



ELSEVIER

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

International Review of Economics Education

journal homepage: www.elsevier.com/locate/iree

A cooperative virtual exchange within the economics curriculum: A pilot study on embedding elements of global competence within an economics course

Amy Eremionkhale ^{a,*}, ¹ , Jana Sadeh ^b , Yidi Sun ^c

^a Georgia State University, USA

^b University of Southampton, UK

^c University of Manchester, UK

ARTICLE INFO

Keywords:

Global competence
Intercultural sensitivity
Cooperative learning
Virtual exchange
Economics education
Higher education

ABSTRACT

The increasing interconnectivity of the global economy has fuelled higher education (HE) efforts to promote international exchange projects; however, these are not an option for many students. Virtual Exchange (VE) projects have gained traction over the last decade and are now well-established in higher education as a tool to build intercultural communication and global competence (Dooly, 2022; Stevens Initiative, 2023). Building on this established practice, our study contributes to the literature by augmenting a VE with a cooperative group-based learning exercise embedded within an economics module (course), an intersection that remains under-explored in both theory and implementation, and one which we believe combines the benefits of both virtual exchanges and cooperative learning. This combination presents an opportunity for economics students to develop deeper learning of the subjects they are studying while developing elements of global competence. This paper presents a novel pilot cooperative VE learning program between students at a university in the USA and a university in the UK. Students jointly undertake a cooperative learning exercise to produce output for a summative assessment. We measure their intercultural sensitivity, an element of global competence, pre and post the VE and find preliminary indications that this experience positively impacted students, particularly in the dimension of interaction engagement and confidence and particularly for female students and students who are multilingual. The paper contributes to the literature by presenting the novel combination of cooperative learning within a VE, outlining a timeline of practical steps for implementation to support other educators who may want to replicate this project and providing preliminary evidence of the potential impact of such projects on students' intercultural sensitivity, a key subset of global competence.

1. Introduction & background

The global economy has undergone significant changes over the past few decades, with businesses and markets increasingly interconnected and interdependent. This shift has created a need for graduates to demonstrate global competence skills, including

* Corresponding author.

E-mail address: jana.sadeh@soton.ac.uk (A. Eremionkhale).

¹ Present Address; DePauw University

<https://doi.org/10.1016/j.iree.2025.100327>

Received 2 October 2024; Received in revised form 12 September 2025; Accepted 24 September 2025

Available online 26 September 2025

1477-3880/© 2025 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

knowledge about different cultures and countries, the ability to communicate across cultural boundaries, and an understanding of global issues (Brodin, 2010; Heng and Yeh, 2022; Lunn, 2008). As a result, educators in fields such as economics, where students are expected to work in a globalized environment (Bijnens et al., 2006; Majewska, 2023), often seek to incorporate global competence-enhancing components in curricula.

Global competence is defined as having “enough substantive knowledge, perceptual understanding, and intercultural communication skills to interact in our globally interdependent world effectively.” (Lee Olsen et al., 2006), p.117). The US Global Competence Task Force describes global competence as “the capacity and disposition (of students) to understand and act on issues of global significance” (Mansilla and Jackson, 2013; Salomão and Viana da Silva, 2020). Increasing global competence allows our students’ to increase their capacity to adapt critically to the diversity between societies and individuals, moving beyond their learned perspectives (Brodin, 2010; Silberfeld, 2006). It is made up of a number of dimensions: the cognitive dimension (knowing how to communicate with other cultures), the behavioural dimension (being able to communicate with other cultures) and the affective dimension (wanting to communicate with other cultures) (Chen and Starosta, 2000). We refer to these as the mind, the hands and the heart. When students learn about all three, they can be effective global communicators.

Embedding all the dimensions of global competency requires programme level commitment with a holistic approach that reinforces the many skills required to successfully develop globally competent graduates. However, it is possible to embed one dimension of global competence within an individual module (course), which will support students to partially develop their global competence. In this paper we focus on the affective ability, which encourages students to want to communicate with people from other cultures and is also referred to as *intercultural sensitivity*. A practical way to do this is through Virtual Exchange (VE) programs, which allow students to interact with peers from different cultural backgrounds and learn about other countries’ economic systems (Duffy et al., 2022; Villar-Onrubia and Rajpal, 2016) without incurring any of the expenses involved in moving to a new country for a physical exchange programme.

Recent years have witnessed a surge in VE implementation across disciplines, particularly in the wake of the pandemic. The 2023 Stevens Initiative Impact and Learning Report notes that over 75,000 students worldwide have participated in VE programs through structured, globally supported initiatives. Many institutions now regard VE as a complementary internationalization tool, not merely an alternative to physical mobility. Dooly (2022) charts the evolution of VE from early telecollaboration experiments to today’s robust cross-institutional exchanges, while Kursan Milaković et al. (2021) demonstrate how VE enhances inquiry-based learning and global engagement in diverse disciplines.

Research suggests that VE programs can effectively enhance students’ global competence in higher education (Carroll et al., 2022; Machwate et al., 2021; Salomão and Viana da Silva, 2020) however there has been relatively little research on the potential role and application of VE projects within economics modules (courses).

Global competence doesn’t always feature in the learning outcomes of economics programmes, nevertheless educators may wish to incorporate elements of this, such as intercultural sensitivity, inside their modules (courses). For the VE to be a useful integration into an existing module (course) it needs to support the existing learning outcomes in a positive way. For this reason, we turn to the literature on cooperative learning to create an activity that would complement our learning outcomes. In the past decade the work on cooperative learning has provided a structure for learning designed to increase students’ focus, attention, and effort in their work through higher levels of contact and collaboration with each other. Evidence suggests that cooperative exercises increase the problem-solving abilities of students (Qin et al., 1995) and that they may be particularly beneficial to students who would not typically interact with their classmates (Emerson et al., 2016). Therefore, the integration of a cooperative learning exercise within a VE framework allows us to integrate higher level learning within an exercise designed to increase intercultural sensitivity.

This cooperative VE project, therefore, not only encourages an increase in the intercultural sensitivity of our students, but it also encourages deeper learning of the material being covered (Dzemidzic Kristiansen et al., 2019) and benefits from the wider strengths of cooperative learning, such as improving student engagement via active participation in the classroom (Aliyu et al., 2022; Bernstein, 2018; Bond et al., 2020; Nguyen et al., 2018; Tombak and Altun, 2016). Cooperative learning also has the ability to foster group support (James, 2018), positive intergroup relationships (Krause et al., 2009), a safe space for learning (Keramati and Gillies, 2022), and autonomy in students’ learning processes (Shi and Han, 2019). By integrating group activities with individual assessment we ensure that students are motivated to achieve their goals by observing others’ actions and to mitigate the free-riding problems commonly encountered in cooperative projects, as suggested by Maier et al. (2010).

The project outlined in the study is applied to an Economics curriculum and incorporates formative assessment into the module (course) design, aligning with the wider aim to support students in achieving learning outcomes through intercultural activities. This paper contributes to the literature by demonstrating the benefits of embedding a cooperative learning structure within a Virtual Exchange, specifically in the context of economics education. Although VE is widely adopted across higher education, its purposeful integration into cooperative, group-based assessments within disciplinary courses, particularly in economics, remains relatively novel and under-documented. It also acts as a guide to support others interested in the replication of the project. The paper is structured as follows; we first describe the project implemented in Section 2, we describe the project and provide a “how to” guide to implement a cooperative VE project in an economics classroom, In Section 3 we discuss the benefits of implementing a VE project, in Section 4 we focus on the empirical results of our pilot study investigating the impact on students’ intercultural sensitivity and we conclude in Section 5.

2. The VE project description and implementation guide

The goal of the cooperative VE project was to encourage students to interact with the taught material within a cooperative virtual

learning environment. We achieve this by creating groups that have an intercultural dimension, with some students from the United States, US, being grouped with students at a university in the United Kingdom, UK, and assigning them a scaffolded cooperative learning project that they work on for a continuous 5-week period during the term (semester). The program connected intermediate microeconomics students in the US with similar education-level students in a behavioural economics course in the UK. The students worked together to complete a research project on behavioural nudges used by the US and UK governments during the COVID-19 pandemic. Through this exchange, students were exposed to different cultures, languages, and approaches to economic concepts, helping to broaden their understanding of the global economy (Duffy et al., 2022).

The key to the success of VE projects is based on successful peer cooperation, which allows for students to learn from one another and through such collaboration to jointly develop skills and knowledge (EVOLVE Project Team, 2020). In order to ensure the effective implementation of cooperative learning within our VE, we embedded the five critical factors for success outlined in Johnson and Johnson (2009). We created a project that was founded on individual accountability. Individuals were graded on their own individual coursework, but this rested on positive interdependence, as the quality of the work (and associated grade) depended on the contribution of all the team members. Following Johnson and Johnson (2009), we aimed to increase interdependence by asking students to pick a team name and allocate each member a specific role (roles that were pre-designed by us). The requirement to submit meeting notes was designed to promote personal responsibility, another critical element of cooperative learning. This accountability is vital to reduce the 'free-riding problem' or the diffusion of responsibility when participating in large groups (McGoldrick et al., 2010). The four meetings structure was created to nurture promotive interaction, as were the initial ice-breaking tasks. Finally, we encouraged social skills and group processing by checking in on the students' experience and suggesting ways to improve the experience.

The following paragraphs will explain what each element contained and will help break down the steps we followed to provide a clear structure to support replication. A visual summary of the steps can be found in Fig. 1 below.

2.1. Obtain departmental approval for use of VE in teaching

Before investing time and energy in setting up a VE project it is important to ensure this learning technique is approved and supported by your department. Departmental support is vital as this will likely be a new experience for students and concerns or queries may reach other Department members. The course leader on the UK reached out the International Office at the University who were very encouraging and provided some evidence of the benefits of VE projects (as part of a wider Collaborative Online International Learning (COIL) agenda) which helped make a stronger case within the Department. This was also true for course leader in the US. At the University in the US, the course professor got university-level support from the Office of International Initiatives (OII) which gave resources on how to successfully develop and deploy a virtual exchange program within her course. It is important to highlight the aim and benefits such as student engagement and enjoyment. This project may be used as a case study in Open Days (Major Recruitment Days) or in promotional material for student recruitment. Figs. 2 and 3

2.2. Write a proposal document with clear objectives you want to achieve during the project

The next stage is to have a clear idea of what a VE project in your context will look like. It is important that before you identify a partner, you are clear about what direction this project will take. This should outline the competencies of the cohort that will be

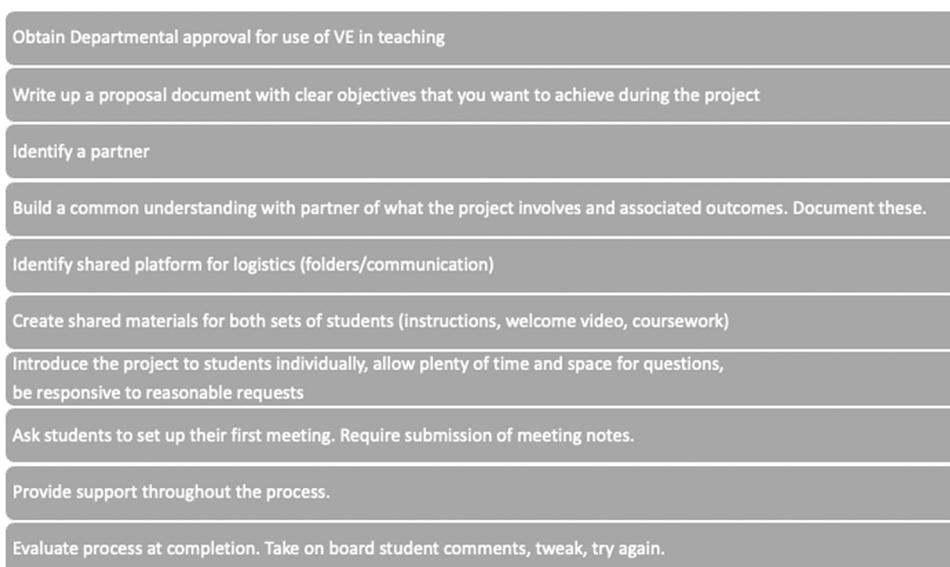


Fig. 1. Steps for cooperative VE implementation.

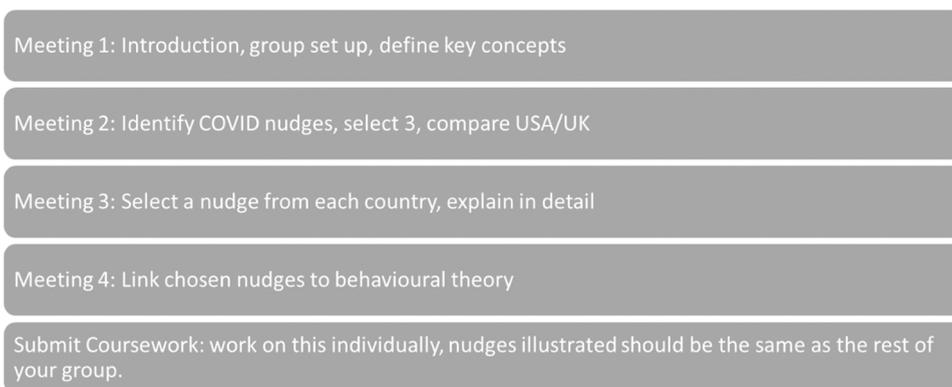


Fig. 2. Meeting outlines.

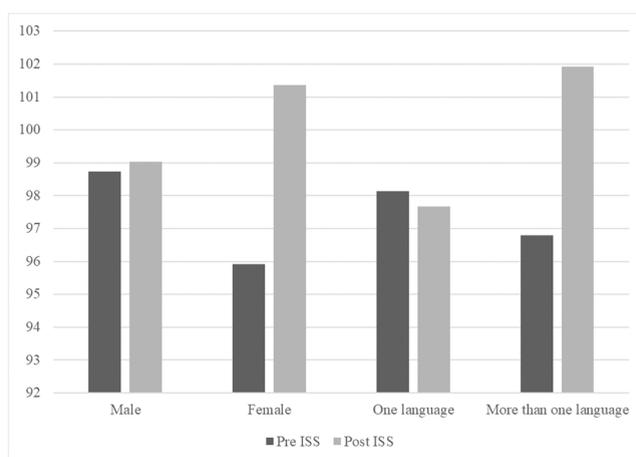


Fig. 3. Pre- and post-intercultural sensitivity scale scores by gender and multilingualism.

participating in the VE, the topic that will be discussed, the structure of the discussion (including a clear outline of the number and nature of meetings), and the output that students will need to produce. An example of the proposal written up by the lead author can be found in Appendix A: *Initial Virtual Exchange Proposal* of this paper.

2.3. Identify a partner

Finding the right partner is the most crucial step in successfully implementing a virtual exchange (VE) program, and it may also be the most challenging. Identifying a collaborator who shares your objectives and is willing to commit to ensuring the VE's success can be time-consuming. There are various approaches to finding this collaborator, including networking at conferences, leveraging professional platforms like LinkedIn to call for partners, and researching potential colleagues at universities in target countries before reaching out via email with a proposal. While these methods can be effective, engaging in conversations with potential VE partners at relevant conferences often proves most efficient. Such conferences include the American Economic Association (AEA) Conference on Teaching and Research in Economic Education (CTREE) and the Journal of Economic Teaching's Symposium on Economics Teaching (JET SET). For instance, two of the authors met at an AEA Expanding Diversity in Undergraduate Classes with Advancements in Teaching Economics (EDUCATE) workshop following the 2022 CTREE conference in Chicago.

Regardless of the initial point of contact, it is crucial to find a partner with whom open communication is possible and who shares your vision for the project's success. This collaboration will require substantial interaction and potentially some accommodation from both parties. Integrating the VE into an existing module (course) structure will necessitate changes on both sides. It is essential that both parties remain open to these adjustments and display flexibility, reflecting the behaviors that students will need to embody while completing the VE program.

2.4. Build a common understanding of the project's involvement and associated outcomes with the partner. Document these

Following the initial agreement for cooperation on the Virtual Exchange several meetings (possibly online) took place to iron out

the objectives, the structure of the exchange, and the output the students will be asked to produce. It was for each of us to understand how the project will tie into their module (course) learning outcomes and to ensure it adds value to the learning experience of both sets of students. In our case, we set up a document where all these elements were documented. We decided that students should evaluate behavioural responses to the COVID pandemic by the respective governments (US/UK). To do this, they would have four formal meetings. Each meeting had a specific objective for the students to achieve. For them to achieve this objective, we created meeting prompts (questions that the students had to discuss and answer). To ensure that this structure was followed, we required each group to submit one sheet documenting their discussions after each meeting. In the inception meeting, we asked students to assign roles to the group members. One of those roles was of the scribe, and this person was responsible for these meeting submissions. We also agreed on what the final output for the project would be, a report that asked students to personally document what they had learned about the US and the UK behavioral approaches to COVID using the insights gained from the group discussions.

2.5. Identify a shared platform for logistics (folders/communication)

As you start creating documents and material for the exchange you may want to agree on using a shared platform to facilitate implementation of the project. We had a shared folder where all the VE related material was deposited. This greatly facilitated logistics. We also agreed on the best channel for communication for our meetings and the time frame for meetings (accounting for time zone differences) that would ensure we are meeting at convenient times for both parties.

Each university had its own online learning platform, its own (very different) academic timetable, and its own module (course) outline. It took some creativity to find weeks where both sets of students were on campus and where enough module (course) content was covered to ensure useful discussion and set deadlines to fit both modules (courses). Again, flexibility and openness to change are vital here.

2.6. Create shared materials for both sets of students (instructions, welcome video, coursework)

Once the main structure was agreed on, we set about creating the backbone to the exchange, a series of meeting prompts that would be given to students before each of the four meetings they would carry out. These served as a scaffold for all meetings with clear instructions to structure the discussion. We created a welcome set of slides that explained the exchange to the students. We created the assignment sheet that both sets of students would have to complete at the end of the project. We also downloaded both class lists and grouped students into their respective groups. When grouping the students, we randomly assigned the students to each group using the learning platform for each university. We ensured that each group had at least two students from either university, so as not to create a situation where one student was alone in representing their country. This determined the total number of groups we created.

2.7. Introduce the project to students individually, allow plenty of time and space for questions, and be responsive to reasonable requests

The authors introduced the project individually to their students. The US students had already had over a month of classes before the UK students started their modules (courses) and so an element of flexibility of how and when this element would occur was needed. Different students and contexts will require different accommodations. We listened to questions and made a few reasonable adjustments to ensure all students got the most out of this exchange.

2.8. Ask students to set up their first meeting. Require submission of meeting report

The students need to be introduced to each other. We emailed each group of students individually (we had 14 groups²). We informed the students that they had been grouped together and their group numbers. We outlined our expectations of respectful communication, and we attached the first meeting prompt and outlined the timing for the first meeting. We asked the students to confirm the exact date/time and platform between themselves and to exclude us from further group communication (to ensure they didn't feel observed). The first meeting the students have is the most crucial because it helps them establish their relationship as a group. We included an ice-breaker task in the prompt for the first meeting that asked the students to create a group name based on the thing they all have in common, like Team Arsenal – because each member of the group was a fan of the soccer (football) club, Arsenal.

Students were allowed relative freedom in conducting their four group meetings. We wanted to ensure that they stayed on track, so they had deadlines by which they needed to submit the meeting report in each of the 4 weeks that meetings were held. An example of such a meeting report submitted by students can be found in Appendix B. A graduate teaching assistant (GTA) checked these, and any concerns were flagged to the module leads (course instructors). After reflecting and evaluating student feedback, the authors feel that more structure to these meetings would be beneficial. In particular, future iterations will attempt to formally timetable one-hour slots inside the teaching week where all students are expected to meet. Some groups struggled to find common free time and timetabling such slots would simplify these logistics.

² The 105 students (73 US +32 UK) who took part in the exchange were divided into 14 groups typically had 2 UK students and 5 US students. However, due to balance three groups had 6 US and 2 UK students and four groups had 3 UK students and 5 US students.

2.9. Provide support throughout the process

Some time was spent speaking to students about the benefit of the virtual exchange and the importance of clear and kind communication. The cultural context we provided was some background to the different universities, programs, and modules (courses) explained to the students. As with all collaborative learning activities, some groups will generate more productive dynamics than others. Some support for the latter will ensure all students have a fulfilling experience.

2.10. Evaluate the process at completion. Take on board student comments, tweak, and try again

Once the exchange was complete, after both sets of students submitted their final (individual) reports, we conducted an evaluation exercise. This allowed us to understand which project elements were successful and which required tweaking. It also allowed us to test whether participation in this project has been beneficial to developing the intercultural sensitivity of our students. The data collection exercise is explained in detail in the next section. Adopting a growth mindset in this project, as in all other aspects of education delivery, is crucial.

3. Benefits and challenges of incorporating a cooperative VE project in your curriculum

A successful cooperative VE project can achieve a number of objectives that are important to economics educators: supporting learning outcomes, improving student engagement and experience, and sparking joy in teaching. The following subsections outline how cooperative VE projects achieve this in more detail. We then focus on the final benefit, increasing students' intercultural sensitivity skills in the following section as we share the results of our pilot analysis. The qualitative comments are a result of the open-ended questions in the pre-survey and post-survey which we explain in more detail in [Section 4](#).

3.1. Supporting learning outcomes

The VE project created the opportunity to enhance our students' understanding of behavioural nudges by working collaboratively with their peers across the pond. The scaffolded questions they had to debate together promoted a deeper comprehension of the interconnected nature of global economies. The project developed the students' ability to apply economic theories to real-world scenarios, as they were asked to search for and discuss actual policies implemented in their respective countries to address the COVID pandemic. It enhanced their critical thinking skills, as they had to evaluate the policies they each brought forward. The application of economic theory to real world policy in different countries allowed them to cultivate a global perspective on economic issues thereby deepening their understanding of economic policies and their impacts.

3.2. Improving engagement and experience for students

VE projects create an engaging experience that improved their quality of learning of their students ([Helm and van der Velden, 2019](#); [O'Dowd and Ritter, 2006](#); [The EVALUATE Group, 2019](#); [Vahed, 2021](#)). Student engagement has been shown to be correlated to academic success and overall student well-being ([Trowler, 2010](#)). VE projects are an example of a High Impact Practice (HIP) which until the COVID pandemic been highly underutilised ([Jager et al., 2019](#)).

From qualitative feedback at the start and the end of the module (course) we are able to get a sense of the impact of the project on student experience. While students expressed some initial concerns about the project at the start of the term, the feedback at the end was overwhelmingly positive. Initial worries centered around members free-riding, and timing and coordination problems due to different time zones. Interestingly, students from the UK shared a higher number of initial concerns while the US students seemed to be excited about the project, as can be seen in the comments below:

"... I get to expand my understanding of the world by working with citizens of another country", "there's the benefit of talking with someone from a different part of the world and learning how they are affected by everything in the world," and our favourite pragmatically optimistic comment "I don't know, but new experiences are a plus."

Following the project, the feedback indicates that students overwhelmingly enjoyed the experience. *"It was new and intriguing", "What I liked about it was that this project reinforced many soft skills such as time management and communication", "It showed me networking abroad is actually pretty easy, and it shows me I can make more connections with others than I thought," "I enjoyed meeting up with people from a different country. It felt like a glimpse into the business world", "it broke barriers of distance and culture, making me realize that we, as a people, from all parts of the world belong to something greater that lies outside of ourselves".*

3.3. Sparking joy in instructor experiences

One of the project's key achievements was its ability to reinvigorate the joy of teaching by creatively embedding a well-established VE model within a cooperative learning framework tailored to economics instruction. Rather than treating VE as an add-on, this approach integrated the intercultural experience directly into course content and assessment. As experienced educators will often admit, the routine nature of delivering similar course content can sometimes lead to a sense of monotony. The introduction of the virtual exchange (VE) project, particularly in partnership with a faculty member from a different academic and cultural background,

injected creativity, new energy, and excitement into the educational process in this project. This joy also has the potential to impact students, as there is evidence (Alsharif and Qi, 2014) that instructor motivation and enthusiasm is highly correlated with students' intrinsic motivation to learn.

4. Pilot results of the impact on students' intercultural sensitivity

One pivotal benefit of the VE project is to enhance students' intercultural sensitivity skills. We carry out a pilot evaluation of the effectiveness of the cooperative VE project on this front, using pre- and post-surveys to measure changes in students' intercultural sensitivity. We adopt the Intercultural Sensitivity Scale (ISS) which captures the "active desire to motivate themselves to understand, appreciate, and accept differences among cultures" (Chen and Starosta, 1998; Chen and Starosta, 2000). In addition to presenting students with the ISS questions we asked 3 open-ended questions soliciting student expectations and concerns (pre-survey) and experience (post-survey) of the virtual exchange in order to feed into improvements for future iterations.

The surveys were administered via Qualtrics. At the UK university, they were conducted during class time at the beginning of the semester (Lecture 1) and at the end of the semester (revision lecture). At the US university, the surveys were distributed immediately before and after the VE project (weeks 8 and 13 of the semester). Ethics approval was obtained from both participating institutions. Although all students were invited to complete the surveys, participation was voluntary. For descriptive analyses of student background characteristics, data from all participants who completed at least one survey were included. To estimate the effect of the VE on ISS scores, however, only data from students who completed both the pre- and post-surveys were analysed.

From the 105 students (73 US +32 UK) who took part in the exchange, 89 students participated in one of the surveys, with 67 students from the university in the US, and the remaining 22 students from the university in the UK. The ethnic composition of participants was as follows 42 % identified as "Black, Black British, African American, Caribbean, or African" group, 29 % identified as "mixed or other", "White" identifying students account for 20 %, and 9 % of participants belong to the "Asian or Asian American/British" ethnic group. In terms of gender distribution among all participants, there are 53 students (60 %) identifying as male and 36 students (40 %) identifying as female. The students come from diverse educational backgrounds as they are from different programs. Most students (72 %) are enrolled in programs in Economics or related to Economics. In comparison, the remaining students (28 %) come from other programs, such as Finance, Philosophy, PPE, Marketing, Pre Law-Policy Science, CIS, Film and Media, and Political Science. Tables. 1-5

To estimate changes in students' intercultural sensitivity, we compared data from a pre-survey administered at the beginning of the term with data from a post-survey conducted after the students had completed their virtual exchange projects. Incomplete or partially completed surveys were excluded from the analysis, and only responses from students who completed both surveys were considered. A total of 51 students met this criterion. Descriptive analyses of the Intercultural Sensitivity Scale (ISS) scores were conducted for both the pre- and post-virtual exchange (VE) projects. To evaluate whether the changes in ISS scores were statistically significant, a paired *t*-test was performed, and a Wilcoxon rank-sum test was used to verify the robustness of the results. Considering potential heterogeneity, the sample was further stratified by gender and multilingualism to examine differences in ISS scores across these subgroups.

Compared to the average pre-ISS score of 97.35, the average post-ISS score increased to 100.18, suggesting an increase in intercultural sensitivity consistent with findings by Chen and Starosta (2000). This increase, however, was not statistically significant. Furthermore, we decompose the ISS scale across its five dimensions: interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment, and interaction attentiveness and test for differences in each individual dimension. From the results of the survey, we find positive improvements in various dimensions of intercultural sensitivity, including interaction engagement, confidence, enjoyment, and attentiveness except respect for cultural differences. There is statistical significance in two dimensions: interaction engagement and confidence.

We look at the possible heterogenous impact of the project on our students. We find that students who identified as female and those who identified as multilingual showed the highest increase in intercultural sensitivity, and this increase was statistically significant. This bodes well for a discipline like economics that has been focused on increasing diversity and inclusion (Al-Bahrani, 2022; Bayer and Rouse, 2016; Bayer and Wilcox, 2019; Bayer et al., 2020).

Table 1

Descriptive statistics of student cohort who participated in the survey.

	UK University No. of Students	US University No. of Students	Total	%(of All)
Programme				
Economics or Economics related	17	47	64	71.91 %
Other programmes	5	20	25	28.09 %
Gender				
Male	16	37	53	59.55 %
Female	6	30	36	40.45 %
Ethnicity				
White	7	11	18	20.22 %
Black, Black British, African American, Caribbean or African	4	33	37	41.57 %
Asian or Asian American/British	5	3	8	8.99 %
Mixed or other ethnic groups	6	20	26	29.21 %
N	22	67	89	100.00 %

Table 2
Summary statistics of pre- and post-intercultural sensitivity scale scores.

	N	Mean	SD	Min	Max
Pre					
Interaction Engagement	51	28.53	3.84	21	35
Respect for Cultural Differences	51	26.31	3.29	17	30
Interaction Confidence	51	18.63	3.19	10	25
Interaction Enjoyment	51	12.98	1.84	6	15
Interaction Attentiveness	51	10.9	1.81	7	15
ISS	51	97.35	10.73	65	118
Post					
Interaction Engagement	51	29.65	3.52	21	35
Respect for Cultural Differences	51	26.18	3.74	16	30
Interaction Confidence	51	19.75	3.38	12	25
Interaction Enjoyment	51	13.35	2.23	6	15
Interaction Attentiveness	51	11.25	2.01	6	15
ISS	51	100.18	11.5	72	119

Notes: The exact questions asked in the ISS survey and the coding protocol can be found in Appendix B.

Table 3
Two-sample tests for differences in ISS scores between pre- and post-VE Project.

	Wilcoxon rank-sum (Mann-Whitney) test		t-test		
	Prob > Z		Diff(post-pre)	t	P(T < t)
ISS	0.14		2.82	1.28	0.1
Interaction Engagement	0.12		1.12	1.53*	0.06
Respect for Cultural Differences	0.97		-0.14	-0.2	0.58
Interaction Confidence	0.08*		1.12	1.72**	0.04
Interaction Enjoyment	0.09*		0.37	0.92	0.18
Interaction Attentiveness	0.35		0.35	0.93	0.18
N	51		51		

Notes: *, **, *** indicates significance at 10 %, 5 % and 1 % significance level. Prob and P(T < t) represents p-values of statistics.

Table 4
The role of gender on students' ISS score.

	Wilcoxon rank-sum (Mann-Whitney) test		t-test					
	Male	Female	Male	Female				
Diff(pre-post)	Prob > Z	Prob > Z	Diff(post-pre)	t	P(T < t)	Diff(post-pre)	t	P(T < t)
ISS	0.69	0.09*	0.31	0.11	0.46	5.44	-1.63*	0.05
Interaction Engagement	0.61	0.09*	0.38	0.38	0.35	1.88	-1.79**	0.04
Respect for Cultural Differences	0.62	0.5	-0.54	-0.56	0.71	0.28	-0.27	0.39
Interaction Confidence	0.59	0.07*	0.5	0.57	0.29	1.76	-1.82**	0.04
Interaction Enjoyment	0.03**	0.73	0.69	1.16	0.13	0.04	-0.07	0.47
Interaction Attentiveness	0.14	0.00***	-0.73	-1.35	0.91	1.48	-3.01***	0
N	26	25	26	25				

Notes: *, **, *** indicates significance at 10 %, 5 % and 1 % significance level. Prob and P(T < t) represents p-values of statistics.

Table 5
The Role of Multilingualism on Students' ISS score.

	Wilcoxon rank-sum (Mann-Whitney) test		t-test					
	One	Multiple	One	Multiple				
Diff(pre-post)	Prob > Z	Prob > Z	Diff(post-pre)	t	P(T < t)	Diff(post-pre)	t	P(T < t)
ISS	0.9	0.04**	-0.48	-0.13	0.55	5.13	1.93**	0.03
Interaction Engagement	0.85	0.07*	0.24	0.2	0.42	1.73	1.88**	0.03
Respect for Cultural Differences	0.35	0.36	-1.29	-1.05	0.85	0.67	0.81	0.21
Interaction Confidence	0.67	0.05*	0.48	0.41	0.34	1.57	2.10**	0.02
Interaction Enjoyment	0.73	0.05*	-0.29	-0.42	0.66	0.83	1.68*	0.05
Interaction Attentiveness	0.61	0.39	0.38	0.64	0.26	0.33	0.67	0.25
N	21	30	21	30				

Notes: *, **, *** indicates significance at 10 %, 5 % and 1 % significance level. Prob and P(T < t) represents p-values of statistics.

While UK and US universities host international students, the composition of those cohorts differs by country of origin. For example, in the 2023–24 academic year more than 50 % of international students in the US came from India and China, whereas the UK cohort also includes large proportions from Nigeria and Pakistan (Higher Education Statistics Agency, 2023; Open Doors, 2025). Moreover, international students frequently experience acculturative stress and feel pressure to curtail or suppress their home culture in order to assimilate into the host campus environment (Andrade, 2006; Smith and Khawaja, 2011). By contrast, VE environments remove the implicit host-campus dynamic: students participate as peers on equal footing, without the expectation to adapt to a dominant host culture. Instead, they must collaborate across institutional norms, communication styles, and time zones—requiring negotiation, mutual cultural respect, and coordination. These intercultural demands appear to promote deeper development in ISS dimensions such as interaction engagement, confidence, and attentiveness.

These preliminary pilot results reflect that the collaborative VE project has the potential to increase intercultural sensitivity among the participating students. To further investigate the statistical effects of collaborative learning activities on students' intercultural sensitivity, the VE project can be extended to a larger cohort of students, ensuring a sufficient amount of data for analysis.

5. Conclusion

In this paper we explore how a cooperative virtual exchange can be incorporated into the intermediate economics course at the University in the United States and the University in the United Kingdom. We outline the process and discuss the benefits and challenges. We carry out a pilot test of the impact on student intercultural sensitivity using pre- and post-surveys, and observe slight positive improvements in various dimensions of intercultural sensitivity, which are statistically significant in the interaction engagement, and confidence dimensions. Moreover, the program's benefits were particularly notable for female students and those who are multilingual, highlighting its potential in supporting increasing diversity in economics education.

The implementation process outlined in this study offers practical steps for educators to successfully incorporate virtual exchange programs into their curricula. The flexibility of virtual exchange programs allows for customization to suit different courses and disciplines.

This paper contributes to the literature on teaching economics by highlighting the potential of cooperative VE programs in enhancing the delivery of economics modules (courses). To reinforce the pilot findings on intercultural sensitivity, future research could focus on investigating the long-term effects with larger cohorts, and potentially investigating the impact on students' career trajectories and the broader impact on their intercultural skills beyond the academic setting. One should adopt caution when applying this to higher education contexts that vary on multiple deep dimensions such as language fluency of students and economic conditions or access to higher education, which may require further accommodations.

In conclusion, cooperative VE programs hold promise as effective tools for enhancing deeper subject understanding, engagement and improving students' intercultural sensitivity skills in economics education. By integrating such programs into the curriculum, educators can better prepare students to thrive in a globalized and interconnected world, contribute to diversity and inclusion efforts, and promote a more inclusive and comprehensive understanding of the global economy.

CRedit authorship contribution statement

Amy Eremionkhale: Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Project administration. **Jana Sadeh:** Methodology, Investigation, Writing – original draft, Writing – review & editing, Project administration. **Yidi Sun:** Formal analysis, Data curation, Visualization, Writing – original draft, Writing – review & editing.

Appendix A. Initial Virtual Exchange Proposal

Virtual Exchange (VE) Proposal for ECON 3910 – Microeconomics By: US university professor

Proposal Abstract:

This virtual exchange program will connect students at the intermediate microeconomics level at a US university to students in a university in the United Kingdom (UK). This virtual exchange covers the topic of how Nudging Techniques are used in the field of Economics. Specifically, the students will be asked to review how the US and UK governments used the nudge techniques to implement their respective COVID-19 restrictions. The students will begin this analysis by first identifying the various nudging techniques used in each government. Upon completion, the students will find similarities and differences in the approaches. Additionally, the students will identify nudging behaviors related to economic incentives. To wrap up, the students will need to identify nudging techniques that would work in one country and not the other, along with the rationales.

Project Topic: Nudge Techniques and their application in the COVID-19 Era (Compare and Contrast Between Nations)

Proposal Narrative:

This proposal is for the Microeconomics course (ECON 3910) taught through the economics department in the US university. This virtual exchange (VE) section of ECON 3910 is a high enrollment (75 students) intermediate-level economics course. Many of the students in this course are US residents, with some international students from several other countries. This virtual exchange program will call on the students to relate their experiences as residents in the US to those of their counterparts in the UK.

This course's virtual exchange (VE) activities will include guided two group discussions and the creation of four (group) reports graded on a scale. In the final discussion prompt, the groups will also prepare a presentation of their findings and suggestions for future use of the nudging techniques in economics. The US university students in this large-enrollment course will be put into groups and paired with their grouped counterparts in the UK university. These groups will be assigned six (6) discussion categories, which will

allow the students to interact and work as a global team.

The first discussion is the introduction of the students to one another (post and respond to at least two other students' posts). The second discussion will involve the students figuring out their roles for the remainder of the program. For example, their group name, the group leader, group scribe, etc. The third discussion will be to define nudge and identify potential nudging techniques in the field of economics. The fourth discussion will identify some (at least two) nudging techniques used in the US and the UK that were instituted to increase compliance with the Covid-19 restrictions. The fifth discussion will compare and contrast these nudging techniques between the two countries. The students will need to rank these nudges according to their perceived effectiveness and state their reasons for the rank. The sixth discussion will be for the students to suggest nudges that they believe would have worked for the COVID-19 restriction compliance scenario and state their rationales from the economics and economics perspectives.

The students will be assigned roles with specific responsibilities to enable smooth group interaction. As they progress through the discussions, the students will rotate these roles. Each discussion category will have a group leader from the US university and the UK university teams. The students will take turns to co-lead each discussion category. Their role as leaders is to ensure that their group members communicate on the assigned topic. They will moderate and assign relevant tags and grades to each contribution from their group. The goal is to ensure that each student in the group leads the communication throughout the VE. There will also be the role of Recorder – these persons take and share notes on essential thoughts expressed in the group. They also write the final summary when applicable. The group will also have a Checker role responsible for checking the accuracy and clarity of thinking during discussions. They would also check written work and track points. At least one student from each university will occupy these roles, which will be rotated among the group members for each discussion (starting from discussion two).

Student interaction in the course will be facilitated using group discussions. Interaction among the students will be closely monitored by the professor and US university graduate research assistant to ensure that the stated engagement rules are followed. The students will be encouraged to communicate on the Google Docs or Teams platform to provide transparent communications. Grading of the VE activities will be on a scale of Excellent, Above Average, Average, Below Average, and Poor. The areas of evaluation are 1. Quality of Student Participation Within (and contribution to) the group, 2. Quality of Group Discussions 3. Quality of Group Product/Presentation.

A few technology options will be implemented in this virtual exchange course. The first is Google Sites (Docs, Drive, Sheets, Slides) or Microsoft OneDrive for collaboration among the students to create documents to be submitted for grading/review. Ment.io (or Teams) for rich discussions within and across groups in both universities. VoiceThread or FlipGrid for introducing the students to one another before being assigned to groups. These introductions can be done using Teams (or Ment.io) or on the created Google Site dedicated to the VE course in both Universities. The benefit of the Google Site is that it is free for the students once it is created. It can also ask the students to sign in using their school usernames to improve the connection to our D2L learning management system and Coventry University. To openly track team members' contributions, the students will work with google documents (or Microsoft Sharepoint) that allow for real-time collaboration from anywhere. These virtual documents will enable the professor, their graduate assistants, and the students in each team to keep track of document changes made by various team members.

The student learning outcomes from this VE course are that the students should be able to: Create and Actualize a proposed idea on an international team; Establish a global perspective when approaching problems; Effectively serve as a team lead and team member in a multinational group; Critique the different global approaches to a similar situation; Demonstrate respect for other cultures; Successfully negotiate a shared understanding of intercultural differences with openness. This VE course will improve the students' global communication in an interpersonal manner and within an international team.

The sustainability of these VE activities lies in the interchangeability of the study area from COVID-19 to any other interesting or relevant topic in the economics and economics department. The concept of Nudging Techniques is becoming an increasingly popular tool, especially in idea implementation on an international scale.

Appendix B. Sample of a 1st Meeting Report Submitted by Students

Timeline: November 5th 2:00 pm EST

Platform: Microsoft Teams

Attendance: Student 1, Student 2, Student 3, Student 4, Student 5, Student 6, Student 7

Group Name: Swag Group

Task #1:

Group Intro: go around the group and introduce yourself

2 Truths & 1 lie:

- **Student 1:** I lived in three different countries. I have 6 uncles. I know how to climb a tree.
- **Student 2:** I have my own house, I got married at 19, I have purple hair.
- **Student 3:** I have been in 3 car crashes, I went to Arabic school to learn Arabic, I run 5 miles every day.
- **Student 4:** I can speak Korean fluently, I am knowledgeable in several computer languages, I have been to nearly all 50 US states.
- **Student 5:** I have two pets. I am the first generation to go to college. I have red hair.
- **Student 6:** I am a triplet, I have broken my arm before, and my favorite color is red.
- **Student 7:** I can play the trombone, I used to do a physics degree, there's a dog in the room with me at the moment

Task #2: Assign roles within group

- **Group Leader: Student 3 and Student 6**
- **Scribe: Student 1**
- **Checker: Student 4**
- **Roll-Keeper: Student 2**
 - Task #3: Group discussion:**
 - **Define nudge (include any sources used). You should each submit your definition to the group and agree on the one you feel best describes what a nudge is as a group.**
 - **We as a team agreed to Student 5's definition of Nudge.**
 - o **Student 2:** A nudge is a tactic employed by choice architects to influence someone's behavior in a simple and inexpensive manner while maintaining the availability of all accessible options. It's frequently referred to as "non-enforced compliance."
 - o <https://www.theguardian.com/commentisfree/2020/mar/13/why-is-the-government-relying-on-nudge-theory-to-tackle-coronavirus>
 - o **Student 5:** According to Thaler and Sunstein (2008, p. 6), a nudge is "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not." <https://www.behavioraleconomics.com/resources/mini-encyclopedia-of-be/nudge/>
 - o **Student 1:** "A "nudge" takes advantage of human psychology and a number of other concepts in behavioral economics, including mental accounting—the idea that people treat money differently based on context" <https://news.uchicago.edu/explainer/what-is-behavioral-economic>
 - o **Student 3:** A nudge is a concept in behavioral economics where the decision environment (choice architecture) changes to influence the behavior and decision-making of groups or individuals.
 - o **Student 6:** Nudges are features of the choice architecture that influence the decisions people make without changing either objective payoffs or incentives (Thaler, R.H., 2018. From cashews to nudges: The evolution of behavioral economics. *American Economic Review*, 108(6), pp.1283.)
 - o **Student 4:** A way to manipulate people's choices into deciding with subtle tactics. People still have free choice but are highly influenced. [What is behavioral economics? | University of Chicago News \(uchicago.edu\)](https://www.uchicago.edu/news/2019/09/10/what-is-behavioral-economics/)
 - o **Student 7:** A nudge is anything that alters a behavior where it does not forbid or change any economic incentives. <https://www.behavioraleconomics.com/resources/mini-encyclopedia-of-be/nudge/>
 - **Define economic incentives (include any resources used). You should each submit your definition to the group and agree on the one you feel best describes an economic incentive as a group**
 - **We as a team agreed with Student 2's definition of economics incentives.**
 - o **Student 2:** Economic incentives are financial benefits offered to individuals to modify their patterns of consumption and output in an economy. Economic incentives are mostly used to change people's behavior so that desired outcomes arise spontaneously. It is a form of financial inducement that the state or corporations provide.
 - o <https://www.newscientist.com/article/mg24632811-400-can-nudge-theory-really-stop-covid-19-by-changing-our-behaviour/>
 - o <https://www.economicshelp.org/blog/glossary/nudges/>
 - o **Student 6:** Economic incentives are financial rewards provided to people to alter consumption and production patterns in an economy. The main purpose of economic incentives is to influence human behavior to produce desired results naturally. It is a type of monetary motivation that the government or businesses offer. <https://www.wallstreetmojo.com/economic-incentives/>
 - o **Student 1:** Economic incentives are "Rewards or penalties offered by government or management to induce an economic sector, company, or group of workers to act in such a way as to produce results that plan objectives or policy goals." <https://www.eionet.europa.eu/gemet/en/concept/11047>
 - o **Student 4:** A stronger form of motivation than a nudge. Influences your behavior while you are still accommodating your wants and needs. Can encourage or discourage behaviors. [Economic Incentives: Definition & Examples - Video & Lesson Transcript | Study.com](https://www.youtube.com/watch?v=Kj8j8j8j8j)
 - o **Student 7:** Economic incentives are financial rewards or penalties used to persuade economic actors to behave in certain ways.
 - o **Student 3:** Economic incentives are something, often money or tax breaks, that is offered often by the government to make someone, or something act in a particular way. <https://dictionary.cambridge.org/us/dictionary/english/economic-incentive>
 - o **Student 5:** "Money or prize offered to make someone behave a particular way" <https://dictionary.cambridge.org/us/dictionary/english/economic-incentive>
- **Highlight some differences between nudges and incentives.**
- **Student 6:** Unlike standard economic incentives, nudge policies do not alter individuals' choice sets, but attempt to influence behavior through the way in which choices are made, exploiting behavioral biases.
- **Student 1:** Nudges influence behavior instead of altering it. Nudging is not affected by the amount of money or prize that is being given. Incentives do alter behavior. Incentives use monetary and non-monetary incentives to make negotiations stronger. <https://impactually.se/behavioral-economic-and-nudging-same-difference/>
- **Student 7:** Nudge is more subtle than Incentives. I think consumers have some awareness of when there is an incentive vs, they may not realize a nudge. For example, a coupon is an incentive, and a consumer is aware of the purpose of a coupon or sale. But a consumer may not realize the gum at the checkout counter is a nudge. While they are bored in line, they will be drawn to it without realizing.

- **Student 2:** Nudges are indirect tactics used to influence someone’s behavior to move in a certain way while not taking money out of the pocket of the influencer. Economic Incentives are more direct in its aim to change someone’s behavior with influencers using financial assets to change someone’s behavior.
- **Student 4:** Unlike traditional economic incentives, nudge policies try to affect behavior through the manner in which choices are made, leveraging behavioral biases.
- **Student 3:** nudges are less obvious to the consumer than incentives
- **Student 5:** Nudges are short term ways to help or persuade someone to make a decision, meanwhile an incentive is to change behavior or influence it.

Appendix C. Data Tables

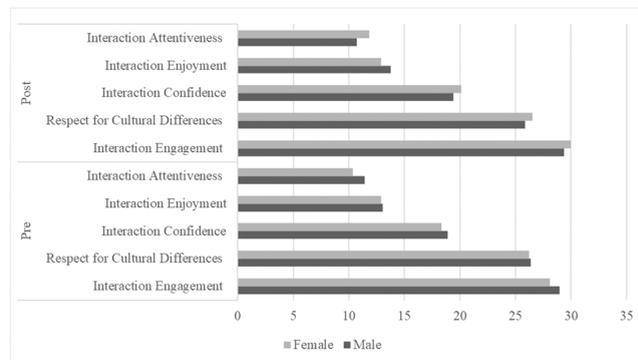


Fig. 4. Pre- and Post-ISS Dimensional Items Scores by Gender

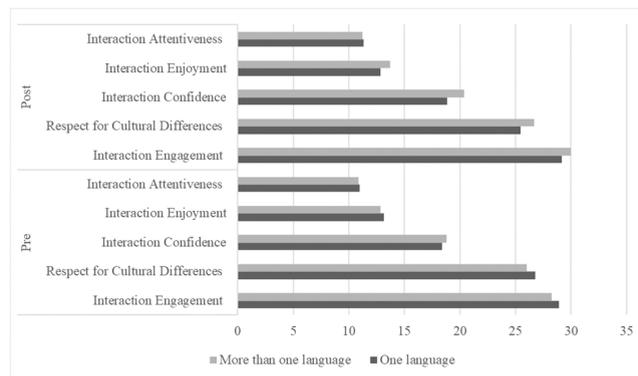


Fig. 5. Pre- and Post-ISS Dimensional Items Scores by Multilingualism

Data availability

Data will be made available on request.

References

Al-Bahrani, A., 2022. Classroom management and student interaction interventions: fostering diversity, inclusion, and belonging in the undergraduate economics classroom. *J. Econ. Educ.* 53 (3), 259–272.

Aliyu, O., Talib, O., Aliyu, F., Zaveri, S., 2022. Effect of cooperative learning on students’ achievement in physics: a meta-analysis. *J. Turk. Sci. Educ.* 19 (1), 109–122.

Alsharif, N.Z., Qi, Y., 2014. A three-year study of the impact of instructor attitude, enthusiasm, and teaching style on student learning in a medicinal chemistry course. *Am. J. Pharm. Educ.* 78 (7), 132.

Andrade, Maureen S., 2006. International students in English-Speaking universities: adjustment factors. *J. Res. Int. Educ.* 5 (2), 131–154.

Bayer, A., Rouse, C.E., 2016. Diversity in the economics profession: a new attack on an old problem. *J. Econ. Perspect.* 30 (4), 221–242.

Bayer, A., Wilcox, D.W., 2019. The unequal distribution of economic education: a report on the race, ethnicity, and gender of economics majors at US colleges and universities. *J. Econ. Educ.* 50 (3), 299–320.

Bayer, A., Hoover, G.A., Washington, E., 2020. How you can work to increase the presence and improve the experience of black, latinx, and Native American people in the economics profession. *J. Econ. Perspect.* 34 (3), 193–219.

Bernstein, J.L., 2018. Unifying SoTL methodology: internal and external validity. *Teach. Learn. Inq.* 6 (2), 115–126.

Bijnens, H., Boussemaere, M., Rajagopal, K., 2006. European cooperation in education through virtual mobility: a best-practice manual. Europace.

- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., Kerres, M., 2020. Mapping research in student engagement and educational technology in higher education: a systematic evidence map. *Int. J. Educ. Technol. High. Educ.* 17 (1), 1–30.
- Brodin, J., 2010. Education for global competencies: an EU—Canada exchange programme in higher education and training. *J. Stud. Int. Educ.* 14 (5), 569–584.
- Carroll, P., Early, J.O., Murphy, N., O'Connor, J., Mairead, B., Eagan-Torkko, M., Stone, A., 2022. Connecting classrooms and communities across continents to strengthen health promotion pedagogy: development of the transnational education and community health collaborative (TEaCH CoLab). *Pedagog. Health Promot.* 8 (4), 287–2296.
- Chen, G.-M., Starosta, W.J., 1998. Foundations of intercultural communication. *Hum. Commun.*
- Chen, G.-M., & Starosta, W.J. (2000). The development and validation of the Intercultural Sensitivity Scale.
- Dooly, M., 2022. Assessing virtual exchange practices: the evolution of VE and assessment in higher education. ERIC. (<https://files.eric.ed.gov/fulltext/ED624494.pdf>).
- Duffy, L.N., Stone, G.A., Townsend, J., Cathey, J., 2022. Rethinking curriculum internationalization: virtual exchange as a means to attaining global competencies, developing critical thinking, and experiencing transformative learning. *SCHOLE A J. Leis. Stud. Recreat. Educ.* 37 (1-2), 11–25.
- Dziedzic Kristiansen, S., Burner, T., Johnsen, B.H., 2019. Face-to-face promotive interaction leading to successful cooperative learning: a review study. *Cogent Educ.* 6 (1), 1674067.
- Emerson, T.L., English, L., McGoldrick, K., 2016. Cooperative learning and personality types. *Int. Rev. Econ. Educ.* 21, 21–29.
- EVOLVE Project Team, 2020. The EVOLVE project: evidence-based online learning through virtual exchange. *EVOLVE Proj. Publ.* (<https://evolve-erasmus.eu/wp-content/uploads/2020/03/EVOLVE-project-Summary.pdf>).
- Helm, F., van der Velden, B., 2019. Erasmus+ Virtual Exchange Impact Report 2018. Publications Office of the European Union.
- Heng, L., Yeh, H.-C., 2022. Interweaving local cultural knowledge with global competencies in one higher education course: an internationalisation perspective. *Lang. Cult. Curric.* 35 (2), 151–166.
- Higher Education Statistics Agency, 2023. How many international students are there in the UK and where do they come from? HESA Res. Brief.
- Jager, S., Nissen, E., Helm, F., Baroni, A., Rousset, I., 2019. Virtual Exchange as Innovative Practice Across Europe: Awareness and use in Higher Education. *EVOLVE Project Baseline Study.* (https://evolve-erasmus.eu/wp-content/uploads/2019/03/Baseline-study-report-Final_Published_Incl_Survey.pdf).
- James, A., 2018. Cooperative Learning in Higher Education: A Study of the Influence of Cooperative Learning on Students' Approaches to Studying. Doctoral dissertation, University of Portsmouth.
- Johnson, D.W., Johnson, R.T., 2009. An educational psychology success story: social interdependence theory and cooperative learning. *Educ. Res.* 38 (5), 365–379.
- Keramati, A., Gillies, R.M., 2022. Constraints in implementing cooperative learning in primary school classrooms. *Cogent Educ.* 9 (1), 2044240.
- Krause, U.M., Stark, R., Mandl, H., 2009. The effects of cooperative learning and feedback on e-learning in statistics. *Learn. Instr.* 19 (2), 158–170.
- Kursan Milaković, I., Fratrić Kuzmanović, A., Tešanović, D., 2021. Virtual exchanges in an inquiry-based learning environment: effects and growth. *Cogent Educ.* 8 (1), 1982601. <https://doi.org/10.1080/2331186X.2021.1982601>.
- Lee Olsen, C., Green, M.F., Hill, B.A., 2006. What is global competence? In: Lee Olsen, C., Green, M.F., Hill, B.A. (Eds.), *A handbook for advancing comprehensive internationalization: What institutions can do and what students should learn.* American Council on Education, pp. 116–120.
- Lunn, J., 2008. Global perspectives in higher education: taking the agenda forward in the United Kingdom. *J. Stud. Int. Educ.* 12 (3), 231–254.
- Machwate, S., Bendaoud, R., Henze, J., Berrada, K., Burgos, D., 2021. Virtual exchange to develop cultural, language, and digital competencies. *Sustainability* 13 (11).
- Maier, M., McGoldrick, K., Simkins, S., 2010. Implementing cooperative learning in introductory economics courses. In: Millis, B. (Ed.), *Cooperative Learning in Higher Education, Across the Disciplines, Across the Academy.* Stylus Press, pp. 157–180.
- Majewska, I.A., 2023. Teaching global competence: challenges and opportunities. *Coll. Teach.* 71 (2), 112–124.
- Mansilla, V.B., Jackson, A., 2013. Educating for global competence: learning redefined for an interconnected world. *Mastering Global Literacy, Contemporary Perspectives.* Solution Tree, New York.
- McGoldrick, K., Rebelein, R., Rhoads, J., Stockly, S., 2010. Making cooperative learning effective for economics. *Teaching innovations in economics: Strategies and applications for interactive instruction.* Edward Elgar Publishing, pp. 65–94.
- Nguyen, K., Husman, J., Borrego, M., Shekhar, P., Prince, M., Demonbrun, M., Waters, C., 2018. Students' expectations, types of instruction, and instructor strategies predicting student response to active learning. *Int. J. Eng. Educ.* 33 (1), 2–18.
- O'Dowd, R., Ritter, M., 2006. Understanding and working with 'failed communication' in telecollaborative exchanges. *CALICO J.* 23 (3), 623–642.
- Open Doors, 2025. All places of origin. Open Doors 2024 Report on International Educational Exchange. Institute of International Education.
- Qin, Z., Johnson, D.W., Johnson, R.T., 1995. Cooperative versus competitive efforts and problem solving. *Rev. Educ. Res.* 65 (2), 129–143.
- Salomão, A.C., Viana da Silva, E., 2020. The application of the global competence matrix in a virtual exchange program with US and Brazilian students. *J. Virtual Exch.* 3, 1–12.
- Shi, Y., Han, M., 2019. Constructing a cooperative learning environment in EFL classrooms. *Theory Pract. Lang. Stud.* 9 (11), 1468–1473.
- Silberfeld, C. (2006). *EU/Canada Programme for Cooperation in Higher Education and Vocational Education and Training: Education for Global Competencies. Final report.* Brussels: Directorate General. Brussels: European Commission.
- Smith, Rachel A., Khawaja, Nazeem G., 2011. A review of the acculturation experiences of international students. *Int. J. Intercult. Relat.* 35 (6), 699–709.
- The EVALUATE Group, 2019. Evaluating the impact of virtual exchange on initial teacher education: a european policy experiment. [Research-publishing.net](https://www.research-publishing.net).
- Tombak, B., Altun, S., 2016. The effect of cooperative learning: university example. *Eurasia J. Educ. Res.* 16 (64), 173–196.
- Trowler, V., 2010. Student engagement literature review. *High. Educ. Acad.* 11 (1), 1–15.
- Vahed, A., 2021. Virtual exchange as an innovative pedagogical tool to enhance students' learning. *South Afr. J. High. Educ.* 35 (2), 225–241.
- Villar-Onrubia, D., Rajpal, B., 2016. Online international learning: internationalising the curriculum through virtual mobility at coventry university. *Perspect. Policy Pract. High. Educ.* 20 (2-3), 75–82.