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All together at recess: When technology builds human bridges of inclusion

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Abstract

This piece figures out how digital tech can be the key agents to change human inclusion in schools, specifically in areas that are socially informal and come from playgrounds. It states that if such devices were to be designed in a proper manner and then used within inclusive pedagogical frameworks which are based on socio-constructivist theory, Universal Design for Learning (UDL), collaborative digital pedagogies, as well as the new concept of digital empathy, technology would be far from a mere tool of accessibility, it would become a social-emotional development, peer collaboration, and belonging scaffold.

The paper, through a mixed-methods approach, carried out in three urban elementary schools for a semester, looks into how differently-abled children interact during technology-mediated recess sessions. The data suggest that digitally facilitated interaction serves as a cross-ability peer networks tool which is very effective in increasing perspective taking and empathy and elevating the teacher role as digital mediators. Simultaneously, systemic and ethical challenges such as device inequity, assistive technology compatibility, and data privacy concerns highlight that there is a need for structural supports and principled design if inclusion is to be achieved sustainably.

The article ends by stating that technology, if it is in line with inclusive pedagogy and ethically mediated, may serve as a bridge rather than a barrier-which connects learners across differences, shared play and understanding, as well as being a contribution to more inclusive school cultures.

Keywords: Inclusive Education; Information and Communication Technologies (ICT); Universal Design for Learning (UDL); Digital Empathy; Peer Collaboration; Assistive Technologies; Social-Emotional Inclusion; Mixed-Methods Research; Recess Pedagogy; Teacher Professional Development

1 Introduction

Inclusive education is a concept that has been increasingly acknowledged as a basic right as well as a pedagogical necessity in modern educational systems (Ainscow, 2020). Nonetheless, inclusion per se is not just the mere integration of students with disabilities in regular classes; it implies that students with disabilities have to be involved, be engaged and obtain the same results as their peers in the school community (Florian & Black-Hawkins, 2011). The 1994 Salamanca Statement defined inclusion as one of the main directions for worldwide education, and the Convention on the Rights of Persons with Disabilities (United Nations, 2006) is a further instrument that requires the elimination of barriers which are attitudinal, structural and psychological in nature. The social model of disability argues that the question of non-participation should not be considered as characteristics of individuals but rather environmental, organizational, and societal limitations that cause it (Oliver, 1996; Booth & Ainscow, 2016). Schools, therefore, need to be seen as places where differences among the students are considered as an advantage rather than a challenge (Florian & Black-Hawkins, 2011).

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An entire range of digital innovations characterises the Information and Communication Technologies (ICT) landscape of the present and future of pedagogy. In line with the UDL (Universal Design for Learning) framework, which promotes multiple means of representation, engagement and expression, digital tools have proved that they can provide learners with various profiles the opportunity for the active participation to the learning process and ultimately can lead to academic success (CAST, 2018; Villatoro Moral & Moreno-Tallón, 2025). In addition, the provision of mobile and developing technologies is the main factor in the creation of more inclusive and therefore sustainable learning environments, in particular, the situation of students with special educational needs (Karagianni &Drigas, 2023a, 2023b). In this way, besides accessibility, technology can be seen as an enabler of the emotional, social and collaborative aspects of inclusion.

However, the barriers to this are quite formidable. A common complaint made by teachers is that the content of their initial training and that of their professional development courses are insufficient to equip them with the knowledge and skills necessary for the management of the complex nature of tech-based inclusive classrooms (Avramidis & Norwich, 2002; Sharma & Loreman, 2014). The lack of resources—such as the provision of assistive technologies, differentiated materials and the availability of support staff—can also make the implementation of inclusive practices more difficult (Peters, 2007). Cultural and attitudinal factors are also important: negative stereotypes, low expectations, and the inflexibility of structures (e.g., large class size, rigid curricula) interact to decrease teachers' capacity to tailor instruction to various learner profiles (de Boer et al., 2011; Miles & Singal, 2010). Without systemic provisions such as infrastructure, professional development, and institutional culture, digital interventions with high potential are rarely able to provide sustainable inclusive advantages (Pagliara et al., 2024).

Inclusion remains a complicated issue despite the potentials of ICT. The school recess, which is an enjoyable time when students from different backgrounds mix casually, holds not only a strong metaphor but also a real chance. This research draws on the recess metaphor to understand how technology can be a bridge - physically as well as socially - that connects all learners and, at the same time, promotes belonging, cooperation and empathy. The name "All Together at Recess: When Technology Builds Human Bridges of Inclusion" is an indication of this.

1.1 Purpose of the Study

This paper aims to review the use of digital technologies in a way that they are not only well-designed but also integrated into the pedagogy so that they can have a positive effect on the inclusion of students, social interaction, emotional participation, and collaborative play among students of different abilities during break/recess times as well as in informal learning spaces. We are especially interested in the role of technology in facilitating communication among peers, creating empathy between learners, and lessening the social isolation of students with special educational needs.

1.2 Research Hypotheses

- The employment of digital tools in line with UDL principles will lead to the increased peer engagement, sense of belonging, and cooperative play among students from diverse ability groups.
- Teachers' readiness (digital literacy, inclusive pedagogical competence) is a key factor that determines the extent of technology-mediated interactions inclusively happening at the time of recess/ informal settings effectiveness.
- The incorporation of ethical and culturally responsive standards in the design of technology interventions fosters empathy, mutual understanding, and inclusive peer-relations among heterogeneous student groups.

This study accomplishes this by merging theory (socio-constructivism, inclusive pedagogy, digital empathy) with practice in the boundary recess space that is rarely researched. Besides that, it delves deeper into the relationship between technology, social-emotional skills, and peer-collaboration in the inclusion of students.

2 Methodology

Adopting a mixed-methods approach, this investigation explores how technology can be used to create inclusive peer interactions during recess and informal school settings. Quantitative and qualitative strategies were combined to capture not only the measurable outcomes but also the social-emotional processes that go beyond the measures and relate to inclusion.

2.1 Research Design

The study employs an explanatory sequential mixed-methods model (Creswell & Plano Clark, 2018) to integrate its research design. Mainly, quantitative data were obtained from structured observations, sociometric mapping, and digital engagement metrics, aiming at the measurement of participation, collaborative behavior, and social connectivity among students. After that, qualitative data were collected via teacher interviews, student focus groups, and social-emotional reflective journals. The design provides possibilities for the validity through triangulation of evidence and it also offers a comprehensive view of the role of technology in inclusive interactions.

2.2 Participants

The research took place in three city primary schools that had a mix of pupils, including those with a diagnosed special educational need (SEN). 215 students aged 7-12 years were involved in the study, and they constituted the general and the special education classes. Further 18 teachers and support staff such as classroom teachers, special educators, and ICT coordinators were part of the study. The schools were chosen based on their prior involvement in digital learning initiatives and their willingness to implement technology-enabled inclusive strategies during the break and informallearning time.

2.3 Instruments and Tools

Quantitative instruments were:

- **Observation Protocols**: Based on the Social Interaction Observation System (Gresham et al., 2001), measurements of cooperative behaviors, peer engagement, and inclusion indices were made.
- **Sociometric Measures**: Questionnaires aimed at friendship patterns, social networks, and perceived peer support (Cillessen & Rose, 2005).
- **Digital Engagement Logs**: The data from tablets and interactive playground technologies were used to track user behavior, collaborative interactions, and task completion rate. Qualitative instruments were:
- **Interview with Teachers (Semi-Structured)**: Looking at issues of technology use, student inclusion, and obstacles to the implementation of the new techniques.
- **Student Focus Groups**: Talking through involvement, peer interaction, and emotional engagement in the technological process of recess activities.
- **Reflective Journals**: Teachers noted down their daily observations, recording examples of collaboration, empathy, and inclusion, as well as the challenges of using digital tools.

2.4 Procedures

Ethical approval and parental consent were secured before data collection. The digital tools were rolled out in stages starting with the use of an engaging app designed for the playground, collaborative games made through augmented reality, and inclusive social platforms targeting joint problem-solving and cooperative play. Teachers underwent training through workshops emphasizing UDL-aligned teaching strategies, the right and ethical use of technology, and scaffolding of peer interactions. Data collection spanned an entire school semester (16 weeks). Observations were carried out twice a week during recess and selected informal learning sessions. Interviews and Focus groups were held during the middle of the semester and after the intervention period to reflect on the changes in experiences. Reflective journals were maintained daily and thus, they represent long term insights into emerging patterns of inclusion and social-emotional development.

2.5 Data Analysis

Descriptive statistics, social network analysis, and multivariate modeling were used for analyzing the quantitative data in order to study the relationships between the use of digital tools, levels of participation, and indices of inclusion (Borgatti et al., 2009). The changes in social engagement and cooperative behaviors over time were tested through repeated measures ANOVA. Qualitative data were subjected to thematic analysis (Braun & Clarke, 2006), with the themes identified in the data relating to the manifestations of empathy, peer collaboration, barriers to inclusion, and teacher facilitation strategies. Two independent researchers conducted the coding iteratively and the intercoder reliability calculated using Cohen's kappa was more than 0.85. The integration of quantitative and qualitative data through triangulation made it possible to unveil the comprehensive understanding of the ways in which technology can be used to support interactions that are inclusive of the time when the students are free from class.

2.6 Validity and Reliability

The study was of methodological rigor through various strategies. The observational instruments went through reliability pilot tests and were refined. The triangulation of data sources helped minimize bias, while qualitative interpretation accuracy was verified through member checking with teachers and students. The quantitative analyses were further strengthened by the effect size and confidence interval reporting, which made them open to and understandable by the readers.

3 Results / Findings

The outcomes of this mixed-methods research demonstrate the influence of digital technologies on social participation, empathy, and collaborative engagement of students with various ability profiles when these technologies are integrated in peer-interaction contexts (e.g., recess and informal play settings) that are inclusive. The results are presented under three main themes: (a) social participation and network connectivity, (b) empathy and peer collaboration, and (c) teacher facilitation and scaffolding of inclusive tech-mediated play.

3.1 Social Participation and Network Connectivity

Social network analysis based on quantitative data showed that students involved in technology-mediated recess activities had peer-interaction diversity significantly improved. To be more precise, the average number of cross-ability peer connections per student was 2.3 at baseline and it rose to 4.7 post-intervention ($p<0.01$). The results of repeated-measures ANOVA indicated a significant main effect of digital-tool engagement on the inclusion index ($F(1,214) = 15.62$, $p < 0.001$, $\eta^2 = 0.07$), thus, the effect size was moderate.

These results echo the findings of recent systematic reviews that stress the role of educational technologies in reshaping learning environments as inclusive and socially connected ones (Navas-Bonilla et al., 2025). The rise in the number of cross-ability connections can be interpreted as technology-mediated play being a means to support the bridging of social networks between mainstream and special-education students. Additionally, the observation data equally confirms this trend: during the use of augmented-reality (AR) collaborative games, students were engaged in 8.4 cooperative interactions on average per session, whereas, in the baseline unmediated recess sessions, the number was only 4.1.

The improvement in social participation that has been mentioned here is consistent with research on peer interaction for students with complex needs, which identifies structured supports as being essential for the enhancement of inclusion (McCarty et al., 2022). The digital tool infrastructure in our study can be considered as a scaffold, which helped students with less social initiation to interact with peers more often and almost take control of the situation themselves.

3.2 Empathy and Peer Collaboration

Through qualitative analyses, “empathy” and “perspective-taking” words were often mentioned in themes of discussions and journals. Students, as an example, explained a collaborative AR challenge like “I could see how my friend with a wheelchair thought the game space” and “we helped each other finish the mission because we noticed someone was struggling” The latter statements are indicative of the relational awareness and inclusive peer support that originates.

The reflective journals of teachers recorded the arrival of role-exchange behaviours: Students without identified support needs frequently took on the role of the mentor and helped the peers to use digital platforms by guiding them, thus, making peer assistance more mainstream and less of a remedial support. This behaviour is similar to the research on digital empathy interventions, which show that immersive technologies (e.g. virtual or augmented realities) can improve prosocial behaviour and the feeling of being part of a group (Mateus-Berr, 2021; Schutte &Stilinović, 2017).

Besides that, the AR game prototype “LINA” mentioned in Mittmann et al. (2022) found that it helped to create a sense of belonging and peer connectedness among early adolescents. Our results are in agreement: students who took part in our project observed that there were more frequent peer-initiated interactions, and they also reported higher scores of belonging (mean increase of 0.48 on a 5-point Likert scale, $p = 0.02$). Such information indicates that technology is capable of being a mediator in emotional inclusion, not just in cognitive access.

3.3 Teacher Facilitation and Scaffolding

The qualitative interviews strongly pointed out that teacher mediation was very important. Teachers talked about the importance of structured scaffolding—for example, the rotation of group-roles (facilitator, recorder, synthesiser), peer-feedback prompts, and the provision of help for digital literacy through the teacher—for the granting of fair participation. One of the teachers expressed it this way: “After the tools got familiar, we had to take a step back, but it was at the beginning when we had to guide the students to interact because they couldn’t watch”.

This facilitation is in line with the findings of other researchers who note that teacher confidence, training, and designs that are in line with inclusive pedagogy are mediators of digital inclusion (Ertmer & Ottenbreit-Leftwich, 2010; Starčič, 2010). Teachers in our research mentioned that by the end of the semester they were 35% less likely to have to make intervention decisions on the spot, thus, they were more autonomous and peer-mediated interactions were smoother.

Besides that, the data suggested that schools that invested more in teacher training (10 hours vs. 4 hours) showed larger gains in the inclusion index (mean $\Delta = 1.2$ vs 0.8, $p = 0.03$). This interaction effect supports the second hypothesis of the study that the teacher readiness level influences the effectiveness of ICT-mediated inclusion. These outcomes are in line with the Global Education Monitoring Report, which points out that the mere availability of devices does not lead to inclusion (UNESCO, 2023).

3.4 Cross-Analysis and Integration

The triangulation of the quantitative and qualitative data reveals that achieving inclusive outcomes is not only a matter of having tools available but it depends on the pedagogical design, teacher mediation, and social-emotional scaffoldingthat support the use of the technology. For instance, in the schools where the facilitators took the initiative to establish peer-mentoring roles and encouraged reflection on the topic of inclusion, students experienced a higher sense of peer-belonging and their peer networks became more diversified as compared to the schools where facilitation was at a minimum level.

In addition, the recess, as an informal setting, turned out to be a perfect place for inclusive play as well as for establishing social bonds. According to our findings, if technology is deliberately put to use in an informal context—not just in classrooms that are formally arranged—then there will be empathy-driven peer interactions, which can be counted, as well as spontaneous collaborations. This is an extension of the framework of inclusive pedagogy beyond academic tasks, thus, putting recess in the role of a pedagogical site where social-emotional inclusion is taking place, which is consistent with the early-childhood literature that emphasizes peer relationships and the feeling of belonging in inclusive settings (European Agency, 2014).

3.5 Summary of Key Findings

- **Improved Social Participation**: The cross-ability peer networks were able to expand substantially in the context of technology-mediated play.
- **Enhanced Empathy & Peer Collaboration**: The students expressed that they took the perspective of others more and provided more relational support during peer interactions.
- **Teacher Mediation Matters**: The preparation of teachers and their scaffolding activities had a strong moderating effect on the resulting inclusiveness.
- **Informal Learning Spaces as Inclusion Sites**: The recess and play settings, when facilitated by technology, can be regarded as social-learning venues with an inclusive nature.

These discoveries cooperatively confirm the hypotheses of the study that: (1) ICT that is in line with UDL and inclusively designed has a positive correlation with participation and a sense of belonging; (2) teacher preparedness impacts the effectiveness; (3) culturally and ethically designed digital interventions facilitate empathy and collaboration.

4 Practical Applications: Technology as a Bridge for Human Inclusion at Recess

Recess at school is a different world within formal education where informal learning, social interaction, and peer engagement happen naturally. Though largely overlooked in traditional inclusive education research, recess can become a vital place where students learn empathy, collaboration, and relational inclusion (Mamas, 2025). Introducing technology into the mix here offers plenteous fresh ways to bridge the social gaps, thus facilitating the interactions that would be difficult because of physical, cognitive, or social barriers. More and more studies reveal the fact that when done properly, technology can serve not only as a source of fun but also as a support system for inclusive social experiences that lead to peer engagement and collective problem-solving (Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

Creating technology-supported inclusive recess scenarios is deeply related to pedagogical intentions and accessibility. Access to devices is the basic thing because the difference between the availability of gadgets or the quality of connection can double the social division among the children (Bešić et al., 2024). Schools have to provide all necessary pieces of equipment, such as assistive technologies, network access, and adaptive devices, to every student, including those who have physical, sensory, or cognitive impairments. Digital interventions, besides technical access, need to comply with Universal Design for Learning (UDL) standards, thus they should offer more paths for engagement, representation, and expression. For example, the interactive game may give the player the option to listen to the game's story or read it, ask the role the player wants to take in the game or interaction method, and be aware of different motor or cognitive abilities (CAST, 2018; Woods, 2019). These designs ensure that every student gets to be a significant part of the community on the playground and, in turn, gain a sense of agency and belonging.

Moreover, teachers' involvement in making use of technology for inclusive recess cannot be underestimated. By organizing activities for students to cooperate, facilitating social interactions, and leading children towards empathetic engagement, teachers become the initiators (Ertmer & Ottenbreit-Leftwich, 2010). To teach more than just how to handle the devices, professional development should also cover areas like pedagogy for inclusion, strategies for collaboration among peers, and social interactions' facilitation ethics in online environments. Real-life examples depict that schools where teachers are skilled both in technology and inclusive pedagogical methods have higher outcomes in social inclusion and collaborative engagement during technology-supported play (Bešić et al., 2024). Besides, the position of the teacher in supervising, thinking, and changing activities is very important if they want to guarantee that all the students, whatever their abilities, will equally benefit from the digital opportunities (Urbani, 2024).

Peer collaboration and the cultivation of empathy are, in fact, the main intentions of technology-mediated inclusive recess. Collegial games, augmented reality simulations, and digital storytelling exercises can provide structured social interaction opportunities for students to practice empathy, collaborative problem-solving, and supportive behavior skills (Schutte &Stilinović, 2017; Lin et al., 2025). Studies show that groups of mixed abilities that work on scaffolded digital tasks demonstrate more cooperative behaviors and children with additional needs experience less social isolation (McCarty et al., 2022). Additionally, assigning meaningful roles to peers in such activities, e.g., as a facilitator, recorder, or navigator, helps to create fair participation, promotes the development of relational skills, and establishes mutual respect. These interactions not only improve immediate social experiences but can also become a source of lasting changes in school culture, thus contributing to creating an environment where differences are respected and inclusion is normalized (Mamas, 2025; Torres et al., 2021).

The implementation of such practices into sustainable frameworks at the school level demands thorough planning of policies and structural support. The international directives from UNESCO and the European Agency for Special Needs and Inclusive Education stress the significance of strategic planning, fair infrastructure, and unceasing monitoring as the main factors that help digital interventions succeed in achieving genuine social inclusion (European Agency, 2022; UNESCO IITE, 2025). Policies at the school level ought to be concerned not only with the technological infrastructure provision but also with ethical issues like data privacy, consent, and the responsible use of digital monitoring tools (Williamson &Piattoeva, 2022). Moreover, the involvement of a wide range of stakeholders such as students, teachers, parents, and ICT coordinators, in the co-design process is one of the ways to ensure that the interventions are relevant to the context, culturally appropriate, and responsive to the needs of the students (Urbani, 2024; Holmes et al., 2019).

Although technology has a great potential to support the inclusion process, there are still some practical obstacles. Restrictions in accessing gadgets, low level of teachers' training, and badly designed digital environments may lead to a situation where the problem of exclusion becomes even more severe instead of being solved (Bešić et al., 2024; Samaniego López et al., 2025). In addition, the continuation of technology-mediated recess projects is contingent upon well-thought-out plans for device servicing, budget maintaining, and the smooth incorporation of such initiatives into daily school routines (Holmes et al., 2019). At the same time, cultural and contextual factors should also be taken into consideration to ensure that interventions are in line with local traditions, language, and student practices (Duarte et al., 2023). To tackle these problems, schools have been increasingly using the models of phased implementation which include starting with pilot zones followed by organized scaling, continuous teacher support, and systematic evaluation. These models make sure that technology is a real helper in the inclusion process and not just a superficial or short-lived innovation.

To summarize, technology-mediated recess is a promising avenue to promote human inclusion, cultivate empathy, and bridge the social gaps that exist among students with different abilities. If digitally equipped devices, inclusive design principles, teacher facilitation, and school-wide policy frameworks are systematically combined, the use of digital tools can change the face of recess and make it a potent source for relational learning and social connectivity. The evidence suggests that when these measures are well thought out and carried out, they not only lead to the increase of individual participation but also become a driving force behind the cultural changes within schools, thus creating environments where diversity is embraced, collaboration is valued, and all students have equal access to shared social experiences.

Finally, it's critical to emphasize the beneficial and influential role that digital technologies play in the field of inclusive education. Mobile devices (49-50), a range of ICT apps (51-66), AI & STEM ROBOTICS and games (67-72) are examples of the technologies that facilitate and improve educational processes including evaluation, intervention, and learning. Additionally, the use of ICTs in combination with theories and models of metacognition, mindfulness, meditation, and the development of emotional intelligence [73-87], speeds up and improves educational practices and results, especially in inclusive education.

5 Discussion

The study delved into how technology helps to socialize in an inclusive manner in the school break time and mainly how digital gadgets could serve as a bridge between students of diverse abilities, backgrounds, and learning needs. The research, through socio-constructivist theory, Universal Design for Learning (UDL), collaborative digital pedagogies, and the nascent concept of digital empathy, has pointed out that technology can be the means of both cognitive and social-emotional growth in inclusive school environments (Vygotsky, 1978; CAST, 2018; Durlak et al., 2011). The analysis moves to show that tech is not only a tool to make content available but also an intervening factor in the formation of social bonds, empathy, and collective engagement.

The results of this research reveal a number of important points. Firstly, digital tools that facilitate collaborative involvement like interactive games, shared virtual spaces, and co-created multimedia projects can have a great positive impact on social cohesion during unstructured school periods such as recess (Johnson & Johnson, 2009; Dillenbourg, 1999). Such instruments open up numerous doors for students to take part in activities thus students with disabilities, social anxiety, or linguistic differences can be comfortable in peer interactions. By making use of multimodal communication features students may interact by text, audio, visual, or even an interactive way thus providing equal participation and mutual recognition (Rao et al., 2014; Edyburn, 2020).

Secondly, the use of UDL features to tech measures has turned out to be very important in achieving full inclusion and participant involvement. Educators through the help of adjusted platforms and user-friendly digital applications may personalize student's experiences according to their needs and at the same time they keep the whole group engaged thus, a student is not left apart or feels stigmatized (Meyer, Rose, & Gordon, 2014; Al-Azawei, Serenelli, & Lundqvist, 2016). Besides, the study points to the relational side of inclusion and shows that students who digitally collaborate in a structured way become empathic, take others' perspectives, and develop cooperative problem-solving skills, which, they apply to face-to-face interaction, too (Belman & Flanagan, 2010; Miller et al., 2020). As a result, technology becomes not only a physical facilitator but also a promoter of emotional intelligence and prosocial behavior.

Thirdly, the work points out the teachers' pivotal role as digital mediators and ethical designers. The educators' ability to provide scaffolding for social interaction, show by example the use of empathetic communication, and handle in an ethical way tech-mediated environments thus, inclusion quality and student engagement higher directly (Ertmer & Ottenbreit-Leftwich, 2010; Selwyn, 2016). Teacher training, reflective practice, and teacher professional learning networks are essential for the teacher to have proper skills to use tech in a way that is both educationally effective and socially responsible (Rao et al., 2014; Hargreaves & Fullan, 2020). Even the most sophisticated technological tools may promote inequities or marginalize the most vulnerable children if the necessary preparations are not in place.

The research uncovers that there are several ethical and structural issues that need to be taken care of in order for the progressive integration of technology into the inclusive school practices to be feasible. The issues of digital inequalities that cover the lack of devices, good internet connection, and assistive technologies are still the major obstacles that need to be overcome (Selwyn, 2016; Warschauer, 2011). Ethical concerns about data privacy, algorithmic bias, and online behavior require among other things, that there be rules for oversight, that these rules are clear and that digital citizenship is practiced by students (Holmes, Bialik, & Fadel, 2019; Ribble, 2021). According to which findings, dealing with these problems needs taking steps simultaneously at different levels such as coming up with the right kind of infrastructure, teacher training, ethical frameworks and inclusive school culture to bring about situations where technology aids rather than disables social integration.

Besides, the present research contributes to the ongoing discussion about the interrelation between technology, pedagogy, and social-emotional learning in an inclusive environment. Technology is a support for real engagement, empathy, and cooperation in the free time of the school day like recess, thus the study is in favor of a model whereby technology is not just a tool giving access to the curriculum but rather a means of developing relational and emotional competencies (Noddings, 2012; Zembylas, 2021). In addition to that, the proof is that carefully planned technological solutions may become the connecting bridges between students with different abilities not only facilitating academic participation but also social integration and well-being.

6 Conclusions

To sum up, the research confirms the statement that technology is a major agent of social change in schools when it is steered by inclusive pedagogy, UDL principles, and digital empathy emphasis. Digital platforms, adaptive systems, and collaborative applications can be the means that help people interact beyond their differences of ability, language, and background and thus create communities that practice inclusion, empathy, and cooperation. To keep the results going, there has to be an ongoing focus on teacher capacity, ethical design, and access equity so that technology works as a connecting link and not as a barrier. The use of technology to foster inclusive social interactions during the school break is, in short, a nice example of how digital innovation may contribute to the shared humanity, empathy, and mutual understanding of the next generation of learners.

Compliance with ethical standards

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Disclosure of conflict of interest

The Authors proclaim no conflict of interest.

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