Exploring Technology and AI in Intercultural Citizenship Education: Opportunities, Challenges, and Ethical Considerations

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Abstract

Societies are experiencing evident disruptions and increasing levels of violence, intolerance and hate. Similarly, the rapid evolution of technology and the emergence of Artificial Intelligence came to provoke deep changes in society. Therefore, schools mirror these broader societal challenges and changes, fostering environments that promote respect for others and embrace otherness [1]. *It is crucial that schools facilitate meaningful interactions, using emerging technologies and AI, and shifting the teaching and learning process irreversibly. The research was guided by the primary question, "How can intercultural technology projects improve teaching and learning while fostering communication based on respect for individual and human rights?" This paper explores the potential of using technology and AI in intercultural projects, enhancing both the advantages and pitfalls. The results also demonstrate that technology-mediated intercultural encounters can be remarkable and transformative experiences, while also reflecting on the complex role of AI and technology in education.*

1. Introduction

We live in a highly disruptive, intolerant, and contradictory global world [2]. Involuntary mobility and large-scale migration force people to confront cultural differences and experience difficulties in communicating successfully across those differences [3]. Hatred and conflicts have dramatically emerged as a response to irreconcilable polarised positions.

Societies must increase efforts to foster understanding across cultural diversity, tolerance and respect one another. The diversity of young people in schools [4] is increasing, and teachers must be prepared to deal with that diversity [5]. Interaction with otherness and appreciation of differences [6, 7] should be encouraged to recognise peoples' cultural identities, particularly in educational settings. Thus, English as a Foreign Language class appears to be the appropriate context to establish communication between cultures [8] and stimulate the ability to use the language in socially and culturally appropriate ways [9].

The intercultural approach to education should also be closely linked to the development of technology and digital innovation [10], and the emergence of artificial intelligence in recent years, which have created new educational opportunities and challenges. The use of technology and AI has the potential to revolutionize learning by creating more interactive and personalized learning scenarios [11], but it also raises ethical and efficacy questions.

In this paper will also describes how an intercultural project aimed at implementing an intercultural curriculum intersects with the use of technology and AI in education, exploring both the benefits of its use and also the ethical and efficacy-related challenges, particularly in the development of certain learning skills.

2. Framing the problem: problem questions

The challenges faced by our modern societies are intensified by cultural diversity giving origin to conflict, discrimination, and inequality. However, there appears to be some consensus on the role of education in contributing to a better and more equitable society. Collaboration across borders play a fundamental role in developing social cohesion, innovation, and strengthen cultural identities and active citizenship.

It is the teacher's responsibility to prepare students to communicate socially and culturally, allowing them to become increasingly proficient intercultural speakers in our challenging 21st-century contexts. Thus, two major questions seem to arise from this reflection:

i. How can technology-based school intercultural projects debunk stereotypes and prejudices while fostering communication based on respect for

individuals and human rights as the foundation of social interaction [12]?

ii. How can technology-based intercultural projects in schools broaden students' knowledge skills and develop intercultural and linguistic competences?

3. Combining Intercultural Citizenship with Technology and AI

Education should contribute to building a better society [13] and foreign language teaching should encourage the use of language in socially and culturally appropriate ways [9], promoting intercultural competence to communicate appropriately and effectively [14]. Through fostering empathy and open-mindedness [15], foreign language classes should also be places that promote respect and tolerance [16], thereby contributing to the development of citizens who respect others, value diversity, and embrace otherness [17].

The project adopts a curriculum development approach that combines intercultural citizenship education with technology and AI. To better grasp this paradigm, some of the underlying principles and contributions must be outlined.

3.1. Multiculturalism, Interculturality and Citizenship education

Societies are more connected than ever [17] essentially due to technological advancements and increased mobility of people. Communicative misunderstandings persist [18], particularly in a world that is a constantly changing patchwork quilt of cultures [19]. The Council of Europe has developed policies to address challenges in diverse democratic societies by promoting interculturality, in contrast with multiculturalism, which promotes coexistence without interaction [20]. Then, peace and intercultural dialogue can only exist in a society where all citizens value respect for cultural diversity and share universal values and human rights.

Thus, the Council of Europe created the (2018) Reference Framework of Competences for Democratic Culture to provide a common reference framework for the development of democratic and intercultural competences. It aims to combat hate speech and radicalisation, establish fruitful relationships across differences, live peacefully and actively participate in democratic culture through intercultural dialogue [21]. In other words, to empower learners to think critically [22] and to "take action" in their communities, through a whole-school approach [23] to human rights and citizenship education. Consequently, the current study aims to integrate Intercultural Citizenship Education within foreign language learning.

3.2. Technology in Education

The use of technology is increasingly important in our lives and is an integral aspect of education [24], as we live in the 'digital age,' which means its use presupposes that education is redefined and reimagined in light of technology. However, the word 'technology' implies a very broad usage that needs to be narrowed. Technology comes from the Greek technología. Breaking down the word, *techne* means skill, art/craft, 'know-how,' or the knowledge of how to make things that would otherwise not exist (Agar, 2020), and *-logia* means the understanding of something. The term 'technology' only became widely used in the latter half of the twentieth century. By then, the term had already become conceptually ambiguous, meaning that it begun being employed in either broad or restricted senses, sometimes encompassing cultural or social components, sometimes reduced to basic tools [25]. However, technology should not merely be viewed as a tool, but rather as a medium that shapes culture [26] and a process by which humans modify nature to meet their needs and wants [27] When using technology, the focus should not be on technological devices, tools, and applications per se, but on the practices and activities that surround them and the meanings that people attach to it [27]. Using technology also implies a paradigm shift, focusing on task-based learning and a learner-centred pedagogy.

From the overhead projectors of the eighties and nineties to today’s computerized devices to access data (laptops) or to transmit data (cameras), systems software, applications software that help users perform an activity (search engines, games), simulation software, data processing tools, AI tools, physical robotics, and manufacturing technologies (3D printers) [27], there has been a great change, that has led teachers to continuous professional development, to ensure that technology foster quality learning outcomes.

Digital technologies have become central in schools and universities, and schools and families worldwide spend significant amounts on computers, software, and Internet connections. In the majority of developed countries, technology is widely used in education, and one-to-one laptop or tablet programs that provide a computer to each student are becoming increasingly widespread [28]. However, digital technology use is still not evenly accessible across countries, which leads to a digital divide [29, furthering the gap between the developed and underdeveloped world [30] and resulting in inequality of access to and use of technology [31], educational opportunities and digital literacy skills.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) aims to ensure that all countries, both developed and developing, have access to the best educational facilities required to

prepare young people to play an active role in modern society and contribute to wealth creation. Many countries consider understanding information and communication technology (ICT) and mastering its basic skills and concepts as core components of education, alongside reading and writing [32]. The majority of the evidence suggests benefits of its use, with its impact on students' engagement being one of the top benefits [33].

International reviews and meta-analysis show evidence of the use of technology to enhance learning across a range of subjects, and supplementing traditional instruction rather than replacing it with digital interventions can have the greatest positive impact. [34]; however, using technology may be more effective for low and medium ability students than for high ability pupils. [35], and disadvantaged students may benefit more than advantaged students from technology interventions [36]; or it might have no difference between disadvantaged and advantaged pupils [37]. Ultimately, technology use might offer no significant benefit [38], or instructional delivery via technology or traditional methods makes no difference [39].

In summary, despite the controversy, when used cautiously and in a balanced approach, ensuring accessibility for all learners, technology can enhance learning and teaching, and it can become an invaluable tool to foster engagement in the classroom and improve learning outcomes [40].

3.3. AI use in Education

Although there is debate surrounding the use of technology in education, studies point to benefits in terms of processes and results [41]. The last technological development generating the most interest is Artificial intelligence (AI) [42], which has quickly established itself as a transformative force in a wide range of industries, including education [43], forcing a deep reflection and redefinition of practices in education.

A million-dollar question, "What is AI?". AI is a computer system that performs tasks that humans need intelligence to do [44]; It can be considered as augmented intelligence [45] or, basically, anything that makes machines act more intelligently [46]. Artificial intelligence is not a substitute for human intelligence.

According to Fei-Fei Li, it is a tool to amplify human creativity and ingenuity [47]. So, AI is the fusion of many fields of study, such as Computer science / electrical engineering, Mathematics / statistics and philosophy, and we already see AI integrated in everyday decisions and actions.

Generative Artificial Intelligence, or GenAI, is an AI technology that can generate new and distinctive data, such as images, music, writing, and complete virtual worlds [48]. Unlike traditional AI models, which rely on pre-defined rules and patterns, generative AI models use deep learning techniques and large datasets to generate entirely new data for a variety of applications [49].

Over the years, AI has become useful across various domains, significantly impacting people's lives, and it promises substantial benefits for humanity [50]. However, there are many concerns related to the development of AI: mass unemployment [51], safe and security, particularly regarding mass surveillance [52], manipulation by personalised algorithms [53], and privacy issues.

AI's influence on education is profound, and advancements in artificial intelligence have had a huge impact on education. AI is transforming educational systems, impacting student learning, teacher practices, and the functioning of institutions [43], as it allows personalised learning [54], administrative efficiency and real time feedback [43], data analytics to improve learning [55], resource accessibility [43], and inclusion [56], among many other benefits.

Many Hollywood scenarios are still a long way off, teachers' concerns about being replaced and ethical use by students are at the top of the list, indicating significant challenges remain. As Fei-Fei Li points out, AI is made by humans, intended to behave like humans and affects humans [57]. So, if we want it to play a positive role in tomorrow's world, it must be guided by human concerns.

4. Methodology

The research methodology adopted was a case study format and the following data collection instruments were used:

- Autobiography of intercultural encounters;
- Portfolio of competences;
- Questionnaires;
- Focus group interviews;
- Direct observation of students' participation and involvement in different activities, with motivation indicators that show how students actively engaged in activities and were willing to learn. Observations were conducted using semi-structured observation grids, with clear research objectives visibly identified;
- Language formative tests, Google Forms, quiz results, and assignments;
- Cambridge placement tests and Cambridge English qualification exam.

5. Participants

The study was carried out in two mixed-ability classes over three academic years. The majority of pupils were friendly, committed, and hard-working, but most had significant learning difficulties and low language proficiency. As a result, numerous pupils benefited from targeted intervention and learning support programs. In addition, several students had familial issues and complex socioeconomic backgrounds, requiring psychological monitoring.

A Cambridge Assessment Placement Test was used to assess students' language proficiency at the start of the project. Based on their results, students were assigned to the following proficiency levels (see Figure 1):

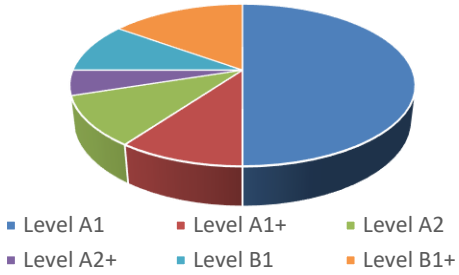

Figure 1. Students' Proficiency level according to Cambridge Placement Tests

6. Development and procedure

Before proceeding with the findings and discussion, it is important to note that the case study was conducted in two distinct phases: before and after the emergence of artificial intelligence, resulting in differing findings, as will be explained later. In the first phase (see Figure 2), the work carried out consisted of the following:

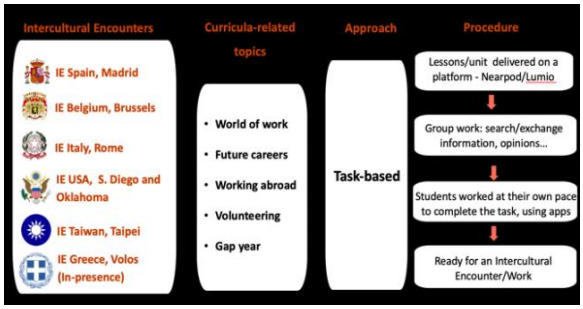

Figure 2. Research project – Intercultural Encounters and Activities

Students participated in intercultural encounters (hereafter referred to as IEs) with other students or young professionals from Spain, Belgium, Italy, USA, Taiwan and Greece. Students addressed some curriculum-related topics, such as the world of work, future careers, using a task-based approach, with the tasks delivered through LMS platforms. Students collaborated to accomplish the tasks and presented their work and findings in open forums or intercultural encounters.

Several apps and LMS platforms were used to facilitate interaction and collaboration. Figure 3 shows the most important and frequently used apps and LMS platforms:

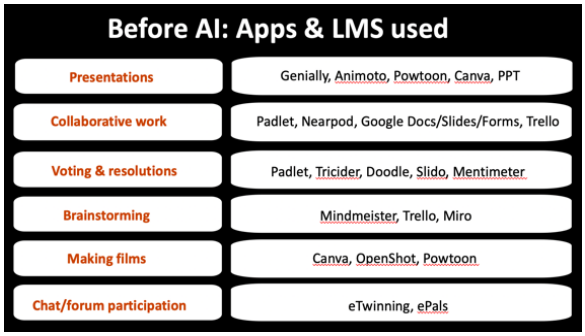

Figure 3. Research project – Apps and LMS used

After the emergence of AI, a brave new world opened up and students began to incorporate other apps into their workflow. These new tools enabled students to explore tasks with greater autonomy, allowing them to make more decisions about how to approach their tasks. As a result, they took more initiative in their learning processes and more control over their decisions. However, the overall structure of activities and procedures remained essentially unchanged, ensuring continuity and consistency in the project (see Figure 4).

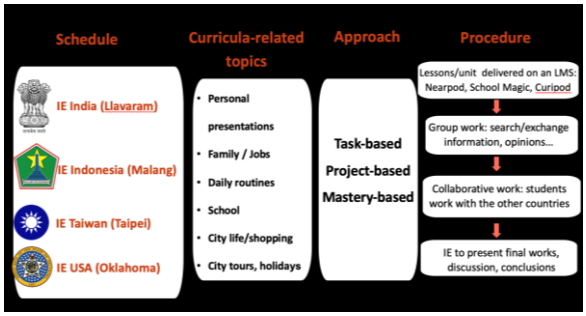

Figure 4. Research project – Structure of Activities and Procedures Unchanged

Students participated in IEs with other students from India, Indonesia, Taiwan and the USA. Students addressed some curriculum-related topics, such as family, daily routines, school, etc., using a task/project-based approach to learning and also a

mastery-based learning [58], as students worked at their own pace to achieve deep understanding before moving to another topic. Students collaborated to accomplish the tasks and presented their work and findings in open forums or IEs.

The use of technology witnessed a turning point with the release of ChatGPT by OpenAI, as it changed completely the landscape of education; the classes involved were no exception. Then, for multi-purpose and tasks, such as creating images, talking about images (instructions), browsing the web, learning something new, summarising meetings/encounters, quizzes, writing, brainstorming, editing and exploring ideas, and much more, ChatGPT, Alayna by Google and Copilot by OpenAI/GitHub, were thoroughly experimented and used.

Several other apps and LMS platforms were used to facilitate interaction and collaboration. The most important and frequently used were (see Figure 5):

Figure 5. Research project
– Apps and LMS used after AI

Teachers and students found the endless world of Generative AI (GenAI) and utilised many apps to improve their writing skills, but there were evident drawbacks in terms of learning and language development, as will be discussed further (see Figure 6).

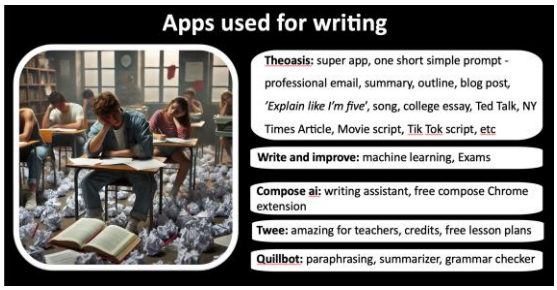

Figure 6. Research project
– Apps used for writing

7. Findings

The following are the essential findings in response to the problem questions, before the advent of AI.

i. In formal education, students have limited exposure to cross-cultural encounters, and they view them as highly positive and transformative.

In general, students' reaction to the experience of interacting with other cultures was extremely positive. The focus was on the three main IEs (see Figure 7).

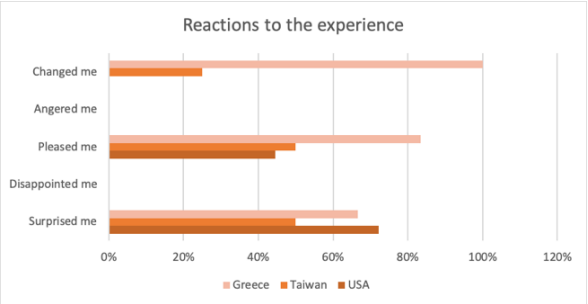

Figure 7. Students' reactions to the experience

ii. Virtual IEs enabled respectful intercultural communication and improved intercultural citizenship competence more than in-person IEs.

The virtual context promoted greater respect because it unfolded within a short period of time, and implied geographical distance. Another explanation could be the level of nervousness and insecurity imposed some restraint and respect.

iii. IEs and their preparation improved digital literacy.

Digital skills were measured before the start of the project and after its completion (see Figure 8):

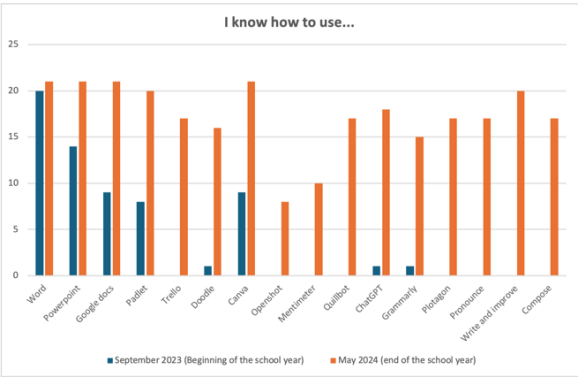

Figure 8. Students perceived digital competence in using various tools

iv. IEs improved linguistic skills and competences (before AI).

The students' intercultural contacts contributed to

language learning and increased intrinsic learning motivation. They improved their linguistic skills in terms of phonology, syntax, vocabulary, and morphology, gradually becoming more linguistically competent:

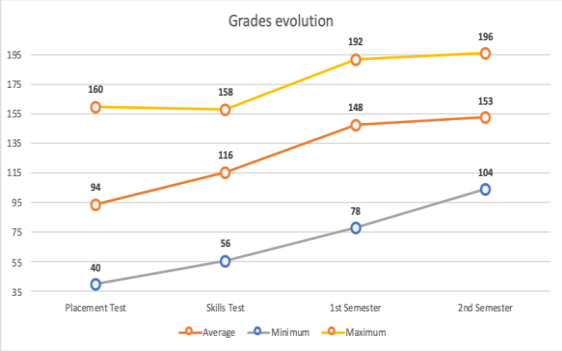

Figure 9. Students' grades evolution over the course of a school year

5. IEs and their preparation improved certain linguistic skills and competences, mainly speaking skills…
Students used several apps to develop listening, reading and speaking skills, with a special focus on speaking skills:

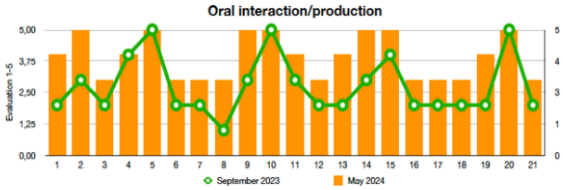

Figure 10. Improvement in students' speaking skills over the school year.

But there was a noticeable decline in writing skills and independent thinking.
Students started using GenAI and there was a clear overreliance on generative tools like ChatGPT for written assignments and idea generating, which led to progressive hampering of competences and decline in writing skills:

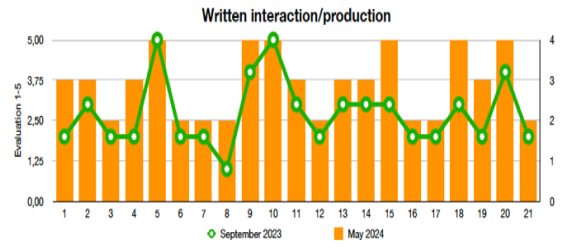

Figure 11. Overview of students' writing performance over the school year.

8. Discussion and Recommendations

The findings of this study show that technology-based intercultural projects can enhance respectful communication while also debunking stereotypes and prejudices [9]. Because of the geographical distance and formality of online communications, virtual intercultural exchanges fostered stronger mutual respect. Therefore, positive intercultural communication can be efficiently fostered in the digital context.

Technology-based intercultural projects were beneficial in widening students' knowledge and building both intercultural and language competences. Students demonstrated improvements of their speaking, listening, and reading skills, which were made possible by the use of multiple digital tools that promoted collaborative interactions. However, writing skills have declined significantly, which can be linked to an overreliance on generative AI for written assignments. This decrease emphasises the need for a balanced approach to technology use to ensure all students continue to develop the essential writing skills.

Furthermore, students' digital literacy improved significantly as they used numerous apps and platforms throughout the activities. This experience improved their overall proficiency in using digital technology. The teacher's role is crucial to design guided activities that foster active student involvement and critical thinking practice, ensuring that students gain comprehensive skills in the digital age. These findings pose certain concerns, particularly about the usage of technology and AI, yet we must remain optimistic:

Concerns about the lack of skills: *Will AI lead students into ignorance* [59]?

The overreliance on AI tools may lead students to passivity, lack of engagement and lack of critical thinking. Therefore, it is necessary teachers guide students to approach AI critically and use AI as a supportive tool for exploring new ideas rather than a replacement of their own critical thinking. Teachers and educational actors in general should constantly raise awareness of the potential dangers of AI overuse and promote the mindful use of AI tools to preserve and foster authenticity and integrity.

Concerns about plagiarism: *Are Originality and Creativity Doomed*?

Overuse of AI jeopardises originality and creativity as students may be tempted to use AI without making their own contributions. Therefore, teachers should encourage and reward originality while also emphasizing classroom activities targeted at participation, engagement and critical thinking.

Teaching to inform the wonders of originality and the doom of detecting plagiarism can solve part of the problem but devising ways to bypass plagiarism detection will perpetuate the problem. Thus, nurturing intrinsic motivation to develop creativity and establish an ethical culture in the classroom are paramount to ensure meaningful learning.

Concerns about being replaced: *Will Teachers Be Replaced by AI?*

Given AI's significance in education, teachers and instructors are understandably concerned about being replaced by it. However, AI can be increasingly helpful and simplify administrative work, but it can't replace teachers in what makes them unique: the affection, the empathy, the emotional support and the ability to become central in many students lives. So, instead of seeing AI as an enemy, educators must take advantage of what AI has to offer and facilitate educator's work, relieving them from activities that can be automated, allowing them to focus on what is necessary and distinguishes them in the teaching and learning process: their humanity.

9. Conclusion

This research demonstrated that technology-based intercultural projects can promote respectful communication, improve intercultural competence, and disprove stereotypes. Improvements in digital literacy and speaking, listening, and reading skills demonstrate the benefits of incorporating technology into education. However, the decline in writing skills caused by an overreliance on AI emphasises the importance of taking a balanced approach. Educators must actively lead students in the critical and ethical use of technology, focusing on qualities that AI can't replace, such as creativity, originality, and emotional engagement in the learning process.

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