Introducing Virtual Student Exchange in international university education
O'Dowd, Robert

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DAAD RESEARCH BRIEF

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ABSTRACT

Virtual Exchange (VE) is an umbrella term which refers to the numerous online learning initiatives and methodologies which engage learners in sustained online collaborative learning and interaction with partners from different cultural backgrounds as part of their study programmes. This article reviews the differences between VE and the activities of Virtual Mobility and Blended Mobility. Following that, the main learning outcomes for teachers and students engaged in VE are outlined. The article concludes by proposing how universities can consider the activity within their internationalisation programmes and how they can support its take up among teaching staff. It is argued that VE is not in competition with physical mobility programmes, nor is it an 'emergency tool' to be considered only in times of pandemics and limited international travel. Instead, VE should be considered as a preparation for or complement to physical mobility which serves to enhance the range of international learning experiences which an institution offers its students.

Introduction

The COVID-19 pandemic had a huge impact on student international mobility programmes. In the immediate outbreak of COVID-19, many international students found themselves in foreign campuses but without being able to attend classes or to socialise in their new surroundings. For others who were planning to travel, their international mobilities were completely cancelled (Gabriels, & Benke-Aberg, 2020). As an alternative, many universities offered their incoming international students virtual alternatives to being physically present on campus. In the United States, Martel (2020) found that 78% of institutions offered international students the option of taking online courses instead of engaging in physical mobility. Various European surveys carried out soon after the first year of the pandemic (European Commission, 2020; Gabriels & Benke-Aberg, 2020) reported that more than half of students had been offered taking online learning at the host university as an alternative to their physical mobility

AUTHOR

Dr. Robert O'Dowd is Associate Professor for English as a Foreign Language and Applied Linguistics at the University of León, Spain.

programme. Marinoni et al. (2020) found that virtual mobility and collaborative online learning had increased at 60% of the 424 Higher Education Institutions in their survey.

As we move on from this 'enforced' digitalisation of international education, there is a clear opportunity for universities to build on their experiences with digital learning and also to explore complementary methods to physical mobility programmes for developing students' intercultural competence and giving them structured international learning experiences. Until recently, the concept of virtual exchange and online intercultural learning as a basic tool for internationalising university education at home had still not been accepted by the academic community. But this seems to be changing. Sabzalieva et al. (2022, p. 41), writing in a large-scale report by UNESCO on online international education initiatives in the wake of the pandemic, suggest that "the global landscape lead[s] to the conclusion that the future of student mobility will combine physical international experiences with digitally driven virtual opportunities that reach a wider range of students and build greater cross-cultural awareness and skills". In this article I review the activity of virtual exchange and explore how it can contribute to the internationalisation process of university education.

Issues of Terminology: Virtual Exchange, Virtual Mobility and Blended Mobility

One of the challenges which readers new to this field will immediately encounter is the huge range of terminology which is used to talk about digital approaches to international education and the different activities which it involves. Not only are there a large number of terms, but these are often used in different ways by different authors and practitioners, and this can lead to further confusion and misunderstandings. As one reads through the literature, it becomes clear that many stakeholders do not necessarily mean the same thing when they use terms such as virtual exchange, virtual mobility or blended mobility. There is undoubtedly a heterogenous range of activities which go under these terms, but that does not mean that they should be used interchangeably or that they should be applied to activities without careful prior reflection on their characteristics.

VIRTUAL EXCHANGE

With this in mind, we define here virtual exchange (VE) as an umbrella term which refers to the numerous online learning initiatives and methodologies which engage learners in sustained online collaborative learning and interaction with partners from different countries and cultural backgrounds as part of their study programmes at their home institutions and under the guidance of teachers or trained facilitators.

Apart from the two basic characteristics of using technology and engaging in intercultural collaboration and exchange, this definition also highlights two further characteristics which are likely to be inherent in all types of VE: first, that the online collaboration forms part of students' study programmes and, second, that it involves the guidance of teachers or trained facilitators.

The first of these is an important part of any definition of VE as it allows us to differentiate between projects which are integrated into education programmes and more informal intercultural interactions and collaborations which might take place online. For example, students often interact in online social networks with colleagues and friends from other countries. This may be beneficial for their foreign language skills and their cultural knowledge, but this should not be seen as VE. VEs differ from informal online interactions in that VE initiatives are generally integrated in some way into students' formal learning and students' participation in the project is provided with some form of academic recognition, whether it be in the form of grades, credit or badges.

The second point means that VEs recognise that in order to maximise the learning potential of the online interaction, teachers need to actively structure the activity, designing tasks and providing support and assistance in the online intercultural collaborations. As Helm and van der Velden (2020, p. 3) explain "[i]n contrast to more social online activity such as participation in social networks, VE initiatives are structured and intentionally designed to produce learning outcomes".

Apart from providing a basic definition of VE, many organisations, initiatives and authors (Stevens

Initiative, 2020; Suny COIL, 2020; EVOLVE project group, 2020; Helm and van der Velden, 2020; Lee et al, 2021) propose further key attributes which they consider to be inherent to VE and which help to differentiate it from other online learning methodologies. Many mention that VE explicitly considers the development of soft skills, global competences and intercultural awareness as key learning outcomes for students. Whereas most learning scenarios will see the development of these areas as secondary learning outcomes for students, VE considers them one of the main reasons for bringing about online intercultural interaction. Of course, this does not mean that VE should not contribute to the principal learning goals of the courses in question. Both students and teachers should feel that the VE contributes to the development of their knowledge of their course subject matter - especially by offering international perspectives on the content.

Also, VE is considered to be inherently student-centred in its approach. VE is based on student-driven, collaborative approaches to learning where knowledge and understanding are constructed through learner-to-learner interaction and negotiation. The EVOLVE Project Team (2020, p. 19) explains that VE involves "following the philosophy of dialogue where participants are the main recipients and the main drivers of knowledge; learning through dialogue means that participants will be seeking mutual understanding and co-creating knowledge, based on their own experiences". So, VE means a move away from more traditional teacher-centred approaches of university education where course content is transferred from teacher to learner. Instead, in VE, students work with and analyse course content in collaborative contexts, using their international partnerships to complete projects, compare national approaches and solve real world problems related to the subject area.

In summary, VE can be seen to have six key characteristics which allow us to differentiate it from other online learning activities: 1) technology-based interaction, 2) engagement with members of other cultures, 3) integration into curriculum, 4) facilitation and support by educators or experts, 5) a strong (but not exclusive) focus on the development of soft skills and intercultural competence and 6) a student-centred, collaborative approach to learning.

VE is potentially an important contribution to universities as they move from transmission-centred forms of education to more experiential learning approaches. Writing about the role of VE in business education, Taras et. al. (2013, p. 417) argue that VE "offers a chance to experience first-hand the challenges of cross-cultural collaboration, to try what works and what does not, and as such, to engage in experiential learning relevant to international collaboration …Experiential learning has the potential to address the criticism of business education as being predominantly theoretical, passive, and unable to prepare students for practical challenges of the real world".

VIRTUAL MOBILITY

The term virtual mobility (VM) is a term which has been used to describe a very wide range of educational activities and practices which somehow involve both online learning and international education. This is reflected in some of the definitions which can be found in the literature. The European Association of Distance Teaching Universities, for example, use the European Commission's definition for VM: "a set of activities supported by Information and Communication Technologies, including elearning, that realise or facilitate international, collaborative experiences in a context of teaching, training or learning" (European Association of Distance Teaching Universities, 2019, p. 5). Similarly, the large-scale report by the UNESCO International Institute for Higher Education in Latin America and the Caribbean (UNESCO IESALC) defines virtual student mobility (VSM) as "a form of mobility that uses information and communication technologies to facilitate cross-border and/or inter-institutional academic, cultural, and experiential exchanges and collaboration which may be credit-bearing or not for credit" (Sabzalieva et al., 2022, p. 14).

However, the problem of these definitions is that they are very broad, thereby not helping researchers and practitioners to differentiate between two very distinct online activities which are currently emerging in higher education. Following the definitions proposed above, a student who takes part in an online collaborative project with international partners as part of their local course, and a student who follows a course at a foreign university for credit, are both doing VM.

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TABLE 1: DIFFERENCES BETWEEN VIRTUAL MOBILITY AND VIRTUAL EXCHANGE APPROACHES OF ONLINE INTERNATIONAL EDUCATION

Virtual Mobility - Students attend classes for a short period at another institution outside their own country, without physically leaving their home.	**Virtual Exchange – Students engage in collaborative online work with students from other universities as part of their studies at their local institution.**
Students register to complete a number of credits with the foreign university.	Students continue in their home university and follow their usual courses.
Students follow classes at the foreign university via online platforms.	As part of their work for their course at their home institution, students interact online with other students at a foreign university.
Students focus primarily on course content provided by lecturers in the foreign university.	Students focus primarily on interaction and collaboration with students in the foreign university.
Students may or may not receive credit / grades from the foreign university for their work / exams. In some cases these grades are sent to the home university.	Students receive a part of their grade in their course at the home institution for their participation and work in their online project.

While it may be useful to use a term such as VM or VSM as an umbrella term for all types of online international education initiatives, there are clearly two very different types of activities being carried out which deserve to be treated separately and to be referred to using different terms. There are other authors who seem to agree with this, and they limit VM to the different ways in which students can follow courses or work placements in other countries using online technologies. Rajagopal et al. (2020, n.p.), for example, explain that in VM "learners enrolled as students in one higher educational institute have the opportunity to follow a course at another higher educational institute in the online mode. As this is institutionally supported, VM participants enjoy the formal advantages of studying at that other institute, such as instructional support and assessment of their performance in the course. Also, the gained credits for a successfully completed VM course are accepted by the students' home institutions and accredited as part of the curriculum".

In the FRAMES project's report on scenarios for the integration of VE in Higher Education, Pittarello et al. (2020, p. 12) define VM 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".

If we adopt this more refined definition of VM, the many distinctions between VE and VM can be outlined like in table 1.

BLENDED MOBILITY

A third, related term, is blended mobility (BM) which can be defined as the deliberate combination of both physical mobility and structured online collaboration (European Commission, 2021). In other words, BM programmes combine the engagement of students in online activities and collaboration with teachers and students from other countries on their subject area with the opportunity to travel to one of the partner universities to work together at the same location. Following the terminology we have used to date, we could say that BM can combine activities of both VE and VM with physical mobility.

BM is a relatively new activity and very little evidence of research can be currently found in the literature. Reports of BM being put into practice are growing however, and there are a number of institutions that are using blended models for joint and double degrees and various reports of pre-mobility projects exist which illustrate how VE initiatives are being used to prepare students for their physical mobility programmes (Batardière et al., 2019; Pittarello et al., 2020).

Interest in the activity is undoubtedly going to rise in the near future, in Europe at least, as the most recent Erasmus+ programme guide (2021), which lays out the European Commission's programme for supporting international student mobility learning for the period 2021-2027, has put a great deal of emphasis on institutions introducing BM into their internationalisation programmes. The programme promotes so-called "blended intensive

programmes" which are defined as "short, intensive programmes that use innovative ways of learning and teaching, including the use of online cooper-ation" (p. 47). These programmes require physical mobility to last between 5 days and 30 days and to be combined with a virtual component facil-itating collaborative online learning exchange and teamwork.

Table 2 below provides an overview of the three terms and their differences.

Having reviewed the differences between virtual exchange and the related terms virtual mobility and blended mobility, we now look at how VE is being integrated into university education. We then go on to review the main learning outcomes of VE which have been reported in recent large-scale research studies.

TABLE 2: A COMPARISON OF VIRTUAL MOBILITY, VIRTUAL EXCHANGE AND BLENDED MOBILITY

Term	Definition	Common activities	Related terms
Virtual Mobility	Educational practices that allow students from one educational insti-tution to follow courses organised at a different institution without having to leave home.	On-line lectures (live or pre-recorded) Interactive quizzes and polls Reading / viewing of course materials with support of annotation tools Online tutorials with teaching staff Students usually receive credit at the host university	
Virtual Exchange	Online intercultural collaborative projects integrated into courses.	Discussion of course materials Comparison of different national/ cultural contexts and perspectives Collaborative project work Students are awarded credit / grades in their local classes	Telecollaboration, Collaborative Online International Learning (COIL), e-tandem, online intercul-tural exchange.
Blended Mobility	Blended mobility can be defined as the deliberate combination of both physical mobility and structured online collaboration.	Online collaborative project work Online lectures On campus project completion and group activities Students are awarded credits at host university – these can be recognised by home institution	Blended Intensive Programmes (Erasmus+ Programme Guide 2021-2027)

How is Virtual Exchange being integrated into university education?

Currently, VE is being employed in universities in three different ways which support different aspects of internationalisation.

First, VE can be used to prepare students for their study abroad periods in **Pre-mobility VE**. In this case, students are engaged in VE with partners from the partner university before their international mobility. Pittarello et al. (2020) provide various examples of universities that offer their students the opportunity to engage in online collaborative programmes with partner students in the universities or at least countries where they intend to study. One of these was the i-TELL PREP (Intercultural Telecollaborative Learning for Pre-mobility preparation) project which brought together students from the universities of Limerick, Ireland and León, Spain to complete collaborative tasks on cultural and intercultural topics such as the home university, the host country, expectations about living abroad, and comparing university life and academic systems in the two countries. The authors report that pre-mobility VE programmes such as this one can provide students with practical information and insights into the logistical aspects of living abroad and studying in another academic environment. This is invaluable in contexts where differences in timetables, teacher-student interaction and grading systems can often take students by surprise when they first arrive in their new environment. Used in this way, VE also gives the students an opportunity to begin using their target language with 'real' members of the other culture and also opens up the opportunity of students having a contact in the partner university upon their arrival. The potential of integrating universities' pre-existing 'buddy programmes' with pre-mobility VEs undoubtedly deserves to be explored further. Another example of this approach is the Tü-VIPP (TÜ-Virtual Intercultural Preparation Package) from the University of Tübingen in Germany which offers incoming students a VE programme with local students before they attend the university in their semester abroad.[1]

The second involves **blended mobility** projects which combine periods of online collaboration between classes before travelling to meet and complete projects at one of the partner universities. An example of blended mobility reported by the European Association of Distance Teaching Universities (2019) is the Adult Education Academy organised by the Julius- Maximilian-University Würzburg, Germany and its partners.[2] This involves an online preparatory phase, a two-week intensive programme on Würzburg campus and a subsequent online follow-up phase that can be taken by doctoral students. Pittarello et al. (2020) describe various blended mobility initiatives, including the Euroweek and Nice projects. In both cases students are engaged in virtual international teams to work on projects or problem solving issues and then are invited to attend a physical event at one of the partner universities to present their findings.

Finally, the most common application of VE involves **class-to-class VE**. In this case, teachers in two or more classes organise collaborative tasks for their students to complete online as part of their coursework. This form of VE is common in foreign language education, teacher education as well as in many other curricular areas. An example from Germany involves a class of Initial Teacher Education at the University of Bochum that is collaborating with a partner class at the University of León in Spain as part of the VALIANT (Virtual Innovation and Support Networks for Teachers) project.[3] In this project, students meet in weekly virtual meetings to compare the education systems in both countries and to elaborate teaching materials which can be used in both countries. Students are assessed through a portfolio and class presentations.

What do students learn from Virtual Exchange?

Recent years have seen the publication of a plethora of impact reports and studies which present the findings or projects, initiatives and organisations who are engaged in promoting large-scale VE initiatives. For the most part, these publications

1   See also: https://uni-tuebingen.de/en/180552

2   See also: https://www.paedagogik.uni-wuerzburg.de/lifelonglearning

3   See also: https://valiantproject.eu

present both qualitative and quantitative data on what students learn from VE and what teachers and institutions can do to support this learning. Thanks to these research reports and impact studies we are now able to see some common findings emerging in relation to student learning outcomes, how to provide support for teachers as well as examples of good practice for implementing VE in university classrooms.

Undoubtedly the most significant finding which emerges from a review of the different impact studies and reports on large-scale VE initiatives is the high number of results which the publications have in common. Even though these studies are based on various models of VE and involve learners from a wide number of geographical and institutional contexts, there are a number of student learning outcomes which appear repeatedly across the data.

The first of these findings is that VE is a very popular learning activity among students. The reports by Erasmus+ VE, the Steven's Initiative, EVOLVE and EVALUATE all report high levels of student satisfaction with VE as a learning activity. Indeed, in many studies, students reported that they would highly recommend VE to their friends and classmates and in some cases, studies also reported that students often maintained the relationships and friendships after the VE had ended.

A second common finding is that students who engage in VE report developing cultural knowledge during their exchanges. This may be cultural information about the partner culture itself or about the relationship between the participating countries (Stevens Initiative, 2019). However, in many cases, students also reported learning factual information about many topics and social issues including immigration, religion, gender roles and the differing national reactions to the COVID-19 crisis (EVOLVE Project Team, 2020; Helm & Van der Velden, 2020). Perhaps more significantly, students also reported a growing awareness of cultural diversity and becoming aware of their partners' multiple identities and the need to avoid regarding cultures as monolithic (EVOLVE project team, 2020, the EVALUATE group, 2019).

Confirmation that students develop their foreign language skills is also well evidenced in the reports. In the 2020 "Erasmus+ Virtual Exchange" final report (Helm, & Van der Velden, 2020), 79% of participants reported improvement in their foreign language skills. In this report as well as in others (such as the EVALUATE report (2019) and the EVOLVE report on student learning outcomes (2020)), it was seen that participating in VE gives learners the opportunity to overcome their anxiety of communicating in a foreign language and also to use the foreign language in a meaningful way about issues that are relevant to them. For many, VE is therefore a shift away from the traditional approach to foreign language learning which is often focussed on grammatical accuracy.

There is also repeated evidence across the publications (see, for example, the SUNY COIL report by Guth & Helm, 2017 and the EVOLVE report (2020) on student learning outcomes) that VE enables the development of a wide range of transversal or 'soft skills' which are considered very relevant for the modern workplace. Skills which are mentioned repeatedly across the studies include teamwork, flexibility, intercultural collaboration, problem-solving as well as aspects of digital competence related to online communication skills.

Many studies also reported that their informants felt that they were now better prepared to communicate and collaborate with people from different cultures. However, the key to this was ensuring that the students had been engaged in interculturally challenging tasks which required high levels of negotiation and collaboration (EVALUATE group, 2019; Helm & Van der Velden, 2019). It appears that VE can best enhance students' collaborative and intercultural skills when they are confronted with a range of collaborative hurdles and challenges which require them to find creative ways to collaborate and communicate successfully with their international partners. Simply put, when tasks are carefully designed, VE can help push students out of their comfort zone and this is when skills and attitude development is most likely to take place.

Despite these many positive results, various studies acknowledge that when they investigated students' empathy levels in their quantitative surveys, this

was not seen to have developed significantly during the VE (EVALUATE group, 2019; Stevens Initiative, 2019 and 2020). The reports give various reasons for this, including the fact that VE projects may not last sufficiently to achieve such an impact or because of the so-called 'ceiling effect' which means that no development was identified because participants had rated themselves relatively high on these competencies in the pre-test surveys and were therefore unable to demonstrate an increase in the post-test.

Having said that, there was definite evidence that VE does contribute to attitude change in other areas. In their report „Erasmus+ Virtual Exchange: Intercultural Learning Experiences", the authors found that there was significant overall gain in post-test measures of curiosity and self-esteem, as well as open-mindedness towards people with different ethnic and religious backgrounds. The exposure to different world views and beliefs was seen to heighten young people's critical thinking and appreciation of diversity. Helm & Van der Velden conclude: "Strong evidence of intercultural sensitivity was found in some of the participants' reflections. Their experience had led them to question some of their assumptions, reflect on their own beliefs and behaviours and see the complexity of intercultural relations rather than minimising difference, or seeing a binary relationship of 'us' and 'them'" (2020, p. 38).

It is clear from the evidence provided in these publications that VE is effective. But how can teachers be encouraged and supported as they take up this new methodology?

Supporting teachers in the implementation of Virtual Exchange

Many of the studies reviewed here (Nissen, & Kurek, 2020; the EVALUATE group, 2019; Stevens Initiative, 2020) also looked at the impact of VE on the teachers who run this activity. They found that participation in VE projects provides teachers with valuable experience in continued professional development and methodological innovation. In particular, VE can be seen to open up opportunities for teachers to develop new professional partnerships and

collaborative academic initiatives, to develop their own online collaboration skills and also to introduce more innovative approaches in their current teaching practices. In short, the impact on university teachers of running a VE often goes much further than the exchange itself.

However, the reports also coincide in the importance of providing teachers with adequate training in order to be able to carry out VE successfully. VE is recognized as a complex activity which requires knowledge and skills related to a number of areas including course integration, task design, choice of digital technologies and online coordination with international partner teachers. Teachers need therefore training in these areas and many reports call on universities to provide this training for their faculty.

Universities are also called on to provide sufficient recognition for the increased work which VE can involve for teachers (the EVALUATE group, 2019; Nissen & Kurek, 2020). Teachers' engagement in VE initiatives requires time and a significant extra workload. For this reason, the reports are almost unanimous in their call for teachers to be supported through the provision of academic 'rewards' such as teaching awards, time release and the recognition of VE in national and institutional teacher evaluation systems and policy documentation. Some reports, such as the EVALUATE study and the Steven's Initiative 2019 impact study, also recommend the provision of funding for short periods of mobility which will allow teachers to travel and meet their partner teacher and plan their exchange together.

Many studies report that the recognition of teachers' work is still very much a work in progress in many university contexts. The baseline study carried out in the context of the EVOLVE project (Jager, Nissen, Helm, Baroni, & Rousset, 2019) found that there was, in 2018, no institutional recognition for VE in universities and that the activity was not widely referenced in internationalization strategies. As a result, the study found that the main drivers for VE were generally highly motivated individual educators or international offices who received no explicit recognition of their work.

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Conclusion

Following a dramatic few years in the development of VE, it is clear that the activity is now much more established and understood than ever before. The work of organisations and initiatives such as UNI-Collaboration and the Stevens Initiative as well as research emerging from projects such as EVALUATE, EVOLVE and Erasmus+ VE have meant that some basic principles are increasingly being promoted across academia. The work of national organisations such as the DAAD in funding practitioners' projects has also made an important contribution to the field. To conclude, some important key points should be kept in mind when considering the role of VE in university education:

First, VE is not in competition with physical mobility programmes. Instead, VE can be employed as a preparation for or complement to physical mobility which serves to enhance the range of international learning experiences which an institution offers its students.

Second, VE is not an 'emergency tool' to be considered only in times of pandemics and limited international travel. There is a clear body of evidence which demonstrates its value for developing students' foreign language skills, intercultural competences, soft skills and digital competences. This evidence of its effectiveness as an educational tool demonstrates its value as an integral part of foreign language education programmes and *Internationalisation at Home* strategies.

Third, VE requires integration into the university curriculum and explicit recognition of students' learning outcomes. This can be done by awarding credits for their work but also by exploring the possibility of micro credentials such as learning badges which is gaining in importance in university education.

Finally, in order to support the take up of VE, universities should be willing to provide training for teaching staff as well as offering incentives for teachers to invest the necessary time in organising and running their online intercultural exchange projects.

Of course, much work remains to be done but this requires that VE continues to receive interest and attention from all university stakeholders. Starke-Meyerring and Wilson (2008) warn that the success of globally networked initiatives such as VE depends on three key pillars – robust partnerships, innovative institutional policies and innovative pedagogies (p. 222). This means that the future of VE will require the commitment and collaboration of three different groups in university education. First, international mobility officers will be needed to help establish international VE partnerships and networks for teachers in their institutions. Second, university management will be needed to introduce innovative institutional policies that facilitate the integration of VE into curricula and universities' internationalisation strategies. Finally, teaching faculty will need to explore new pedagogies and classroom practices which incorporate VE projects.

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