Internationalization at home in higher education: a systematic review of teaching and learning practices

María Victoria Soulé
Language Centre, Cyprus University of Technology, Limassol, Cyprus
Antigoni Parmaxi
Cyprus Interaction Lab, Language Centre, Cyprus University of Technology, Lemesos, Cyprus, and
Anna Nicolaou
Language Centre, Cyprus University of Technology, Limassol, Cyprus

Abstract

Purpose – This paper explores current teaching and learning practices, benefits and challenges in the implementation of Internationalization at Home (IaH) in higher education.

Design/methodology/approach – The study follows a systematic review (SR) protocol in accordance with the PRISMA Statement, covering published research from 2018 to 2022. Through this process, we identified 58 peer-reviewed manuscripts meeting our inclusion criteria. We examined disciplines, locations of IaH, objectives pursued, modality of the IaH implementation, activities and resources used. Benefits and challenges were also analysed.

Findings – The SR reveals a growing adoption of IaH, employing various technologies and interdisciplinary methods to foster cross-cultural competence. It emphasizes diverse teaching activities and resources, aligning with digitalization trends. While IaH brings benefits like improved intercultural sensitivity, collaboration and skills development, it also faces challenges in language, technical, personal, pedagogical and organizational aspects, highlighting its complexity.

Research limitations/implications – Our search focused on research from 2018 to 2022, potentially missing earlier trends, and excluded grey literature due to quality concerns. The SR emphasizes online collaborative efforts in IaH, signalling a shift to digital internationalization. Institutions should invest in supporting such practices aided by strategic university alliances. A critical approach to "Global-North" collaborations is urged, promoting geographically inclusive IaH initiatives.

Originality/value – This study responds to the call for critical analysis on concrete examples of IaH. Through a systematic review, it explores recent teaching and learning practices, with a particular focus on the latest technological advancements. The study specifies learning objectives and identifies relevant tools for implementing IaH initiatives.

Keywords Internationalization at home, Virtual exchange, Internationalization of the curriculum, Teaching and learning practices, Transnational collaboration in higher education

Paper type Literature review

1. Introduction

Internationalization at Home (IaH) emerged in Europe in the late 1990s out of the concern that the internationalization of the Higher Education (HE) system was leaving out the non-mobile majority (Almeida *et al.*, 2019). IaH has evolved beyond student mobility abroad to encompass all educational activities related to international affairs within domestic learning environments. Numerous efforts have aimed to define its elements and purposes, ultimately conceptualizing it as a framework that integrates intercultural dimensions into both formal and informal curricula for all students (Beelen and Jones, 2015). Recent years have witnessed the rapid advancement of IaH, particularly, with the outbreak of Covid-19 pandemic, which led to an initial closure of universities and colleges around the world with important consequences for pedagogy and internationalization (Murphy, 2020). Despite the rapid advancement and burst of research manuscripts in the specific topic, there is no recent review that summarizes current trends and directions of IaH. The absence of a recent review poses a challenge for researchers and educators seeking to comprehend the evolution and latest trends in IaH. To address this gap, this paper aims to explore the implementation of current practices, benefits, and challenges of IaH in HE. It specifically highlights technological advancements that facilitate IaH implementation. Our study is distinguished by its innovative approach, conducting a comprehensive systematic review of the most recent teaching and learning practices, with a particular focus on the latest technological innovations. It clearly outlines specific learning objectives and identifies essential tools crucial for the successful implementation of IaH initiatives. By offering detailed analysis and concrete examples, this research responds to the urgent need for a deeper analysis of IaH, thereby contributing significantly to the field. We present a synthesis of the state-of-the-art, drawing from 58 manuscripts. The leading questions guiding the review are:

RQ1. What is the current status of IaH in HE in terms of teaching and learning practices (fields of study, locations of IaH, objectives pursued,)?

RQ2. How is IaH implemented in HE (mode and duration, participants, activities and resources used)?

RQ3. What are the reported benefits and challenges of IaH in HE?

2. Literature review

Internationalization at Home is a concept that was proposed in Malmö in 1998 by Bengt Nilsson in an effort to "embrace all ideas about and measures to be taken to give all students an international dimension during their time at the university" (Nilsson, 2003, p. 31). In his work *Internationalisation at Home From a Swedish Perspective: The Case of Malmö*, Nilsson defines IaH as "any internationally related activity with the exception of outbound student mobility" (2003, p. 31). This echoes the definition of IaH by Crowther *et al.* (2001, p. 8) as "any internationally related activity with the exception of outbound student and staff mobility". Both definitions are very similar and seem to embrace the notions of equity and access (Almeida *et al.*, 2019) as IaH efforts aim at being inclusive, keeping in mind the non-mobile majority of the student body. Since IaH was developed as a concept, institutions around the world have embraced it as a means to promote global competence among a broader spectrum of students. Research highlights the benefits of IaH in fostering diverse skills, such as the development of soft skills and increased motivation of students (Barbosa *et al.*, 2020) while enhancing the acquisition of new knowledge and developing students' linguocultural awareness (Karimova *et al.*, 2023).

Universities have adopted various learning practices, including the internationalization of both the formal and informal curriculum, with the goal of fostering a global mindset and intercultural understanding among students (Leask, 2015). These practices involve open

access education, intercultural research projects, extracurricular activities, relationships and collaborations with domestic students and ethnic or minority community groups, and the integration of foreign students and academics into campus activities (Knight, 2012; Hofmeyr, 2021). Other IaH activities include cross-cultural peer-mentoring (Huanga *et al.*, 2022), delivering courses in foreign languages (Hénard *et al.*, 2012), or adopting internationalized pedagogies (Lomer and Anthony-Okeke, 2019). Barbosa *et al.* (2020) posit that IaH encompasses various modalities, including in-campus cultural diversity, specifically multicultural classrooms with a high number of international students, and Virtual Exchange (VE) also known as "Telecollaboration, Collaborative Online International Learning (COIL), etandem, online intercultural exchange" (O'Dowd, 2023, p. 21).

Previous reviews focusing on IaH practices have underscored persistent challenges, including limited educational resources, financial support, and proficiency in foreign languages (Li and Xue, 2022). Similarly, Harrison's (2015) review, which concentrates on IaH practices such as diversity as a resource, internationalized curriculum, and culturally sensitive pedagogy, reveals challenges in their implementation. Mainly, home students often resist intercultural group work and avoid contact with international peers, raising concerns about unequal access to transformative experiences. More recently, Janebová and Johnstone's (2022) critical review advocates for inclusive IaH practices that create accessible educational spaces for all stakeholders. While the review emphasizes the importance of these practices, it provides limited details on implementation and specific necessary resources. Another recent review was conducted by Mittelmeier *et al.* (2024), who focused on holistic internationalization, inclusion, active and creative learning, opportunities for reflection, and scaffolding intercultural skills. In their scoping review, they investigate how internationalization, including IaH, impacts student outcomes and experiences, which is crucial for designing effective internationalized learning. Despite its idealization as beneficial, the authors suggest that empirical evidence for internationalization's benefits remains limited.

The European Association of International Education (EAIE) Barometer underscores the complexity of internationalization strategies across institutions, suggesting that "the literature on internationalisation often argues that no one model can apply to all institutions when it comes to the development and delivery of internationalisation policy and its related activities" (Sandström and Hudson, 2019, p. 23). However, the analysis of the EAIE Barometer data suggests possible commonalities in approaches to IaH. Moreover, it raises concerns about the dominance of scholars, especially those from Western Europe, in shaping the discourse on international education in Europe. A response to this call can be found in Wimpenny *et al.*'s (2021) effort to delineate a decolonized, internationalized, inclusive curriculum whose teaching and learning practices should also be determined by the context and by local perspectives, including interaction with other perspectives, such as the Global South. Howes (2018) offers a concrete example of decolonizing or 'southernizing' curriculum through a study on the internationalization of the criminology curriculum. This study draws on southern criminology as an emerging paradigm, providing guidance for this transformative process. Another example of developing IaH approaches in the Global South is the study by Finardi and Aşık (2024) that explored the potential of a virtual exchange between a university in Brazil and a university in Turkey towards engaging the two universities in international conversations.

One of the main goals of IaH is to provide all students the possibility to access cross-cultural and international education without leaving their home countries (Li and Xue, 2022). The advancement of technology, particularly in the last 2 decades, has facilitated this goal. However, there have been no substantial developments in line with the recommendations made by Eisenchlas and Trevaskes (2003, p. 89). The authors stressed the need for critical analysis of IaH, examining both theoretical aspects and concrete examples of curriculum internationalization implementation, including specifying learning aims and suggesting relevant learning tools. An exception to this lack of comprehensive frameworks can be

identified in the practical models proposed by Agnew and Kahn (2014) for the pursuit of IaH and Internationalization of the Curriculum (IoC). The authors present clear examples of global course goals, global authentic assessment, global learning outcomes, classroom activities, and resources. Despite the comprehensive nature of Agnew and Kahn's (2014) practical model, a decade has elapsed since its publication, indicating a need for updated research, particularly regarding recent advancements in IaH with technological integration.

3. Methods
The methodology of this review was conducted following the PRISMA statement (Moher et al., 2009). The decision to utilize the PRISMA methodology was based on its recognized rigour and structured approach for conducting systematic reviews, ensuring comprehensive and unbiased synthesis of available evidence: "many studies have evaluated how well systematic reviews adhere to the PRISMA Statement" (Page and Moher, 2017, p. 10). We chose this particular methodology over others due to its established guidelines, transparency, and reproducibility, which align with the objectives and scope of our research. The methodology was also informed by the processes recommended by Xiao and Watson (2019), and by previous systematic reviews such as Caniglia et al. (2017) who reviewed transnational collaboration for sustainability in higher education.

3.1 Identification of data sources and search strategy
The review included manuscripts published between January 2018 and September 2022 and was restricted to English peer-review articles. The recent 5-year timeframe was selected to provide an extensive dataset, but one that also aligns with the conclusion point of previous reviews, ensuring a continuation of research from where prior studies left off (Agnew and Kahn, 2014; Harrison, 2015; Janebová and Johnstone, 2022; Li and Xue, 2022). In addition, the ongoing trend towards digitalization in education, including the latest technological developments, served as another criterion for restricting our review to that timeframe. We derived our dataset of articles from three databases: Scopus, ScienceDirect, and Education Resources Information Centre [ERIC]. For the execution of the search for relevant articles in the listed databases, the following specific terms were used: "Internationalization at Home" and "Higher education". Additional records were identified using other sources. This included a search in four high impact journals: Higher Education, Studies in Higher Education, Higher Education Research and Development, and Journal of Studies in International Education. The selection of these journals was informed by Whitsed et al. (2021) who analysed the characteristics of these four journals according to their rankings (Scimago Journal and Country Rank, and Google Scholar's Metrics) as well as to their high quality based on their age, size, and orientation (national or international). Related keywords derived from definitions of IaH in the literature (Beelen and Jones, 2015) were also used. The following search terms were employed:

(1) Internationalization at home-related keywords ("Internationalization/Internationalisation at home" OR "Internationalized/Internationalised curriculum" OR "comprehensive internationalization/internationalisation" OR "collaborative online international learning" OR "telecollaboration" OR "Virtual exchange").

(2) Higher education-related keywords ("higher education" OR "university" OR "college" OR "tertiary education").

The results obtained for each database and journal are presented in Table A1 (All the tables of this study are available at Appendix 1).

3.2 Search results

The initial search yielded 550 manuscripts published between 2018 and 2022 that were related to IaH and HE, 441 manuscripts were identified from three databases used in this study, and 109 manuscripts from the search in the four high impact journals. Duplicate manuscripts were excluded resulting in 505 records. Figure 1 describes the flow of information through the different phases of the systematic review conducted in this study.

3.3 Application of inclusion and exclusion criteria for refining the IaH dataset

The inclusion and exclusion criteria are presented in Table A2. These criteria were applied during the screening phase of the review, as indicated in Figure 1. During this stage, we conducted a detailed examination of articles based on their abstracts. The primary purpose of this early screening was to eliminate articles that did not align with the research questions and the established criteria. Subsequently, we performed a more comprehensive review of the full text, following the methodology outlined by Xiao and Watson (2019). During this stage, some articles were also assessed for methodological quality, data analysis, results, and conclusions, as depicted in the 'Eligibility phase' (see Figure 1).

3.4 Screening and extraction of data

Each manuscript was comprehensively read, and data were extracted according to the research questions of the study, comprising a total of 19 items adapted from Caniglia et al.'s (2017) systematic review. Table A3 shows the items employed (IE) for the data extraction process.

3.5 Synthesis and analysis strategy

The final dataset included 58 manuscripts (see Appendix 2). The review of these publications followed a deductive-inductive two-step procedure (Caniglia et al., 2017). First, a set of broad
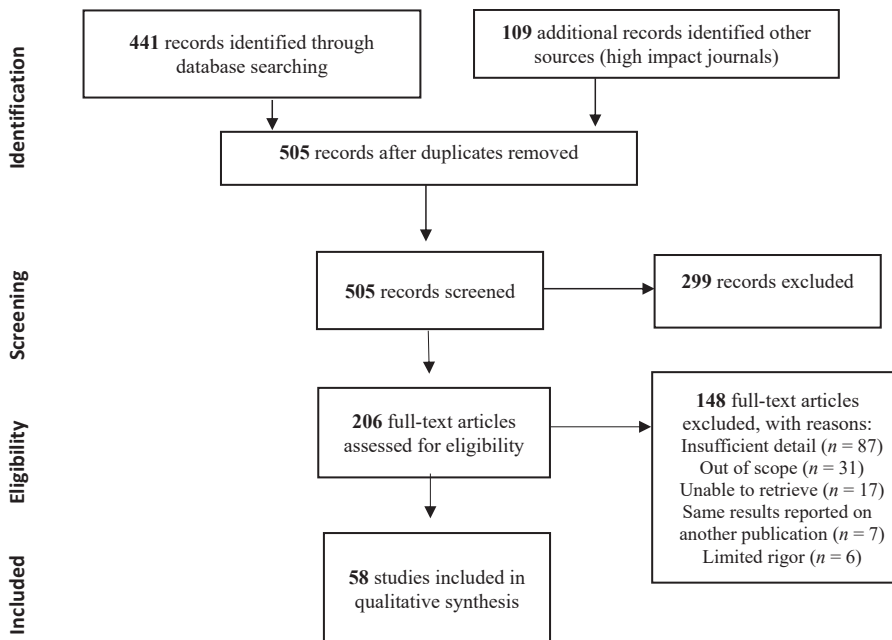

Source(s): Authors' own work

categories was developed (see Table A3); some of them included predefined values (e.g. IE9, IE10). Second, for other categories (e.g. IE11, IE18), an inductive procedure was adopted to allow for the development of new subcategories that emerged from a qualitatively synthesized procedure. In this process, relevant text chunks were identified. The categories were then organized under the RQs of this study. To ensure reliability, 10% of the data set was coded by a second researcher. Any disagreements between them were discussed and resolved.

4. Results

4.1 Current status of IaH teaching and learning practices

4.1.1 Disciplines. In terms of the disciplines involved in IaH initiatives, nearly 50% of the studies in our dataset reported having implemented IaH practices with groups of students from different disciplines. This includes the combination of a range of disciplines such as: (1) Language Studies, Information and Communications Technology, and Management in Tourism; (2) Dental Technology and the Business Management; (3) Global Nutrition and Culinary Arts; (4) Human Biology, Biochemistry and Public Health; and (5) Engineering, Management, Economics, Mechatronics and Robotics. The remaining percentage concentrates on practices carried out with only one field of studies as it is displayed in Table A4 [1].

4.1.2 Locations of IaH practices. Our dataset includes studies whose IaH practices took place in only one country ($n = 6$). These studies comprise the in-campus modality, such as Japan, or Portugal, but also studies dedicated to describe the impact of IoC such as a study conducted in The Netherlands. The analysed corpus also included studies that involved the collaboration of more than one country. These studies focus on the implementation of virtual exchange (VE). The vast majority of them include exchanges of two countries ($n = 44$), followed by collaborations among three countries ($n = 7$), and among four countries ($n = 2$).

Furthermore, the reviewed collaborations took place between two continents ($n = 35$), among three continents ($n = 4$), and more than three continents ($n = 2$). An important number of collaborations took place only within Europe ($n = 10$), other collaborations occurred only within Asia ($n = 6$), one study took place only in North America, between USA and Mexico, and one study included the collaboration of two South American countries. Figure 2 displays the frequency of countries in our dataset.
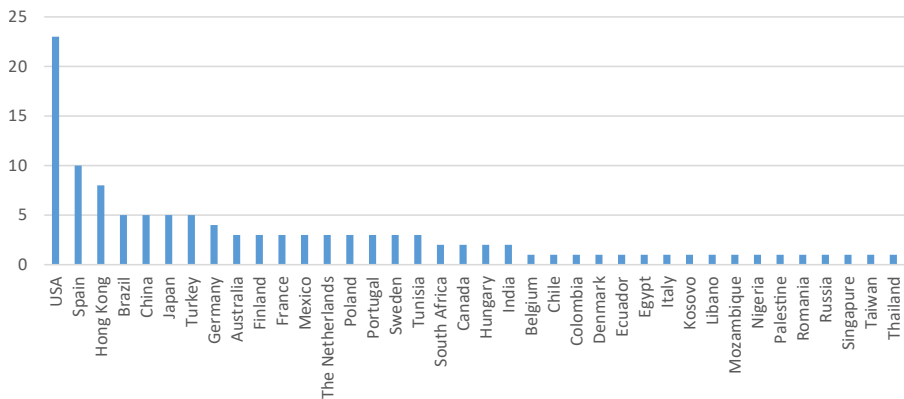

Figure 2.
Representation of countries in the IaH practices dataset

Source(s): Authors' own work

4.1.3 Objectives pursued. The reported objectives in the IaH dataset include a variety of goals that we have classified into six categories. The most prominent in our corpus is the intention to *develop students' cross-cultural competence* ($n = 34$). This aim can be found in a variety of fields of studies such as in a study with American students of Interior Design and Nigerian students of Architecture who worked together with the aim of solving design problems while responding to specific sociocultural contexts across different geographic, political, social, environmental, cultural, and economic conditions. Another example is a study with Nursing students based in Australia, Hong Kong and Sweden, where students worked in-peers with cross-cultural and student-led webinars dedicated to facilitating independent discussion. More specifically, the research team developed a generic patient case addressing common learning outcomes related to medical and nursing interventions that was common across all three countries. Similarly, another study involving South African Dental Technology students and Business Management students from the United States reports on the entailed understanding of business applications in developing a prototype to reduce material wastage in dental laboratories. In conjunction with acquiring discipline-specific knowledge, students had the opportunity to develop cross-cultural awareness and use various technology-mediated tools.

The second most representative category is related to the *development of soft or generic skills* ($n = 9$). Again, this goal can be found along different disciplines and in different locations such as in a study with Business Management students from India and Economics students from Poland, aiming at enhancing the understanding of managerial problems in modern businesses as well as understanding of the problems of cross-cultural communication. Another example involves a collaboration between Brazil and Colombia with language teaching students. The aim was to demonstrate to student-teachers how they could develop their communication skills in English collaboratively by sharing information with counterparts from a different culture. Additionally, the project aimed to expose future teachers to various technological tools.

To *enhance international collaboration* ($n = 7$) also appears in several manuscripts dealing with different disciplines and locations such as in an interdisciplinary study with Canadian students representing the disciplines of addictions counselling, public health, psychology, and management, and with China learners whose backgrounds ranged from psychology, nursing, traditional Chinese medicine, business to hospital management. Less prominent were studies aiming at *assessing the implementation of a new pedagogical design* ($n = 4$). An example illustrating this category involves a study dedicated to examining the implementation of a new performer training and rehearsal VE program conducted collaboratively between Coventry University (UK) and Tampere University (Finland).

Another inconspicuous aim present in our dataset was related to students' *development at academic and personal level* ($n = 3$). This category includes History students from Hungary and Romania, and students in Applied Physics and Measurement Engineering and Electrical Engineering from France and Spain. Finally, one paper stated that the aim of the implementation of IaH was to promote autonomy in undergraduate education in the Hong Kong context.

4.2 Implementation of IaH practices
4.2.1 Mode and duration of the IaH implementation. The implementation of IaH practices in our dataset can be categorized into two main categories: In-campus activities with IoC (10%) and online exchanges (90%). This last category comprises studies that self-report as Virtual Exchange (22/59) COIL (14/59), Telecollaboration (9/59), and Online Intercultural Exchange. When it comes to in-campus activities with IoC, some manuscripts focus on reporting solely on the activities that took place within the institutions' premises (4/59), and other self-report as IoC studies (2/59).

Our dataset displays significant variability in the time allocated for the implementation of IaH practices with some studies dedicating less than a month to them and at the other end of the scale studies dedicating two semesters. Table A5 presents all the duration spectrum of the IaH dataset.

4.2.2 Participants and their educational qualifications. The majority of manuscripts ($n = 54$) report findings that concerned students only, while the remaining studies ($n = 5$) describe IaH practices from the students and the instructors' perspective. As for the academic degree levels of the students, half of the manuscripts included BA students ($n = 30$) followed by a combination of different degree levels ($n = 17$), and MA students ($n = 4$). Eight studies (14%) did not report on the academic degree of their participants. It is worth mentioning that nearly all the In-campus initiatives took place with BA students ($n = 4$), while the remaining In-campus initiatives ($n = 2$) do not report on this category.

Regarding participant numbers in IaH implementation, we note a wide range, from small groups of under 20 to studies involving nearly 100 participants or more, such as a telecooperative project which involved 150 students from 26 nations. The results for the number of participants are displayed in Table A6.

4.2.3 Activities and resources used. Our systematic review identified a wide range of teaching activities, which were classified into seven groups and analysed in relation to the ISCED F 2013; UNESCO, 2015) categories through cross-tabulation (see Table A7). *Topic discussion and presentations* seems to be the type of activity mostly represented in our IaH dataset across different disciplines such as for nursing, history, languages, odontology, or religion. A significant number of manuscripts describe only the *Design component* of joint VE activities. These include, for example, the design of lighting and display space for a contemporary brand-name store, or the design of a social enterprise business and the use of Google Tour Creator to develop virtual tours about the countries involved in the project. *Collaborative writing activities* are also reported as the main task for the implementation of IaH in studies dealing with language learning, or multiple disciplines such as in a study with students of Hispanic Literature and Journalism working together to collaboratively write an article for a joint intercultural magazine.

The remaining manuscripts describe unique VE activities such as *the performing arts education in digital spaces*, *the simulation and real world activities* where language learners had to prepare for a job interview and participate in a real online job interview, or *the topic discussion, research and presentations activities* as in a study where students were asked to use the World Bank EdStats online database in order to explore real-world education statistics. Among these distinctive VE activities, a noteworthy study involved South African students explaining the fundamentals of radar charts to their Mexican counterparts, while the Mexican students were tasked with applying ten heuristic principles to evaluate user-centeredness and friendliness in advanced navigational devices' interfaces.

In the *in-campus initiatives* we have included those manuscripts that report on a range of activities that include language exchange programs, buddy systems, shared dormitories with both domestic and international students, cooperative workshops, cooperative volunteering programs, and mixed study groups.

As for the resources used to implement those activities, we have classified them into five main categories: *collaboration tools, communication tools, learning management and other organizational tools and Multimedia* (see Figure 3). It is worth mentioning that these categories were not mutually exclusive and a single manuscript could report on the use of various tools, while others could report on only one tool, such as in a study where the use of Skype was the only tool reported. Furthermore, some manuscripts report on the liberty that was provided to the participants to work with the tools that were more convenient for them; this is the case of an in-campus study where students were free to choose the interaction
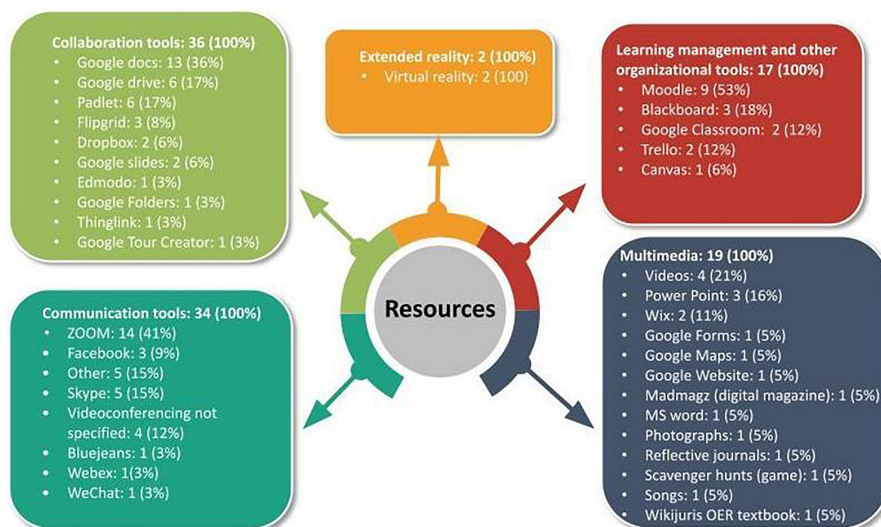
Source(s): Authors' own work

Figure 3.
Resources used to
implement IaH

language and tools (WhatsApp, Instagram, Facebook, Messenger, Skype, Zoom), and
Moodle was chosen by the eTandem team for its widespread use.

4.3 Reported benefits and challenges of IaH

4.3.1 Benefits. Irrespective of the discipline in which IaH was implemented, *intercultural
sensitivity* was highlighted as the main benefit in a substantial number of studies ($n = 38$).
For instance, in a cross-cultural study between Japan and Thailand, the adoption of IaH
practices proved beneficial for odontology undergraduates. The study offered a broader
global perspective and heightened awareness of the significance of delivering culturally
sensitive, person-centred dental care. Similarly, in a VE study focusing on nursing between
Canada and Denmark, results reflected the profound influence of culture on nursing
practices. Recognizing and embracing cultural differences facilitated reciprocal learning
among students. Other disciplines where the importance of intercultural sensitivity was
reported as the main benefit were languages economics or global health among others.

The remaining manuscripts focus on different beneficial aspects of *collaboration* (=8).
One example is a study in the context of a theatre class where the authors evaluate the
financial benefits of such international collaboration, while another study describes global
health students' enthusiasm towards the small group's activities, debates, and the
synchronous sessions that enable interaction with lecturers and peers. Under the
discipline-specific literacies category ($n = 7$) we have encompassed those studies reporting
on students gaining a good understanding of the content of the specific discipline that would
have not been possible without the implementation of IaH practices Another important
benefit identified in our dataset was the increase of *digital literacy* ($n = 4$) as in a study with
English teacher candidates and language learners who benefited from the digital skills
gained during the VE Lastly, there were two studies focusing on unique benefits: on
employability skills or the beneficial aspects for students' future careers, and the language
skills acquired due to the implementation of IaH practices. Table A8 summarizes these
results.

4.3.2 Challenges. When it comes to the challenges faced during the implementation of IaH practices, specific challenges emerged with manuscripts reporting on only one challenge and others including a wide variety of them (see Table A9). For example, some studies focus on the *language challenges* and account for the significant differences in knowledge and English language skills among the students. Other studies describe technical challenges arising from students' limited experience with specific tools and their unfamiliarity with alternatives, such as WeChat. *Internal challenges* involve factors related to the personal attitudes of participants engaged in IaH practices, such as the difficulties of working together (e.g. accepting that not everyone may contribute equally) and the complexities of being an effective group leader.

Pedagogical challenges were reported, for example, in a study where challenges primarily stemmed from teacher candidates learning about linguistic topics in the English language not commonly encountered. These topics were notably distinct from the curriculum development and methodology courses typically encountered in a teacher education program. *Time zone difference* was reported as the main challenge in many VE studies as well as *organizational difficulties* which include obstacles in developing and funding bidirectional programming for students from both high- and low-income countries, or problems encountered regarding virtual exchange procedures.

The *intercultural challenges* reported in the manuscripts deal with different perceptions towards the attitudes of counterpart groups. This encompasses instances such as the misunderstandings documented in a study involving Polish and Tunisian students engaged in an entrepreneurial ecosystem through virtual exchange. The diverse actions exhibited by both groups were occasionally interpreted as indications of disrespect. Similarly, differences in argumentation and defense strategies among religious and 'secular' students are observed in one study of our dataset. Other studies also suggest social and cultural tensions in collaborative activities tied to academic performance levels.

Regarding studies encountering multiple challenges, the majority reported facing between 2 and 3 difficulties. For instance, a study identified both the physical rehearsal space and telepresence technologies as posing challenges. Another study noted minor challenges related to time zones and different semester structures, but were considered surmountable, given the benefits of implementing IaH. Studies documenting more than 5 challenges focused on inclement weather, illnesses, misunderstandings, local holidays, unreliable Internet connections, and other technical issues.

5. Discussion

This paper explored current teaching and learning practices, benefits, and challenges in the design and implementation of IaH. Our systematic review revealed a strong body of evidence suggesting that IaH is an emerging practice in HE using a wide range of technologies and activities. With regard to the first research question investigating fields of study, locations of IaH, and objectives pursued, contrary to studies suggesting the preponderance of IaH initiatives focusing on delivering courses in foreign languages (Hénard *et al.*, 2012), our dataset showed a diverse range of disciplines, including transdisciplinary initiatives where IaH is implemented. In terms of the locations represented in the dataset, it was possible to observe international cross-collaborations between more than 35 countries. However, a closer look indicates that these collaborations predominantly feature a more substantial role for the "Global North", raising concerns about the insufficient efforts to articulate a decolonized, internationalized, and inclusive curriculum that incorporates interactions with diverse perspectives, including those from the "Global South," as advocated by Wimpenny *et al.* (2021). Concerning the reported aims of IaH initiatives, there is a distinct improvement in addressing Eisenchlas and Trevaskes's (2003) call for clearly specifying pursued

objectives. Across disciplines, *cross-cultural competence* emerges as the most predominant aim in our dataset, resonating with Beelen and Jones's (2015) and Knight's (2012) emphasis on the significance of an international and intercultural component in IaH initiatives. Consistent with Caniglia *et al.*'s (2017) findings, the *enhancement of international collaboration* also appears as a notable objective within the IaH initiatives. Overall, our dataset highlighted the importance of considering international collaborations supporting cross-cultural competencies in an inclusive curriculum (Almeida *et al.*, 2019). Through these practices, universities can better lead to more successful and sustainable collaborations.

Our second research question inquired into the mode, duration, participants, activities, and resources used in IaH initiatives. In terms of implementation, the prevalence of Virtual Exchange in the documented practices aligns with the continuous trend towards digitalization in education (cf. Caniglia *et al.*, 2017). However, this practice is executed in varying manners based on the objectives and discipline, diverging from the guidelines advocated by O'Dowd (2023) for an effective implementation, which suggests a duration of 6 weeks. Our dataset indicates practices ranging from less than a month to those spanning two semesters. Our dataset analysis further elucidated that students emerge as the primary beneficiaries of the implemented Internationalization at Home (IaH) initiatives. As posited by Beelen and Jones (2015), such initiatives serve as conduits for the cultivation of cross-cultural competencies among students. In their utilization of activities and resources, the majority of studies appear to align with Beelen and Jones's (2015, p. 64) definition of IaH which is perceived not as an independent aim or didactic concept but rather as a "set of instruments and activities 'at home' that aim to develop international and intercultural competences in all students". These activities build upon Agnew and Kahn's (2014) practical models, further adapting tasks to recent technological innovations.

In response to the third research question, which referred to the reported benefits and challenges of IaH in HE, our review indicated several benefits brought about by the implementation of IaH initiatives in HE institutions which can be summarized into students' increased levels of intercultural sensitivity and collaboration as well as the enhancement of various skills such as discipline-specific and digital literacies. Furthermore, echoing previous findings (Harrison, 2015; Li and Xue, 2022), it is worth noting that the predominant challenges identified in our dataset revolve around language, technical, personal, pedagogical, or organizational aspects.

6. Limitations
This study has some limitations that need to be acknowledged. First, we limited our search to published research from 2018 to 2022. Although there are papers concerning IaH that are published before 2018, we decided to use this year as a landmark for capturing the recent growth of research in this field, particularly, after the Covid-19 pandemic. Second, grey literature was excluded from our dataset which might have limited the number of manuscripts synthesized. However, there is considerable evidence highlighting that assessing the quality and validity of grey literature can be more challenging than evaluating peer-reviewed publications (Hopewell *et al.*, 2005). Finally, the reported benefits mentioned in the manuscripts are often broad and qualitative, making it challenging to measure their impact quantitatively.

7. Recommendations for future research
IaH initiatives hold the potential to internationalize the curriculum and support the needs of the 21st-century workforce. Future studies need to engage in measuring the impact of IaH quantitatively, as well as in assessing additional multicultural competencies and other soft

skills acquired through IaH initiatives. Additional outcomes to be assessed also include enhanced employability and career advancement for students engaged in such teaching and learning strategies (Barbosa *et al.*, 2020). As IaH initiatives require careful and thoughtful planning, studies should aim to enhance students' and teachers' readiness through support before, during, and after IaH activities. Research should also determine the most suitable technological applications, including emerging technologies, for IaH projects. Studies should assess the synergies between technologies and learning activities through real-context implementations. Finally, further research should delve into implementing inclusive IaH practices specifying necessary resources for creating accessible educational spaces (Janebová and Johnstone, 2022).

8. Implications for higher education institutions

The review indicates the significant role of online collaborative efforts for IaH since the majority of the initiatives reported revolved around virtual exchanges. Despite the challenges in implementation of this pedagogical practice, the prevalence of virtual exchange underscores the shift to digital internationalization endeavours carried out collectively rather than by individual institutions. With this in mind, higher education institutions should make efforts to invest in supporting this and other similar practices that capitalize on the technological affordances in order to offer international experiences to the students and faculty. The rise of strategic university alliances could contribute towards that direction. In addition, the review suggests that a critical stance should be adopted towards "Global-North" collaborations, prompting for the consideration of geographically inclusive initiatives, offering thus more equitable opportunities for IaH initiatives.

9. Conclusion

This study examined current teaching and learning practices, benefits, and challenges in implementing IaH in HE through a systematic review. The first research question focused on fields of study, locations, and objectives of IaH initiatives. Contrary to prior studies emphasizing foreign language courses, our review revealed diverse disciplines and international collaborations, with a notable dominance of the Global North and a need for more inclusive practices. The second research question explored the mode, duration, participants, activities, and resources used in IaH. We found that Virtual Exchange is prevalent but varies in execution. Students are the main beneficiaries, and activities align with the aim of developing international and intercultural competencies. The third research question addressed the benefits and challenges of IaH. Benefits include increased intercultural sensitivity and skill enhancement, while challenges primarily involve language, technical, personal, pedagogical, and organizational issues. Overall, findings underscore a growing adoption of IaH, leveraging diverse technologies and interdisciplinary methods to cultivate cross-cultural competence. While the study is limited by its focus on published research from 2018 to 2022, and by the broad and qualitative nature of the manuscripts, which makes it challenging to measure their quantitative impact, it still offers valuable insights and recommendations for future research and practice, addressing practical guidelines, technology's role, and inclusive internationalization efforts. This study contributes to the critical analysis of IaH, emphasizing recent teaching trends and technological advancements.

Notes

1. Our dataset comprises 58 manuscripts. However, as Barbosa *et al.*'s (2020) paper covers two distinct IaH initiatives, we computed its results separately, yielding 59 IaH experiences.

References

Agnew, M. and Kahn, H.E. (2014), "Internationalization-at-home: grounded practices to promote intercultural, international, and global learning", *Metropolitan Universities*, Vol. 25 No. 3, pp. 31-46.

Almeida, J., Robson, S., Morosini, M. and Baranzeli, C. (2019), "Understanding internationalization at home: perspectives from the Global North and South", *European Educational Research Journal*, Vol. 18 No. 2, pp. 200-217, doi: 10.1177/1474904118807537.

Barbosa, B., Santos, C. and Prado-Meza, C.M. (2020), "There is no one way to internationalization at home: virtual mobility and student engagement through formal and informal approaches to curricula", *Revista Lusófona de Educação*, Vol. 47 No. 47, pp. 85-98, doi: 10.24140/issn.1645-7250.rle47.06.

Beelen, J. and Jones, E. (2015), "Redefining internationalization at home", in Curai, A., Matei, L., Pricopie, R., Salmi, J. and Scott, P. (Eds), *The European Higher Education Area: between Critical Reflections and Future Policies*, Springer, pp. 59-72.

Caniglia, G., Luederitz, C., Groß, M., Muhr, M., John, B., Withycombe Keeler, L., von Wehrden, H., Laubichler, M., Wiek, A. and Lang, D. (2017), "Transnational collaboration for sustainability in higher education: lessons from a systematic review", *Journal of Cleaner Production*, Vol. 168, pp. 764-779, doi: 10.1016/j.jclepro.2017.07.256.

Crowther, P., Joris, M., Otten, M., Nilsson, B., Teekens, H. and Wächter, B. (2001), *Internationalisation at Home: A Position Paper*, EAIE, Amsterdam.

Eisenchlas, S. and Trevaskes, S. (2003), "Internationalization at home: some principles and practices", in Liddicoat, A.J., Eisenchlas, S. and Trevaskes, S. (Eds), *Australian Perspectives on Internationalizing Education*, Language Australia, Melbourne, pp. 87-102.

Finardi, K. and Aşık, A. (2024), "Possibilities of virtual exchange for internationalization at home: insights from the Global South", *Journal of Virtual Exchange*, Vol. 7, pp. 1-22, doi: 10.21827/jve.7.39593.

Harrison, N. (2015), "Practice, problems and power in 'internationalisation at home': critical reflections on recent research evidence", *Teaching in Higher Education*, Vol. 20 No. 4, pp. 412-430, doi: 10.1080/13562517.2015.1022147.

Hénard, F., Diamond, L. and Roseveare, D. (2012), "Approaches to internationalisation and their implications for strategic management and institutional practice", IMHE Institutional Management in Higher Education, OECD, available at: http://erasmusplusriesal.org/sites/default/files/8._approaches_to_internationalisation_-_oecd.pdf

Hofmeyr, A.S. (2021), "Taking advantage of a multicultural campus: impact of at-home intercultural initiatives on Japanese students' skills and future goals", *Journal of Studies in International Education*, Vol. 25 No. 2, pp. 182-202, doi: 10.1177/1028315320906159.

Hopewell, S., Clarke, M. and Mallett, S. (2005), "Grey literature and systematic reviews", in Rothstein, H., Sutton, A. and Borenstein, M. (Eds), *Publication Bias in Meta-Analysis: Prevention, Assessment and Adjustments*, John Wiley & Sons, pp. 49-72, doi: 10.1002/0470870168.ch4.

Howes, L.M. (2018), "Internationalisation of the higher education curriculum in criminology: a role for the southern criminology project", *Teaching in Higher Education*, Vol. 24 No. 4, pp. 527-544, doi: 10.1080/13562517.2018.1494565.

Huanga, H.H., Chenb, C.Y. and Yangc, L.W. (2022), "How does cross cultural mentoring program influence international students' professional commitment?", *International Journal of Business*, Vol. 27, p. 3.

Janebová, E. and Johnstone, Ch. (2022), "Mapping inclusive internationalization", in Kommers, S. and Bista, K. (Eds), *Inequalities in Study Abroad and Student Mobility*, Routledge, pp. 115-128.

Karimova, B., Bazylova, B., Makasheva, A., Nurlanbekova, Y. and Ailauova, Z. (2023), "Students' linguocultural competence: insights from internationalization at home", *Journal of Social Studies Education Research*, Vol. 14 No. 4, pp. 379-405.

Knight, J. (2012), "Student mobility and internationalization: trends and tribulations", *Research in Comparative and International Education*, Vol. 7 No. 1, pp. 20-33, doi: 10.2304/rcie.2012.7.1.20.

Leask, B. (2015), *Internationalizing the Curriculum*, Routledge, London, New York.

Li, J. and Xue, E. (2022), "Exploring the epistemology of internationalization at home: a scoping review approach", *Educational Philosophy and Theory*, Vol. 55 No. 3, pp. 356-365, doi: 10.1080/00131857.2021.2022473.

Lomer, S. and Anthony-Okeke, L. (2019), "Ethically engaging international students: student generated material in an active blended learning model", *Teaching in Higher Education*, Vol. 24 No. 5, pp. 613-632, doi: 10.1080/13562517.2019.1617264.

Mittelmeier, J., Lomer, S., Al-Furqani, S. and Huang, D. (2024), "Developing meaningful internationalisation that impacts students' outcomes in higher education: a scoping review of the literature 2011-2022", *Journal of Studies in International Education*, Vol. 0 No. 0, pp. 1-23, doi: 10.1177/10283153231222278.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G. and Group, T.P. (2009), "Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement", *PLoS Medicine*, Vol. 62 No. 10, pp. 1006-1012, doi: 10.1016/j.jclinepi.2009.06.005.

Murphy, M. (2020), "COVID-19 and emergency eLearning: consequences of the securitization of higher education for post-pandemic pedagogy", *Contemporary Security Policy*, Vol. 41 No. 3, pp. 492-505, doi: 10.1080/13523260.2020.1761749.

Nilsson, B. (2003), "Internationalisation at home from a Swedish perspective: the case of Malmö", *Journal of Studies in International Education*, Vol. 7 No. 1, pp. 27-40, doi: 10.1177/1028315302250178.

O'Dowd, R. (2023), *Internationalising Higher Education and the Role of Virtual Exchange*, Routledge, London, New York.

Page, M.J. and Moher, D. (2017), "Evaluations of the uptake and impact of the preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement and extensions: a scoping review", *Systematic Reviews*, Vol. 6 No. 1, p. 263, doi: 10.1186/s13643-017-0663-8.

Sandström, A.M. and Hudson, R. (2019), *The EAIE Barometer: Internationlisation in Europe (Second Edition) Signposts of Success*, The European Association for International Education (EAIE).

UNESCO (2015), *International Standard Classification of Education: Fields of Education and Training 2013 (ISCED F 2013): Detailed Field Descriptions*, UNESCO. doi: 10.15220/978-92-9189-179-5-en.

Whitsed, C., Burgess, M. and Ledger, S. (2021), "Editorial advisory board members on reimagining higher education internationalization and internationalization of the curriculum", *Journal of Studies in International Education*, Vol. 25 No. 4, pp. 348-368, doi: 10.1177/1028315320984840.

Wimpenny, K., Beelen, J., Hindrix, K., King, V. and Sjoer, E. (2021), "Curriculum internationalization and the 'decolonizing academic'", *Higher Education Research and Development*, Vol. 41 No. 7, pp. 2490-2505, doi: 10.1080/07294360.2021.2014406.

Xiao, Y. and Watson, M. (2019), "Guidance on conducting a systematic literature review", *Journal of Planning Education and Research*, Vol. 39 No. 1, pp. 93-112, doi: 10.1177/0739456X17723971.

Corresponding author
María Victoria Soulé can be contacted at: mariavictoria.soule@cut.ac.cy, maria.victoria.soule@gmail.com

Sources	Results
Database	
Scopus	212
ScienceDirect	146
ERIC	83
Journal	
Higher Education	20
Studies in Higher Education	9
Higher Education Research and Development	14
Journal of Studies in International Education	66
Source(s): Authors' own work	

Table A1.
Search protocol and
results in databases
and high-impact
journals

Inclusion criteria	Exclusion criteria
1. The manuscript should have been published between years 2018–2022	The manuscript was published before 2018 or after 2022
2. The manuscript was written in English	Publications were written in a language other than English
3. The manuscript was peer-reviewed	Non peered review resources (grey) literature were not included in the dataset
4. The manuscript presented sufficient data to identify IaH teaching and learning practices, challenges and benefits	The manuscript was composed of only one page (abstract papers), poster, presentations, science events program, tutorial slides, literature reviews, book reviews or editorials
5. The manuscript included empirical data related to the implementation of IaH teaching and learning practices	The manuscript did not include empirical data
Source(s): Authors' own work	

Table A2.
Inclusion and
exclusion criteria

Group 1: Publication Identification		*Group 2: Current status of IaH in HE*	
IE1	Author	IE8	Publication objectives
IE2	Publication Year	IE9	Discipline/Field of studies
IE3	Title	IE10	Academic degree levels
IE4	Item Type	IE11	Location
IE5	Publication Title		
IE6	Publication ID (DOI)		
IE7	Publication source		
Group 3: Implementation of IaH in HE		*Group 4: Benefits and Challenges of IaH in HE*	
IE12	Mode of implementation	IE18	Benefits
IE13	Duration of the IaH implementation	IE19	Challenges
IE14	Type of participants		
IE15	Number of participants		
IE16	Activities		
IE17	Resources used		
Source(s): Authors' own work			

Table A3.
Data extraction
categories

Field of studies	N	%
Education		
Education	3	5%
Language Teaching	6	10%
Arts and Humanities		
Religion	1	2%
Theatre	1	2%
History	1	2%
Languages	9	15%
Social Sciences, Journalism and Information		
Journalism media studies and communication	1	2%
Psychology	1	2%
Economics	1	2%
Business, Administration and Law		
Business	2	3%
Law	1	2%
Health and Welfare		
Global Health	2	3%
Nursing	2	3%
Odontology	1	2%
Inter-disciplinary IaH initiatives	27	46%
Total	59	100%

Source(s): Authors' own work

Table A4.
Disciplines involved in IaH practices based on the ISCED F 2013 categories (UNESCO, 2015)

Duration	In-campus		Virtual exchange	
	N	%	N	%
Less than a month	0	0%	5	8%
One month	0	0%	7	12%
Six weeks	1	2%	9	15%
Two months	1	2%	7	12%
10 weeks	0	0%	3	5%
One semester	2	3%	17	29%
Two semesters	1	2%	1	2%
NA	1	2%	4	7%
TOTAL	6	10%	53	90%

Source(s): Authors' own work

Table A5.
Duration of the implementation of IaH practices

Number of participants	In-campus		Virtual Exchange[1]	
	N	%	N	%
1 to 20	0	0%	10	17%
21 to 40	2	3%	19	32%
41 to 60	0	0%	8	14%
61 to 80	0	0%	5	8%
81 to 100	0	0%	2	3%
More than 100	4	7%	4	7%
NA	0	0%	5	8%
Total	6	10%	53	90%

Note(s): [1]We encompass under the term 'virtual exchange' all its related terms, including COIL, telecollaboration, and online intercultural exchange. For an extensive discussion on this issue see O'Dowd (2023, pp. 8–21)
Source(s): Authors' own work

Table A6.
Number of participants
in the implementation
of IaH practices

	Topic discussion and presentations		Design activity		Collaborative writing		In-campus initiatives		Topic discussion, research, and presentations		Performing activity		Simulation and real-world activities	
Field of studies														
Education														
Education	3	5%												
Language Teaching	2	3%	3	5%	1	2%								
Arts and Humanities														
Religion	1	2%												
Theatre											1	2%		
History	1	2%												
Languages	5	8%	2	3%			1	2%					1	2%
Social Sciences, Journalism and Information														
Journalism media studies and communication			1	2%										
Psychology			1	2%										
Economics			1	2%										
Business, Administration and Law														
Business					1	2%			1	2%				
Law	1	2%												
Health and Welfare														
Global Health	2	3%												
Nursing	2	3%												
Odontology	1	2%												
Inter-disciplinary IaH initiatives	14	24%	10	17%	1	2%	1	2%	1	2%				
Total	32	54%	18	31%	3	5%	2	3%	2	3%	1	2%	1	2%

Source(s): Authors' own work

Benefits	In-campus		Virtual exchange	
	N	%	N	%
Intercultural sensitivity	4	7%	34	58%
Collaboration	0	0%	8	14%
Discipline-specific literacies	2	3%	5	8%
Digital literacy	0	0%	4	7%
Other	0	0%	2	3%
Total	6	10%	53	90%
Source(s): Authors' own work				

Table A8.
Benefits of IaH
initiatives

Challenges	In-campus		Virtual exchange	
	N	%	N	%
Languages	0	0%	1	2%
Technical challenges	0	0%	1	2%
Communication problems	0	0%	1	2%
Internal challenges	0	0%	2	3%
Pedagogical	0	0%	2	3%
Time zone difference	0	0%	4	7%
Intercultural challenges	1	2%	4	7%
Organizational challenges	1	2%	4	7%
Between 2 and 3 challenges	2	3%	20	34%
Between 4 and 5 challenges	1	2%	6	10%
More than 5 challenges	1	2%	8	14%
Total	6	10%	53	90%
Source(s): Authors' own work				

Table A9.
Challenges of IaH
initiatives

Table A10.
Manuscripts included in qualitative synthesis

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Albá Duran, J. and Oggel, G	2019	Challenges of the Transatlantic Cross-Disciplinary ENVOIE-UFRUG Project	Hispanic Literature, and Journalism	Undergraduate	Online Intercultural Exchange	The Netherlands and Chile	1 to 20	Two months
Asojo, A.; Kartoshkina, Y.; Amole, D. and Jaiyeoba, B	2019	Multicultural Learning and Experiences in Design through the Collaborative Online International Learning (COIL) Framework	Interior Design, and Architecture	Undergraduate and Graduate	COIL	USA and Nigeria	21 to 40	Two months
Barbosa, B.; Santos, C.; Prado-MezaC.M.	2020	There is no one way to internationalization at home: Virtual mobility and student engagement through formal and informal approaches to curricula	Marketing, and International Business	Undergraduate	Virtual Exchange	Portugal and Mexico	21 to 40	One month
Barbosa, B.; Santos, C.; Prado-MezaC.M.	2020	There is no one way to internationalization at home: Virtual mobility and student engagement through formal and informal approaches to curricula	Language Learning	Undergraduate	In-campus activities	Portugal	21 to 40	One semester
Bauk, S.; Fajardo-Flores, S	2020	Matching interaction design principles and integrated navigation systems in an electronic classroom	Maritime Studies and Engineering	NA	COIL	South Africa and Mexico	21 to 40	Two months

(*continued*)

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Bowen, K.; Barry, M.; Jowell, A.; Maddah, D.; AlamiN.H.	2021	Virtual Exchange in Global Health: an innovative educational approach to foster socially responsible overseas collaboration	Human Biology, Biochemistry, and Public Health	Undergraduate and Graduate	Virtual Exchange	USA and Lebanon	21 to 40	Six weeks
Carlson, E.; Stenberg, M.; Lai, T.; Reisenhofer, S.; Chan, B.; Cruz, E.; Leung, D.; Wong, A.; ChanE.A.	2019	Nursing students' perceptions of peer learning through cross-cultural student-led webinars: A qualitative study	Nursing	Undergraduate	Online Intercultural Exchange	Australia, Hong Kong, and Sweeden	21 to 40	NA
Cheikhrouhou, N. and Ludwig, K	2021	Creating a Prototype for a Seawater Farm through an American-Tunisian Virtual Exchange	Computer Sciences, Mechanical Engineering, and Psychology	Undergraduate and Graduate	Virtual Exchange	USA and Tunisia	21 to 40	Two months
Cheikhrouhou, N. and Marchewka, M	2020	Exploring Foreign Entrepreneurial Ecosystems through Virtual Exchange	Management, International Business, Tourism, Recreation, and Computer System Networks	Undergraduate and Graduate	Virtual Exchange	Poland and Tunisia	21 to 40	Six weeks
Cioltan-Draghiciu, A. and Stanciu, D	2020	Virtual Exchange: Romania and Hungary 100 Years Later	History	Undergraduate and Graduate	Virtual Exchange	Hungary and Romania	1 to 20	One semester

(*continued*)

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Dooly, M.; Sadler, R	2020	If you don't improve, what's the point? Investigating the impact of a flipped online exchange in teacher education	Language Teaching	Undergraduate	Telecollaboration	USA and Spain	41 to 60	10 weeks
Fernández-Raga, M. and Villard, T	2020	Multidisciplinary and International Virtual Collaboration on the "Shared Garden" between the Universities of Bordeaux and León	Applied Physics and Measurement Engineering (APME), and Electrical Engineering	Undergraduate	Virtual Exchange	France and Spain	1 to 20	Two semesters
Freiermuth, M.R.; Huang, H.-C	2021	Zooming across cultures: Can a telecollaborative video exchange between language learning partners further the development of intercultural competences?	Language Learning	Undergraduate and Graduate	Telecollaboration	Taiwan and Japan	1 to 20	NA
Fuchs, C	2021	Supporting Autonomy in an Exam-Based Context: Results from a Hong Kong-U.S. Telecollaboration	English majors	Undergraduate	Virtual Exchange	Hong Kong and USA	61 to 80	10 weeks
Fuchs, C	2019	Critical incidents and cultures-of-use in a Hong Kong-Germany telecollaboration	Language Teaching	Graduate	Telecollaboration	Hong Kong and Germany	61 to 80	One semester

(continued)

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Gorman, T.; Kanninen, M. and Syrjä, T	2020	Immersive Telepresence in Theatre: Performing Arts Education in Digital Spaces	Theatre	NA	COIL	UK and Finland	NA	Less than a month
Griggio, L. and Pittarello, S	2020	How a Multilingual Project Can Foster and Enhance International Mobility	Languages and Literature	NA	In-campus activities	Italy	More than 100	Two months
Guadamillas GómezM.V.	2018	Developing soft skills in higher education foreign language programs. Initial insights into telecollaboration	Primary Education and different degree programs	Undergraduate	Telecollaboration	Spain and UK	21 to 40	Six weeks
Guariento, W.; Rolinska, A. and Al-Masri, N	2018	Constructive content-based feedback in EAP contexts: lessons from a cross-border engineering-related pre-sessional course	Electrical, Civil or Mechanical Engineering, and UK-based international students taking different postgraduate courses	Undergraduate and Graduate	Telecollaboration	UK and Palestine	41 to 60	Less than a month
Háhn, J. and Radke, K	2020	Combining Expertise from Linguistics and Tourism: A Tale of Two Cities	Language Studies, Information and Communications Technology, and Management in Tourism	Undergraduate and Graduate	Virtual Exchange	Poland and Finland	21 to 40	Six weeks

(continued)

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Hilliker, S	2020	Virtual Exchange as a Study Abroad Alternative to Foster Language and Culture Exchange in TESOL Teacher Education	Linguistics majors, and TESOL teacher candidates	Undergraduate and Graduate	Virtual Exchange	USA and Mexico	1 to 20	One month
Hilliker, S. and Loranc, B	2022	Development of 21st century skills through virtual exchange	Language Teaching and Language Learners	Undergraduate and Graduate	Virtual Exchange	USA and Turkey	41 to 60	Six weeks
Hofmeyr, A	2021	Taking Advantage of a Multicultural Campus: Impact of At-Home Intercultural Initiatives on Japanese Students' Skills and Future Goals	Language Learning	Undergraduate	In-campus activities	Japan	More than 100	NA
Hofmeyr, A	2021	Intercultural Competence Development Through Co-Curricular and Extracurricular At-Home Programs in Japan	Engineering, Area Studies, and Management	NA	In-campus activities	Japan	More than 100	Two semesters
Hyett, N.; Lee, K.M.; Knevel, R.; Fortune, T.; Yau, M.K.; Borkovic, S	2019	Trialing Virtual Intercultural Learning With Australian and Hong Kong Allied Health Students to Improve Cultural Competency	Occupational Therapy, and Oral Health	Undergraduate	Online Intercultural Exchange	Australia and Hong Kong	1 to 20	Six weeks

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Ingram, L.A.; Monroe, C.; Wright, H.; Burrell, A.; Jenks, R.; Cheung, S.; FriedmanD.B.	2021	Fostering Distance Education: Lessons From a United States-England Partnered Collaborative Online International Learning Approach	Public Health, and Psychology	Undergraduate and Graduate	COIL	USA and UK	More than 100	Six weeks
Jaramillo Chavez, N.; Gleason, B	2022	A virtual exchange experience: Preparing pre-service teachers for cultural diversity	Education	NA	Virtual Exchange	USA and Turkey	21 to 40	Less than a month
Kanamori, Y.; Seki, N.; Foxton, R.; Moross, J.; Komagamine, Y.; Mizutani, K.; Hosaka, K.; Kanazawa, M.; Hatayama, T.; Komada, W.; Yonemitsu, I.; Akiyama, M.; Kaewmanee, P. Kaewsutha, Nathawut; N.; Wakabayashi, N.; Morio, I	2022	Fostering globally competent dental students through virtual team-working, problem-solving and person-centred multi-disciplinary care planning	Odontology	Undergraduate	Virtual Exchange	Japan and Thailand	NA	One semester

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Katre, A	2020	Creative Economy Teaching and Learning–A Collaborative Online International Learning Case	Economics	Undergraduate	COIL	USA and China	NA	One semester
Knysh, A.; Matochkina, A.; Ulanova, D.; Meechan, P.; Austin, T	2019	When Two Worldviews Meet: Promoting Mutual Understanding between 'Secular' and Religious Students of Islamic Studies in Russia and the United States	Religion	Undergraduate and Graduate	Virtual Exchange	USA and Russia	21 to 40	One semester
Koris, R. and VuylstekeJ.F.	2020	Mission (Im)possible: Developing Students' International Online Business Communication Skills through Virtual Teamwork	Language Learning	Graduate	Virtual Exchange	Hungary and Belgium	NA	Two months
Krengel, F	2021	"Glocal Education" through Virtual Exchange? Training Pre-Service EFL Teachers to Connect Their Local Classrooms to the World and Back	Language Teaching	Undergraduate and Graduate	Virtual Exchange	Germany, Turkey and Sweden	NA	One semester

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Larrondo Ureta, A.; Peña Fernández, S.; Fernandes Teixeira, J	2021	Online Journalism Teaching and Learning Processes Beyond the Classroom and the University: Experiences in International Virtual Collaboration on Multimedia Projects	Journalism media studies and communication	Undergraduate	Virtual Exchange	Spain, Portugal and Brazil	81 to 100	One semester
Law, L.; Hafiz, M.; Kwong, T.; Wong, E	2019	Evaluating Students' Perceptions on the Effectiveness of Online Intercultural Learning Experience via a SPOC	Education	Graduate	Online Intercultural Exchange	Hong Kong and Singapore	81 to 100	Less than a month
Lee, B.K.; Cai, H	2019	Evaluation of an Online "Internationalization at Home" Course on the Social Contexts of Addiction	Addictions Counselling, Public Health, Psychology, Management, Psychology, Nursing, Traditional Chinese Medicine, Business, Hospital Management	Undergraduate	Online Intercultural Exchange	Canada and China (Hong Kong and Macau)	41 to 60	One semester
Leung, D.; Kumlien, C.; Bish, M.; Carlson, E.; Chan, P.; Chan, E	2021	Using internationalization-at-home activities to enhance the cultural awareness of health and social science research students: A mixed-method study	Health Sciences, and Social Sciences	Undergraduate and Graduate	Online Intercultural Exchange	Australia, Hong Kong and Sweeden	1 to 20	10 weeks

(continued)

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Limoges, J.; Nielsen, K.; MacMaster, L.; Kontni, R	2019	Globally networked learning: Deepening Canadian and Danish nursing students' understanding of nursing, culture and health	Nursing	Undergraduate	Online Intercultural Exchange	Canada and Denmark	21 to 40	One semester
Liu, Y.; Shirley, T	2021	Without crossing a border: Exploring the impact of shifting study abroad online on students' learning and intercultural competence development during the covid-19 pandemic	Business, and Automobile Engineering	Undergraduate	COIL	USA, Brazil, Germany and India	1 to 20	NA
Luo, H.; Gui, M	2021	Developing an effective Chinese-American telecollaborative learning program: an action research study	Language Learning	Undergraduate	Online Intercultural Exchange	USA and China	41 to 60	One semester
Marchewka, M. and Raina, R	2019	'FORE - UEK Telecollaboration 2017' – Virtual Exchange in Business Studies	Business Management, and Economics	Undergraduate and Graduate	Telecollaboration	India and Poland	61 to 80	One semester
Martins, C. and Werner, M	2019	Brazil and Colombia Virtual Exchange Project: The Brazilian View	Language Teaching	Undergraduate	Virtual Exchange	Colombia and Brazil	61 to 80	One semester
Matsui, H	2020	Collaborative Tasks in Telecollaboration: Their Challenges and Potentials	Language Learning	NA	Telecollaboration	USA and Japan	21 to 40	One semester

(continued)

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Mestre-Segarra, M.A. and Ruiz-Garrido, M	2022	Examining students' reflections on a collaborative online international learning project in an ICLHE context	Business	Graduate	COIL	Spain and USA	21 to 40	Six weeks
Mittelmeier, J.; Rienties, B.; Tempelaar, D.; Hillaire, G.; Whitelock, D	2018	The influence of internationalised versus local content on online intercultural collaboration in groups: A randomised control trial study in a statistics course	Statistics	Undergraduate	IoC	The Netherlands	More than 100	Six weeks
Moalla, A.; Abid, N.; Balaman, U	2020	Task-Enhanced Virtual Exchange between University of Sfax, Tunisia, and Hacettepe University, Turkey	Language Teaching	Undergraduate	Virtual Exchange	Turkey and Tunisia	21 to 40	One month
Mundel, J	2020	International Virtual Collaboration in Advertising Courses: Building International and Intercultural Skills from Home	Communication, and International Business	Undergraduate	COIL	USA and The Netherlands	21 to 40	One month
Orsini-Jones, M.; Cerveró Carrascosa, A.; Zou, B	2020	The Trouble with Telecollaboration in BMELTET	Language Teaching	Undergraduate and Graduate	COIL	Spain, UK and China	61 to 80	One semester

(continued)

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Petropoulou, Z	2021	Virtual Classroom Experiences for Second Language Learning and Cultural Exchange	Language Learning	Undergraduate	Virtual Exchange	USA and France	1 to 20	Two months
Polyakova, O.; Galstyan-Sargsyan, R	2021	Sustainable Higher Education via Telecollaboration: Improving Plurilingual and Pluricultural Competence	The participants were all drawn from different study courses, they had disparate subject area alignments	NA	COIL	Spain and Finland	1 to 20	One month
Pushkarna, N.; Daly, A.; Fan, A	2021	Teaching digital and global law for digital and global students: creating students as producers in a Hong Kong Internet Law class	Law	Undergraduate	IoC	Hong Kong	21 to 40	One semester
Rauer, J.N.; Kroiss, M.; Kryvinska, N.; Engelhardt-Nowitzki, C.; Aburaia, M	2021	Cross-university virtual teamwork as a means of internationalization at home	Mechatronics/ Robotics; Management Information Systems, eBusiness and Service Science, and Systems for Enterprises	NA	Telecollaboration	It has been piloted with 150 students from across 26 nations and five universities	More than 100	Less than a month
Silla, I.; Tordera, N.; Pérez-NebraA.R.	2021	Online intercultural exchange: A case study in work and organisational psychology	Psychology	Undergraduate	Virtual Exchange	Spain and Brazil	21 to 40	NA

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
Stephens de Jonge, J.; Labrador, B	2020	Fostering Critical Thinking and Motivation through Digital Escape Rooms: Preliminary Observations	Language Learning	Undergraduate	Virtual Exchange	Spain and USA	41 to 60	One semester
Turnbull, J.; Yazan, B.; Akayoglu, S.; Uzum, B.; Mary, L	2022	Teacher candidates' ideological tensions and covert metaphors about Syrian refugees in Turkey: Critical discourse analysis of telecollaboration	Education	Undergraduate	Telecollaboration	USA, France and Turkey	More than 100	One semester
Vahed, A	2021	Factors enabling and constraining students' collaborative online international learning experiences	Dental Technology, and Business Management	Undergraduate	COIL	USA and South Africa	21 to 40	One month
Vicente, C.; Jacobs, F.; de Carvalho, D.; Chhaganlal, K.; de Carvalho, R.; Raboni, S.; Qosaj, F.; Dau, P.; Ferreira, M.; Brunetti, M.; Tanaka, L	2022	The Joint Initiative for Teaching and Learning on Global Health Challenges and One Health experience on implementing an online collaborative course	Global Health	Undergraduate and Graduate	COIL	Brazil, Germany, Mozambique and Kosovo	21 to 40	
Vinagre, M	2022	Engaging with difference: Integrating the linguistic landscape in virtual exchange	Language Learning	Undergraduate	Virtual Exchange	USA and Spain	41 to 60	Six weeks

(continued)

Table A10.

Author	Publication year	Title	Field of studies	Academic degree levels	Mode of implementation	Location country	Number of participants	Duration of the IaH initiative
West, H.; Goto, K.; Borja, S.A.N.; Trechter, S.; Klobodu, S	2022	Evaluation of a Collaborative Online International Learning (COIL): A food product analysis and development project	Global Nutrition, and Culinary Arts degree	Undergraduate	COIL	USA and Ecuador	41 to 60	One semester
Wood, E.A.; Collins, S.L.; Mueller, S.; Stetten, N.E.; El-Shokry, M	2022	Transforming Perspectives Through Virtual Exchange: A US-Egypt Partnership Part 1	Global Health	Undergraduate	COIL	USA and Egypt	More than 100	One month

Source(s): Authors' own work