instead entirely developed by internal teaching staff, they will be able to negotiate accreditation within their own institution and hence overcome this recognition challenge, as is the case in the “Teaching and Learning in Primary Education in International Comparison” course, included in the educational offer of the University of Erlangen-Nürnberg and being addressed to future teachers (<https://frames-project.eu/teaching-and-learning-in-primary-education-in-international-comparison>).

Virtual Exchange as a Component of a Course (Traditional or Online)

In this scenario, VE is an integral part of a standard course and must be carried out for students to successfully earn course credit. To achieve this aim, the integration can involve either a VE project co-designed by the teachers of the two courses or a ‘ready-made’ VE within a wider single course. Consequently,

⁴ See O’Dowd, 2018 (p. 15-16) for an extensive definition and perspective on ‘Service Provider’ approaches to virtual exchange.

⁵ See for example the integration of the the *Soliya Connect Program* within the educational offer of the University of Padova since 2009 <https://frames-project.eu/soliya-connect-program/> and the *Climate Movements* programme designed by the *Sharing Perspectives Foundation*, which is currently offered by the ESIEE Paris Engineering School.

recognition and accreditation of the VE component are connected to other course requirements and the VE supports the specific learning objectives within that course, with no requirement for additional credits or other forms of recognition.

This type of VE helps to give the course an international dimension and to work across disciplines, making students consider complex problems like climate change and sustainability. Nevertheless, depending on whether the VE component is a compulsory or elective part of the course, student motivation and commitment might vary, especially when it is compulsory for one cohort and voluntary for the students in the partner institution. Another challenge occurs if the VE is integrated in an existing course without increasing the number of credits assigned to the course: to avoid the risk of an increase in the students' workload, the VE component will need to replace part of the existing content. Integrating a teacher-designed VE seems the better option to tailor the VE to suit their specific disciplinary area, schedules, learning objectives and assessment, and it is relatively easy to design an activity based on a Problem Based Learning (PBL) approach. Owing to its very specific nature as an innovative, peer-led and student-centered pedagogy, VE is very useful to apply in PBL, which has a student-centered learning approach wherein learn about a subject by working in groups to solve an open-ended problem, which is what drives students' motivation and learning. In the case of a co-designed VE, following a PBL approach, the course could also include a short mobility component, whereby students present the results of their projects to a wider audience. An interesting example of this type of co-designed VE, experiencing the benefits but also the challenges outlined above, is offered by "Shared Garden" (Fernández-Raga & Villard, 2020), a transdisciplinary VE which combines English, Science and Engineering.

Integrating a ready-made VE enables students to bring their own specific expertise when addressing global issues together with their peers located far away, and thus develop crucial skills and understanding to work and live in a global society.

In terms of challenges, when the VE as an integral component is ready-made, this needs to be embedded in the wider course, otherwise it is perceived by students as a disconnected element in their learning process. Students need to understand how the learning objectives of the VE activities contribute to the overall objectives of their course. Furthermore, the integration of an interactive open on-line course and VE sessions into a module requires substantial institutional support as well as an important commitment by the module coordinator in guiding students in what is perceived as a new pedagogical approach. This is heavily evidenced by the communication across cultures module, a content-specific module offered at the University of Limerick (UL), whereby students are required to participate in the Cultural Encounters ready-made VE provided by the Sharing Perspectives Foundation. By attending the VE, students have the opportunity to put into practice intercultural communicative competence and cultural and intercultural awareness skills, after an introductory part of the module which focuses more on theory (Giralt, 2020).

Regardless of the nature of the VE, even when integrated within an existing course, providing a VE experience for students requires (both human and

financial) resources as well as a strategy for showing recognition and accreditation of the VE component.

DISCUSSION

Potential Disciplines and Future Scenarios for the Development of Virtual Exchange

Extensive evidence suggests that VE has the potential to develop intercultural skills and competences when implemented in HEI courses (Avgousti, 2018; Sevilla-Pavón, 2019). Commander et al. (2022) take a broader look at the impact of VE on participants who are enrolled in classes that represent the areas of science, business, arts, social sciences, education, and public health. Their results indicate that VE is related to increased interest in other cultures and increased motivation to learn and experience new things. Commander et al.'s (2022, p.16) findings underline the suitability of VE for providing wider access to inclusive and intercultural experiences for all students. Our scenarios for VE and mobility may also be in-line with these results.

According to research and teaching practice reports, VE is a pedagogical practice present across disciplines (O'Dowd, 2021). However, there are some disciplines in which VE seems to have emerged earlier and stronger than in others. The Language Learning discipline (Dooly & Vinagre, 2021) is one of them, with multiple examples identified in the scenarios presented in the previous section (i.e., Scenario 1, e.g., eTandem and iTell PREP). Despite VE being present in other disciplines such as Business (Koris et al, 2021), STEM (McCollum, 2020), or Education (Guidry et al., 2020), there are fewer of identifiable practices in other disciplines.

In order to highlight that VE can develop and take various forms, we need only to consider the example of the case study by Gorman et al. (2020, p. 23) that examines a joint project in performer training and rehearsal using a variety of telepresence and app-based technologies. This VE is an example of performing arts education that evolved according to the needs of the faculty and students and illustrates a strong desire to co-create across borders, in this particular case: “in a rich field for theatre pedagogy [...], as our connections with each other redefine what we think of as ‘presence’, perhaps digital solutions on this scale for performing arts education can offer new ways to preserve our live work for the future” (Ibid, p.35).

Having now considered various samplings of VEs across disciplines and the different forms that exchanges can take, it is worth noting the crucial task of establishing and maintaining an effective Community of Practice within VE. Typically, as other researchers have highlighted, there appears a natural progression in the role of the VE when it broadens and extends the activities of the Community of Practice and engages with communities of research and practice in interdisciplinary fashions (O'Dowd, 2021). For instance, when new practitioners wishing to engage with VE seek support and advice from colleagues working in similar or different disciplines and institutions. This collaboration may

happen at both national and international levels. However, such a novice endeavour would commonly require some planned strategies from a top-down approach (training staff across HEIs, inclusion of VE in HEI internationalisation plans, etc.) and continuing to strengthen a Community of Practice using a bottom-up approach, that is, emerging from VE practitioners.

The same variety can extend to future potential VE fields and sectors. The cases collected for this analysis lacked certain scenarios that VE can potentially explore, such as the use of VE for staff development and introducing experience-based learning for academic and administrative staff at universities with a strong intercultural approach. Another scenario to be considered is the world of student internships and traineeships and the opportunities that VE can bring them by widening their participation, as well as by integrating digital skills and including intercultural learning to the experience. A third potential future scenario is VE collaboration for PhD students and postgraduates, whereby the VE could focus on competence acquisition or could relate to their specific research interests.

Here, we present a few examples of these potential future scenarios for VE gathered after the original analysis was finalised and concluded. It should be noted that they were not present in the initial gathered cases (Stages 1 and 2). Interestingly, all examples come from Latin American institutions. From the information we elicited, the use of VE for staff development is still generally quite uncommon, be it for academic staff or administrators. Indeed, those cases that can be found are rare and often appear as a result of a specific need or challenge that brings together several universities. Once the challenge is solved, however, the VE seems no longer to be offered.

The following examples of VE illustrate the use of VE for staff development. The Centro Paula Souza (Brazil) led a staff development VE titled ‘Administração escolar internacional na pandemia’ with the universities of INACAP (Chile), UNIMINUTO (Colombia) and Aveiro (Portugal) aimed at sharing the management challenges experienced by their centres during the COVID-19 pandemic. An institution which has been involved in several staff development VEs run every year is the Catholic University of Manizales (Colombia), which has organised a twofold staff training course with partner universities. The course addressed to administrative staff was focussed on internationalisation of higher education, while the one aimed at academic staff evolved around the topic of global outreach and English-mediated teaching. Another example of a VE addressed to staff is offered by the University of Würzburg, where the initiative was aimed at developing language and intercultural skills and enabling participants to work with staff at other institutions on a personal and professional level. This has also helped establish longer lasting cooperation, share work perspectives, and prepare for physical mobility. Over the years, the project has been opened to universities in Italy and Morocco to promote it for staff at their institutions.

Curiously, the world of student internships has barely been considered as a VE opportunity so far. There are several examples of virtual or online internships but they lack the intercultural exchange learning component and focus on the content of the internship only (merely connecting online for specific work). A

case worth following, however, is the ON-IT project (<https://on-it.info/>) that aims to develop a guidance framework and practical tools to design and implement quality online tourism internships in higher education. Additionally, the Universities of La Sabana (Colombia), Austral (Argentina), Andes (Chile), Piura (Peru) and Panamericana (Mexico) organised a VE student internship programme in clinical psychology where students collaborated to solve clinical cases with different approaches, spending three weeks in each institution's internship programme (virtually) allowing for an intercultural experience embedded in the programme. This was a pilot project and the institutions are now working on institutionalising the practice.

VE for PhD and postgraduate students is another area with considerable potential for creativity. Two examples have emerged from the Catholic University of Manizales (Colombia). In this institution, two VE projects have been implemented for PhD students, one focusing on science communication competences, for students to be able to share and learn tools and resources to communicate their research projects, and a second with a disciplinary approach, which saw students collaborate to share the intercultural knowledge they were using for their dissertations.

While the pandemic has undoubtedly increased universities' interest in VE and in its implementation, frequently to overcome major challenges, it is a shared belief of the FRAMES consortium that the potential scenarios which have been outlined above may pave the way for future schemes and fields where the integration of VE may provide significant opportunities and benefits. Further research is welcome as soon as a wider number of VEs is implemented in these sectors.

CONCLUSIONS AND RECOMMENDATIONS FOR THE FUTURE

The research reported in this article presents our analysis of effective practices and authentic cases of VE implementation and integration. The subsequent identification of four pattern scenarios which clearly outline the various steps to implementing and accrediting VE at HEIs supports the FRAMES team's belief that the most appropriate way to design and implement blended mobility and VE schemes is to identify the best scenario fitting each specific HEI. The four specific scenarios illustrated in this paper may be considered as fostering inclusivity and interculturality.

The scenarios were intended to illustrate potential ways of integrating and accrediting VE within HEIs and to give an overview on how to design and implement blended mobility and VE schemes that are both inclusive and intercultural. While the overall features of each scenario can apply to all VE projects pertaining to that specific scenario, it is worth pointing out that the specific background and local context of each HEI should always be taken into account. In addition, various procedures should be in place in terms of accreditation, which can vary highly depending on the specific HEI context. One of the key features of VE is precisely its flexibility and ability to be easily adapted to different situations, as well as its inherently hybrid nature. For example, very

frequently a VE project could effectively be applied in more than one scenario, as is the case when a mobile student attends a VE as a component of a course (scenario 4) at the host university: for this student, the VE is more an intertwined component of the physical mobility. Quite often, a VE which was set up to satisfy specific needs evolves and consequently shifts from one scenario to the other. This is evidenced in the case of the joint project in performer training and rehearsal (Gorman et al. 2020), which was initially intended to provide students with an intercultural and international experience enabling them to co-create across borders from their home institutions. Subsequently, there emerged the need to add the physical mobility component to the VE. The same holds true for the VE project implemented by the University of Erlangen-Nürnberg and the University of Latvia (scenario 3), where only recently has participation in a short physical mobility been added to the VE as an option. After this VE course, students can attend the International Students' Research Conference in Riga, which takes place the following semester. Thus, the VE could also fit effectively into the first two scenarios.

As outlined in the FRAMES report, integration and accreditation of blended mobility and VE activities are deeply linked to specific national and institutional regulations and there is no one-size-fits-all solution. The four scenarios illustrated in this paper offer potential ways in which HEIs have been able to overcome the integration and accreditation challenges, yet the authors deem that further research is needed in this direction, especially to ensure a transparent recognition of VE as an intercultural and international experience. Furthermore, for such activities to become a stable component of HEI academic offers, dedicated strategy and training should be encouraged among HEI staff. This can help guarantee that blended mobility and VE activities can feature among the opportunities offered to all students. As was discussed earlier, this can take the form of preparation to/reflection upon the mobility experience, an activity which is deeply linked with the mobility experience, or as something integrated in a specific course module or a stand-alone activity.

All the aforementioned VE cases are some of many examples of how to integrate and accredit blended mobility and VE activities as a stable component of a HE academic offer, which was one of our initial research questions. As outlined in this study, the opportunities associated with the integration of VE within higher education are numerous. VE encourages and complements physical mobility, promotes inclusiveness and a diverse student body, and offers a strategy for internationalisation at home and internationalising the curriculum, but also presents challenges. Such challenges include the asymmetric characteristics of participants and the exchanges; financial and human investment are needed as is accreditation recognition by the HEIs.

Contemplating the opportunities and challenges linked to each scenario and the various ways in which the VE can be recognised and accredited in different universities, which inevitably affect students' motivation to participate in the VE, an increasing number of teaching and administrative as well as technical staff should be trained on VE. Indeed, such training could focus on exploring the

various contexts, disciplines and fields which could benefit from VE implementation in the near future.

As evidenced in the examples provided in previous sections, there is still a strong focus on VE in humanities and social sciences, also evidenced in the EVOLVE reports (EVOLVE Project Team, 2020, p. 33; Jager et al. 2021, p. 14-15) and in single disciplines, whereas multidisciplinary VEs have yet to be fully explored in their potential. As the “Shared Garden” VE (scenario 4) well illustrates, interdisciplinary VE projects have proven to be very enriching, both personally and professionally, because they enable students to work on soft skills, such as communication, teamwork, and problem solving, which will be helpful in their future professional life. Another path which might be interesting to take when looking forward, is to explore the potential of VE for different target groups, such as work placement students, PhD and internship students, administrative staff as well as academics. By doing so, the opportunities that VE potentially fosters could further be investigated. In the light of the potentially highly inclusive and scalable approach to internationalisation enabled by VE, and its ability to enhance essential soft skills, international internships and placements, which share the same internationalisation objective, are an area which could also benefit from VE integration. Finally, opportunities for staff development and/or exchange should also be considered when implementing VE at HEI level, for example by including VE in the Continuous Professional Development offerings of an institution or network of HEIs. In this way, VE could easily fit into an overarching strategy aiming at making HEIs truly international.

Note

Appendices for this article can be found on the JIS website at <https://www.ojed.org/index.php/jis>

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