

6 Technological mediation in a global competence virtual exchange project: a critical digital literacies perspective

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Abstract

The changing cultural and social landscape of our world today, along with the emergence of various technologies, has redefined 21st century societies. In light of these changes, new pedagogical approaches have been implemented to support civic life, education, and communication in our highly complex, digitised era (Pegrum, Dudeney, & Hockly, 2018). One such approach is virtual exchange, a technologically-mediated practice which involves engaging classes in online intercultural interaction and collaboration projects with geographically dispersed partners (O'Dowd, 2007, 2019). Many studies (Helm, 2014; Hauck & Satar, 2018; Vinagre, 2016) have examined the role of technology in virtual exchange projects as well as the development of various digital competences, along with linguistic and intercultural learning. The present study contributes to the discussion pertaining to the role of technology in the virtual exchange context adding a critical digital literacies perspective manifested in the use of technology for global competence development and as a social praxis (Ávila & Pandya, 2013). Specifically, the study aims at exploring the students' perceptions about digital skills development through their participation in a global competence virtual exchange project, as well as the ways in which students interact with technology in order to develop global competence and active citizenship.

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1. Introduction

In a globalised world characterised by increased mobility and expanded access to technology, the need for new, 21st century skills has emerged (Dudeney & Hockly, 2016). The vast social and technological changes, along with a greater movement of people, knowledge, and ideas across borders (BrckaLorenz & Gieser, 2011), has created a world that is ever more interconnected and interdependent (Mansilla, Jackson, & Jacobs, 2013). With this reality in mind, many educational institutions have recognised the pressing need for including global perspectives in their education (Cushner & Brennan, 2007) while at the same appreciating the emerging nature of digital literacies which can support educational, professional, personal, social, and civic lives (Pegrum et al., 2018). In light of these efforts, new teaching methodologies embracing Web 2.0 technologies have been utilised in order to support innovative pedagogical interventions aiming at addressing intercultural, global, and digital objectives. One pedagogical approach that can foster global competence and the ability to “effectively navigate an increasingly digital world” (Dudeney & Hockly, 2016, p. 115) is virtual exchange. This study aims at exploring university students’ perceptions about digital skills development through their participation in a global competence virtual exchange project as well as at examining the ways in which students interact with technology in order to develop global competence and active citizenship.

1.1. Literature review

Virtual exchange, or telecollaboration, is a technologically sustained practice which involves engaging classes in online intercultural interaction and collaboration projects with geographically dispersed partners (O’Dowd, 2007, 2019). Telecollaboration projects can combine synchronous or asynchronous

interaction through a variety of Web 2.0 tools, such as threaded discussion boards, wikis, blogs, social networking sites, videoconferencing software, virtual learning environments, or 3D virtual worlds. The way virtual exchange tasks and interactions are carried out has evolved over time as more sophisticated tools and applications have become increasingly available for use (Godwin-Jones, 2019). Earlier asynchronous email and text-based collaborations which offered participants adequate time to reflect on their interactions (Helm, 2015) were followed by more recent configurations. These relied on synchronous communication, as a result of the emergence of platforms which afford audio and video interactions between participants which are more direct and efficient due to ubiquitous mobile connection (Godwin-Jones, 2019).

Previous studies (Hauck & Kurek, 2017; Hauck & Satar, 2018; Helm, 2014; Kurek & Turula, 2014; O'Rourke & Stickler, 2017; Vinagre, 2016) have examined the role of technology in telecollaborative projects as well as the development of various digital competences, along with linguistic and intercultural learning, as a major outcome of participation in intercultural encounters. For example, Helm (2014) examined the development of digital literacies through virtual exchange in foreign language education. Specifically, Helm explored the types of computer literacies virtual exchange projects fostered by analysing bilingual and lingua franca exchange projects between the University of Padova and other universities in Europe. In these exchanges, students used synchronous and asynchronous communication tools through which they developed competences such as computer-mediated collaboration, content creation, sharing, decision-making, negotiation, and privacy.

Recently, new virtual exchange configurations have emerged, following the changes in our current world which is characterised by increased global communication, mobility, and digital connectivity. The development of “active, informed, and responsible citizens who are tolerant of difference and who are actively engaged in political and democratic processes” (O’Dowd, 2018, p. 21) seems to be a critical need in an interconnected and interdependent world. With this in mind, virtual exchange can be envisioned to provide a sufficient initiative for enabling learners to cross global boundaries and come to terms with the

demands of the 21st century as universal citizens who are empowered to respond to diverse global and local problems of our contemporary society through their transnational partnerships (Nicolaou & Sevilla-Pavón, 2016).

This important evolution of virtual exchange has prompted the exploration of technological mediation in a critical and global citizenship perspective (Godwin-Jones, 2019; O’Dowd, 2019). A case in point is Helm’s (2013) study, which outlined the development of multimodal communication through the *Soliya Connect Program*. This remarkable project facilitated intercultural dialogue between students in the United States, Europe, and the Middle East. In these exchanges, students engaged in synchronous multimodal audio, video, and text conversations around issues pertaining to conflicting topics such as terrorism, religion, and violence. The *Soliya Connect Program* offers a different telecollaboration approach that can educate globally competent students and citizens (Elliott-Gower & Hill, 2015) and is an example of how technology can be utilised with a view to cultivating democratic values and fostering global citizenship in a ‘superdiverse era’ (Pegrum et al., 2018). A more recent report by Hauck (2019) discussed the concept of *critical digital literacy* and how this can be developed through virtual exchange initiatives. Hauck (2019) explained that critical digital literacy entails the ability to exercise agency, which is mediated by contextual factors, such as sites, tools, and applications utilised by participants in order to interact with their distant partners. In this sense, technology is viewed as a significant contextual element which participants interact with and this interaction results in the emergence of multiple affordances for competence learning and the enactment of individual or collective agency. Hauck (2019) examined digital-pedagogical competence development of future teachers. To assess the development of competences the study was informed by the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006). The particular study highlighted the positive impact of virtual exchange on both the awareness of the role of technology and the attitude towards the use of technological tools in educational interventions. It also drew attention to the use of technology both as a mediating element and a learning outcome of virtual exchange initiatives. In addition, the study underlined the development of multiple competences such as linguistic competence, flexibility, and interaction

which intersect with digital competences. Finally, the study emphasised the concept of criticality in terms of critical awareness of the pedagogical affordances of the tools used in the exchange, and points to the lack of the critical perspective of digital literacy that guides participants of virtual exchange projects beyond the functional uses of technology by critically engaging them in the socio-political context of the exchange (Hauck, 2019). Similarly, a recent study by Kopish and Marques (2020) explored the extent to which a transnational, collaborative curricular project based on the Collaborative Online International Learning (COIL) approach contributed to pre-service teachers' development of global and emerging digital competences. In this study, Kopish and Marques (2020) confirmed the potential of virtual exchange for the development of the aforementioned competences; however, they noted the absence of evidenced enhancement of global competence in the form of taking action in the world.

1.2. Theoretical background

The present study contributes to the discussion pertaining to the role of technology in the virtual exchange context adding a critical digital literacies perspective to the technological mediation that sustains telecollaboration projects. As virtual exchange projects are inherently technologically-mediated, the role of technology and how learners interact with the wide array of technological tools used in projects is considered to be crucial. Equally significant is how participants reflect upon the mediating role of online communication in their interactions (O'Dowd, 2016). This process of reflection is particularly significant in global competence virtual exchange projects that aspire to build the learners' internationalised profile and promote democratic participation and active involvement in society by empowering the participants to take action for improving the lives of people in the community. Mansilla et al. (2013) delineated the characteristics of globally competent students, which include the ability to delve into the world's most significant problems by conducting appropriate research, to recognise and respect others' and their own perspectives, to communicate ideas with audiences of diverse backgrounds successfully, and to be empowered to take action and participate reflectively in order to improve conditions. Byram (2008) referred to intercultural citizenship for foreign language education as part of a broader

citizenship education which transcends national boundaries and places emphasis on teaching and learning which leads to action in the world. Intercultural citizenship entails awareness and respect of self and others, willingness to interact with culturally diverse groups, as well as the acquisition of knowledge and skills that enables learners to actively participate in today's complex social contexts (Jackson, 2011).

The concepts of critical activism and democratic participation are also emphasised in van Lier's (2004) ecological theory. Informed by van Lier's notions of criticality and agency, this study explores the technological mediation in a virtual exchange project which aimed at developing university students' global competence and active citizenship. In learning, agency is a concept related to autonomy, intrinsic motivation, investment, volition, and intentionality, initiated by social, interactional, cultural, institutional, and other contextual factors (van Lier, 2004, 2008). Van Lier (2010) explains that agency can emerge individually or collectively when learners need to make choices and when they are provided with opportunities to work as participants in a community of learners. Creating a learning context that affords the emergence and development of agency is crucial in pedagogical design (van Lier, 2008).

The notion of criticality can be linked with an action-oriented approach in language education, which provides a dynamic and holistic vision necessary in our ever-changing societies (Piccardo & North, 2019). Van Lier (2004) emphasises the "democratic goal in our educational endeavours" (p. 79) and explains that the task of democracy that education serves is oriented towards critical activism. The present study also draws from the concept of critical digital literacy manifested in the use of technology as social praxis (Ávila & Pandya, 2013). According to Pangrazio (2016), critical digital literacy is based upon a transcendental perspective which links digital activity to the concepts of freedom, democracy and civic engagement. In this sense, the acquisition of technical skills is used to accomplish positive changes both for the individual and the broader social context. With this in mind, this study examines the technological mediation in virtual exchange projects guided by the following research questions.

- What are the students' perceptions about digital skills development through their participation in a global competence virtual exchange project?
- How do students interact with technology in order to develop global competence and active citizenship?

2. Method

This study adopted Design-Based Research (DBR) as its underlying methodology. As mentioned in Nicolaou and Sevilla-Pavón (2017, p. 591), DBR (Brown, 1992; Collins, 1992) is an emerging paradigm for the study of learning in context through the systematic design and study of instructional strategies and tools in iterative cycles of enactment, reflection, refinement, and redesign (Collins, 1992). DBR is deemed to be a useful paradigm in technologically-mediated projects, such as virtual exchange, where the learning process expands from a traditional classroom and where technological developments support learning and learning processes (Ørngreen, 2015). According to Juuti and Lavonen (2006), DBR involves a designer, (researcher), a practitioner (teacher), and an artefact (web-based learning environment). In the case of virtual exchange projects, the web-based environment plays a crucial role in successful or failed interaction and collaboration between the learners. As O'Dowd (2019) proposes, emerging frameworks of virtual exchange should offer opportunities for “increasing awareness to how intercultural communication is mediated by online technologies and how social media can shape the creation and interpretation of messages” (p. 23). Within the framework of a DBR design which included an exploration, an implementation and a reflection phase, this paper reports on the third iterative cycle of the implementation of a virtual exchange project.

2.1. Settings

The study is situated within the Youth Entrepreneurship for Society (YES) virtual exchange project carried out between a Cypriot and a Spanish university. The

YES project was a social entrepreneurship virtual exchange project designed with a critical approach, and was an attempt to expand telecollaborative content-based language learning by connecting dispersed, culturally diverse students at two universities as well as by involving local Non-Government Organisations (NGOs) based in the two participating countries, Cyprus and Spain (Nicolaou & Sevilla-Pavón, 2018; Sevilla-Pavón & Nicolaou, 2020). The project was a pedagogical intervention which was implemented with an ecological perspective on learning, thus viewing technology as an important mediating contextual element, offering opportunities for meaningful interaction, critical co-creation of knowledge, and exercising of social agency within a real-life context. The project aimed to link the classroom with the local community and to foster students' global competences (Council of Europe, 2016) and active citizenship, as well as to promote youth participation in society through digital innovation. The YES project was embedded in two English for Specific Purposes (ESP) modules at two higher education institutions. Specifically, the YES project connected 39 students of Business Management at a Cypriot university and 19 students of International Business at a Spanish university. The intervention involved the use of English as a lingua franca and communication modes included synchronous and asynchronous interaction in a blended learning environment. Web 2.0 tools included the use of Google applications as well as additional learning management systems and multimedia software (Nicolaou & Sevilla-Pavón, 2018; Sevilla-Pavón & Nicolaou, 2020). Table 1 summarises the technologies used in the virtual exchange in connection to the project's tasks and activities. For more details about the task sequence of this project see Sevilla-Pavón and Nicolaou (2019).

Table 1. Technologies, tasks and activities

Technologies	Tasks and activities
Google+	Creation of individual digital profiles
Google+ Communities	Asynchronous communication in the form of posts, comments, sharing of text, images, and multimedia files, such as digital stories
Google Mail	Asynchronous communication among students, between students and teachers, and between students and NGO representatives

Google docs	Collaborative creation of documents, such as problem-solving reports, and digital stories scripts
Google slides	Collaborative creation of presentations and elevator pitches
Movie Maker, iMovie, Animoto, GoAnimate, Photoshop	Collaborative creation of multimedia artefacts, such as digital stories demonstrating innovative, entrepreneurial solutions addressed to current, social problems indicated by local NGOs and volunteer groups

2.2. Participants

This paper reports on the Cypriot perspective of the virtual exchange, focusing on data collected from 39 ESP students of Business Management at the Cyprus University of Technology (CUT). The CUT is a Greek-speaking university that admits students from Cyprus and Greece. The context is rather monocultural and monolingual, and interaction with, and knowledge of, other cultures are minimal or even negligible within the university. Cyprus also ranks quite low in Erasmus youth mobility programmes, both inbound and outbound. It is assumed that the students' limited interaction with peers of diverse backgrounds may play a vital role in shaping their attitudes and openness towards difference and it may affect the development of global competences. At the same time, the university is a *high-tech environment* (Pegrum et al., 2018) and offers to its students the opportunity to work with various technologies.

2.3. Data collection strategies

Qualitative data were collected by means of focus groups and written reflections. Focus groups were conducted upon completion of the project while reflection papers were composed at three stages during the exchange. Transcriptions of focus groups with 30 students, and 98 reflection papers composed by 39 students at the Cypriot university were entered and analysed in the NVivo qualitative research software. The method of Thematic Analysis (TA) was used; "TA is a method for identifying analyzing, and interpreting patterns of meaning ('themes') across qualitative data" (Clarke & Braun, 2017, p. 297). To measure the inter-coder reliability, the data set was given to another independent

researcher who coded 10%. Cohen's (1960) Kappa was calculated to be 0.69 which, according to Stemler (2001), is considered to be satisfactory.

2.4. Data analysis

In order to answer the research questions, the *revised framework of digital literacies* by Pegrum et al. (2018) was utilised. The framework was first published by Dudeney, Hockly, and Pegrum (2013) and was extended and republished five years later in light of constant technological and cultural, socio-political developments which mandate a more critical perspective on technologies and the information and communication channels they afford (Pegrum et al., 2018). The revised framework comprises four major focus areas: communication, information, collaboration, and (re)design. The focus areas include different literacies, such as multimedia literacy, information literacy, and intercultural literacy. In order to answer the first research question, emphasis was placed in the participants' perceptions of the development of digital literacies. In order to answer the second research question, there was an effort to identify instances whereby direct or indirect connections were made between technological mediation and the development of global competences and active citizenship, during the timeframe of the virtual exchange tasks and activities.

3. Results and discussion

The analysis of data provided insights pertaining to the role of technology in the specific pedagogical intervention, indicating that technological mediation was considered as an important element of the virtual exchange context. The qualitative analysis suggested that the affordances of the technological tools used in the exchange were satisfactorily perceived and utilised by the participants. The students seem to have acquired various digital skills and the sustained interaction with technology appears to have facilitated the development of global competence and active citizenship. In addition, the results of this study add to the discussion around the digital literacy divide which challenges Prensky's (2001)

dichotomy of ‘digital natives’ and ‘digital immigrants’. To illustrate, a comment mentioned by Student 29 follows:

“It was generally nice to learn some things on the Internet: we learned how to use the Drive, Google, the Internet, email. Previously we only used the Internet for Facebook, we did not use any other applications; it was really nice”.

In this study, the findings suggest that even though there seems to be some comfort with technology in the ‘Net generation’ (Tapscott, 1999) and particularly with its social use, this level of comfort does not seem to transfer to learning (Dudeny, 2011). However, the fact that participants were ‘tech comfy’ facilitated a smooth transformation of technology use from social to more pedagogical (Dudeny, 2011), and contributed to the acquisition of new technological skills and the familiarisation with new tools, such as Google applications.

3.1. Digital skills development

With regard to the first research question, the participants seem to have developed various digital literacies through their participation in the virtual exchange project. One of the competences was multimodal literacy, which was mainly attributed to the Digital Storytelling (DST) task that was included in the project. DST can be defined as the blend of the longstanding art of telling stories and the 21st century practice of putting together a variety of available contemporary multimedia tools, including graphics, audio, video, animation, and web publishing (Lambert, 2013; Robin, 2009). DST is a technologically challenging task which makes it an activity that fosters digital and technology skills (Darvin & Norton, 2014). In this study, participants mentioned their acquired ability to create a short video (digital story) utilising different multimedia tools. An additional literacy that seems to have been developed was search literacy as the participants needed to make effective use of different search engines in order to facilitate communication with their foreign partners and to complete the tasks. Furthermore, security literacy appears to have been enhanced as part of a broader personal literacy. Participants mentioned their

acquired knowledge in protecting their digital identity and their privacy in terms of document and image sharing.

Moreover, participants referred to their ability in participating in the online network created for the purposes of the virtual exchange project and building collaborations in order to achieve common goals, indicating the development of network and participatory literacy. Since virtual exchange projects are inherently intercultural, usually aiming at building participants' intercultural communicative competence (Byram, 1997), this project was not an exception. Through the deployment of the recommended synchronous and asynchronous tools (Google applications), as well as through the use of additional preferred communication channels, such as Skype or Facebook, participants developed intercultural literacy in the form of being able to communicate effectively with their foreign counterparts and acquiring knowledge about their culture.

Finally, the development of critical literacy, which is described in the revised framework as the creation of "productive, critical contributions to the world" (Common Sense Education, 2017, cited in Pegrum et al., 2018, p. 10), was manifested in the participants' meaningful engagement with technology in their effort to discuss, research, create, and share innovative digital solutions addressed to local organisations' real social problems (Nicolaou & Sevilla-Pavón, 2018; Sevilla-Pavón & Nicolaou, 2020). Overall, participants in the virtual exchange seem to have developed various digital literacies through their active participation in the project's tasks and activities. Table 2 summarises the participants' development of digital literacies evidenced by verbatim comments.

Table 2. Development of digital literacies

Digital literacies development	Students' quotes
Multimodal literacy	"We were able to make the video (digital story) about our product, using the multimedia that we needed" (Student 26).
Search literacy	"Sometimes it helped us correct ourselves using Google translate and search for information on the Internet in different websites" (Student 28).

Security literacy	“But I will keep on using Google Drive and Gmail as you can send your work and do lots of other things. It’s much easier than what we thought eventually. You can upload pictures, save them, and limit access to yourself only” (Student 29).
Network and participatory literacy	“Technology helped us with the collaborative tasks and to achieve our goals; we were able to complete them together as a team electronically” (Student 8).
Intercultural literacy	“By all this technology we have today me and my team learned a lot of things about their feelings, their thoughts and about their culture. By video calls and emails we came closer and learnt about their opinions” (Student 23).
Critical literacy	“After the first successful synchronous exchange two weeks ago, we had to do another one with another subject. We had to discuss the two different countries, Cyprus and Spain, and address some social issues. Also we had to talk more about the Cypriot NGO’s challenge and the Spanish NGO’s challenge and provide each other with help in solving it. This time I did the exchange only with my group via Hangouts and we focused more on our NGOs” (Student 14).

3.2. Global competences development and active citizenship

The second research question focused on the participants’ interaction with technologies, and on how this interaction facilitated the development global competences and active participation in society. The analysis of data indicated that the participants’ interaction with different technologies contributed to the development of various global competences, such as autonomous learning skills, flexibility, and adaptability (Council of Europe, 2016). Participants appeared to have acted autonomously and with a flexible attitude in order to adapt to the situation and overcome technical barriers. This was manifested in the fact that, independently and without direct supervision or guidance, they evaluated the different social networks that afford opportunities for interaction. By comparing and contrasting them, and analysing their benefits and drawbacks, they examined the challenges they faced before making their final selection of the most suitable social network. In many cases, participants demonstrated flexibility and adaptability using different modes of communication to sustain interaction with

their partners. [Table 3](#) summarises the students’ interaction with technology and the development of global competences.

Table 3. Development of global competences

Global competence development	Students’ quotes
Autonomous learning	“I personally learned that when you have a difficulty, you can find a different way; like when we had to talk through video calls, sometimes we had a problem so we texted each other. Or, while we were making the introductory videos or the digital story, we definitely faced various difficulties, but we tried to cope with the time we were allowed in order to complete them and with the resources that were available to us” (Student 11).
Flexibility and adaptability	“We had a talk from messages and we decided to make a video call in Hangouts, but a problem emerged with our microphone and they couldn’t hear us. Then we decided to make a video call from Facebook but their Internet connection was low. Eventually, we did it and we had a talk for about half an hour” (Student 19).

Most importantly, it appears that the technological mediation in this project was conducive to critical global competences, such as civic-mindedness and active citizenship. In the YES project, technology was used with a critical perspective as participants were prompted to join the ‘maker movement’ ([Gauntlett, 2013](#)) by co-creating innovative digital artefacts in response to current social problems ([Nicolaou & Sevilla-Pavón, 2018](#); [Sevilla-Pavón & Nicolaou, 2020](#)), thus becoming active, engaged citizens rather than users or consumers of technology and resources ([Selwyn, 2014](#) cited in [Pangrazio, 2016](#)). This critical engagement with technology led to the development of civic engagement in society ([Godwin-Jones, 2019](#); [O’Dowd, 2019](#)) and civic-mindedness, as this is described in the [Council of Europe’s \(2016\)](#) Reference Framework of Competences for Democratic Culture.

[Table 4](#) summarises the participants’ critical interaction with technology and the development of civic-mindedness.

Table 4. Development of civic-mindedness

Civic-mindedness	Students' quotes
Becoming digital 'makers' in order to improve the situation of other people in the local community	"Our business idea is an app that will help immigrants to learn Greek for free by a code that they will take by miHUB. The thought about this idea was inspired by the problem miHUB (Migrant Information Centre) had; that is the communication problem that immigrants face when they come to Cyprus. The solution that the foreign students gave to us is that we can maybe contact a Greek organization similar to ours and explain to them the problem we have" (Student 16).
Discussing what can be done to help make the community a better place	"After all we talked about our organisations' problems. Their organisation helps women and children who live in poor conditions; their organisation's problem is that there are not many people who are willing to help them. So our suggestion for a solution to their problem was to make people sensitise about their mission so they will feel how difficult it is to live in such poor conditions" (Student 17).
Discussing volunteerism and charitable activities	"Apart from this, we also discussed our NGO's social challenge and we helped each other by giving a solution to the problem. For example, our organisations were facing the same economical problem. So, they suggested to organise a festival or a charity marathon with the aim to raise money and maybe some advertising leaflets would be a good idea for people to get to know the organisation" (Student 18).
Taking action to solve environmental problems	"Our partners decided to create a product. The basic purpose of this product is to reduce plastic pollution in the world" (Student 21).
Supporting organisations addressing social issues	"Yesterday I was having my second synchronous exchange with my partner from Spain. This time, we had to discuss how different countries address the same issues. Also, we had to talk about the Cypriot NGO's challenge and the Spanish too and helping each other to solve the organisations' problems" (Student 2).

3.3. Limitations

This study yielded interesting results in response to the two research questions. However, the results are limited to the Cypriot part of the exchange. The perceptions of the participants from the Spanish university would provide

further insights as to the development of digital literacies and global competence learning. In addition, even though both focus groups and reflection papers were analysed to triangulate the data, they were not exhaustive in capturing the complete picture of the learners' experiences as described in this paper. Interaction data on Google Hangouts, Google+ Communities, and email exchanges would have been valuable in recording instances of critical interaction with technology as well as digital and global competence learning.

4. Conclusions

The virtual exchange reported in this study draws attention to critical digital literacies and the potential of computer-mediated communication to provide opportunities for authentic communication and purposeful collaboration within international partnerships, with a view to responding to critical global challenges and community problem solving. In this global virtual exchange project, technology served as a crucial contextual element that related learners with other learners, with teachers, with civil society, and with resources. The sustained intercultural synchronous and asynchronous interaction and the collaborative creation of authentic digital artefacts involved the use of technology in a creative way and activated various competences, such as autonomy, flexibility, adaptability, as well as the orchestration of multimodal skills. In addition, the technological tools facilitated discussions about current societal challenges at local and global level. Through these discussions, students learned about organisations and volunteer groups that promote human rights, and shared this information with their partners to inform them and raise awareness. The participants moved beyond the functional uses of technology (Hauck, 2019) and utilised technological tools to reach out to their local communities and address local challenges through international, action-oriented, problem-solving engagement. In this project, the role of technology was to optimise the learning environment with its unique affordances. Therefore, technology was viewed through the lens of its potential to support the humanistic role of education by mediating relationships and contributing to the participants' active participation in society.

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