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Storytelling robots: enhancing collaboration, language learning and fostering creativity

Storytelling robots: mejorando la colaboración, el aprendizaje de idiomas y fomentando la creatividad

Elena Vercher Ribis*
Universitat Rovira i Virgili, Tarragona, Spain
https://orcid.org/0009-0002-0502-248X | everche2@xtec.cat

Josep Holgado García
Universitat Rovira i Virgili, Tarragona, Spain
https://orcid.org/0000-0003-2636-0496 | josep.holgado@urv.cat

*Correcpondence author.

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Abstract
The "Storytelling Robots" project is a collaborative educational endeavour undertaken by Escola Sant Jordi, Institut Roquetes, and Universitat Rovira i Virgili, with the goal of enriching language learning and fostering creativity among primary and secondary school students. This initiative integrates the timeless art of storytelling with modern technology, harnessing techniques such as storytelling, programming, and robotics to cultivate an immersive and engaging learning environment. Through a crafted series of activities, students are not only encouraged to enhance their language proficiency, but also to explore the captivating realm of technology. The project's key objectives include improving language skills through storytelling, promoting creativity through the integration of technology, fostering collaboration among students, and facilitating the sharing of educational resources. By emphasising collaborative learning and leveraging cutting-edge techniques, the "Storytelling Robots" project seeks to equip students with indispensable language competencies and technological proficiency essential for navigating the complexities of the digital age. A dedicated website serves as a centralised hub for project resources, facilitating educators' access and adaptation of materials to suit their students' needs, thus ensuring broader dissemination and utilisation of project resources

throughout the educational community. Through these techniques, the project aims to equip students with essential language skills and technological competencies for success in today's digital world.

Keywords
Storytelling, robotics, language learning, collaboration.

Resumen
El proyecto "Storytelling Robots" es una iniciativa educativa colaborativa llevada a cabo por la Escuela Sant Jordi, el Instituto Roquetes y la Universidad Rovira i Virgili, con el objetivo de enriquecer el aprendizaje de los idiomas y fomentar la creatividad entre los estudiantes de primaria y secundaria. Esta iniciativa integra el arte de la narración con la tecnología, aprovechando metodologías como la narración de cuentos, la programación y la robótica para crear un entorno de aprendizaje inmersivo y atractivo. Los principales objetivos del proyecto incluyen mejorar las habilidades lingüísticas mediante la narración, promover la creatividad a través de la integración de la tecnología, fomentar la colaboración entre los estudiantes y facilitar el intercambio de recursos educativos. La web creada recopila los recursos del proyecto, facilitando el acceso de los docentes y la adaptación de los materiales según las necesidades de su alumnado, asegurando una amplia difusión en toda la comunidad educativa. Esta comunicación pondrá énfasis en el logro exitoso de los objetivos del proyecto, destacando la naturaleza colaborativa de la iniciativa, las metodologías innovadoras empleadas y los resultados tangibles observados en términos de mejora de la competencia lingüística y la literacia tecnológica entre los estudiantes. Mediante estas metodologías, el proyecto pretende dotar a los estudiantes con habilidades lingüísticas y competencias tecnológicas esenciales para el éxito en el mundo digital actual.

Palabras clave
Narración, robótica, aprendizaje de idiomas, colaboración.

1. Introduction

In an era where technology permeates every facet of daily life, the "Storytelling Robots" project stands at the forefront of innovative education, blending traditional storytelling with contemporary technology to inspire a new generation of learners. This collaborative endeavour, undertaken by Escola Sant Jordi, Institut Roquetes, and Universitat Rovira i Virgili, aims to revolutionise language learning and ignite creativity among primary and secondary school students. By merging storytelling, programming, and robotics, the project crafts a dynamic and immersive environment where students can explore and expand their linguistic and technological prowess Tengler et al. (2021).

Through a thoughtfully curated series of activities, participants are encouraged to refine their language proficiency while venturing into the enthralling world of technology. Key objectives include enhancing language skills via storytelling, fostering creativity through technological integration, promoting student collaboration, and sharing educational resources. A centralised website facilitates easy access for educators to adapt these materials, ensuring the project's broad reach throughout the educational community. The "Storytelling Robots" project is poised to shape the future of learning by equipping students with the linguistic fluency and tech-savviness required to thrive in the digital age.

The integration of technology into education has been a subject of significant research and discussion. Educational technology has evolved from a focus on specific tools to a more critical and theoretical understanding, emphasising the importance of training educators in the operation and use of new technologies. The utilisation of robots in storytelling and drama activities has been shown to provide students with engaging and remarkable learning experiences. Additionally, the potential of robotics in merging digital storytelling and gamification has been highlighted (Bravo et al., 2021).

Incorporating storytelling activities, especially digital storytelling, into education has been recognized as beneficial for literacy development and enhancing language skills. Storytelling plays a crucial role in preserving cultural values and heritage, especially in the digital age where technology can be leveraged to share these narratives. Furthermore, the use of robots in storytelling activities has been found to enhance students' multi-sensory experiences and engagement.

Overall, the "Storytelling Robots" project represents a cutting-edge approach to education that harnesses the power of storytelling, programming, and robotics to create an immersive learning environment that nurtures creativity, collaboration, and technological proficiency among students. By integrating traditional storytelling with modern technology, this project exemplifies the innovative potential of educational initiatives that bridge the gap between language learning and technological exploration.

2. Description of the context

The "Storytelling Robots" project, a collaborative effort between Escola Sant Jordi, Institut Roquetes, and Universitat Rovira i Virgili, aims to enhance language learning and foster creativity among primary and secondary school students (Chaidi et al., 2021). Applied over the course of the 2022-2023 school year, this project involves participants from various educational backgrounds, including pre-primary and primary students, high school students, and student teachers, providing a customised educational experience tailored to their learning needs (Lipsey et al., 2020). It emphasises linguistic and cultural diversity to encourage respect for different perspectives and experiences, creating an inclusive environment conducive to nurturing creativity and language development (Zhong et al., 2020).

The participants in the "Storytelling Robots" project represent a diverse mix of educational backgrounds and experiences. Kindergarten and primary students from Escola Sant Jordi have engaged actively, learning alongside high school students from Institut Roquetes who have designed activities and implemented the STEAMshibai project with their ESO 2 students and the Year 6 students from Escola Sant Jordi. In parallel, student teachers from the Education degree program at Universitat Rovira i Virgili have crafted activities linked to the books selected by the teachers at both Escola Sant Jordi and Institut Roquetes. This collaborative framework ensures that each participant benefits from a tailored educational experience that aligns with their learning needs, fosters creativity, and leverages the strengths of a supportive, inclusive environment.

The project focuses on integrating technology as a pedagogical tool within an inclusive educational environment (Kendrick et al., 2022). By adapting content

and methodologies to suit different student groups, it promotes personalised and meaningful learning experiences (LeTendre & Gray, 2023). Emphasising storytelling, programming, and robotics helps students explore new forms of expression and develop essential skills for success in a digital world (Bravo et al., 2021).

Educational robotics in the project provides hands-on experiences that enhance problem-solving skills, particularly suitable for primary schools (Jiang, 2023). The use of social robots in storytelling and drama activities creates unique learning opportunities beyond traditional digital tools (Hoa & Minh, 2023). Storytelling activities, including digital storytelling, are recognized for their benefits in literacy development and language skills enhancement.

This inclusive atmosphere, with its emphasis on linguistic and cultural diversity, promotes a shared respect for varied perspectives and experiences, offering the ideal foundation for nurturing creativity and language development. The project's emphasis on storytelling, programming, and robotics helps students embrace new forms of expression while acquiring essential skills for success in an increasingly digital world.

2.1. Theoretical Framework

The theoretical framework of the project integrates various elements to enhance students' language skills through stories, robotics, and digital tools. Linguistic competence plays a crucial role in learning foreign languages, and the project aims to enhance students' communicative competence in English through storytelling activities and robotics (Jung & Won, 2018). Storytelling technique is utilised to motivate students and facilitate English learning by connecting their experiences with the language and content (Belmonte et al., 2021). The integration of robotics and technology, such as Scratch JR, Scratch, Makey Makey, and micro:bit, enables students to create games and narratives based on stories, fostering active and meaningful learning experiences. Collaborative learning in digital environments is promoted to encourage interaction and collaboration among students, enhancing the sharing of feedback and experiences (Khadri, 2021). Evaluation and data collection methods, including interviews (before and after the project) (Figures 1, 2, 3 and 4) and rubrics (Table 1), are used to assess learning outcomes and improve activities (Niedlich et al., 2019).

Figure 1. Interview before and after the project about storytelling

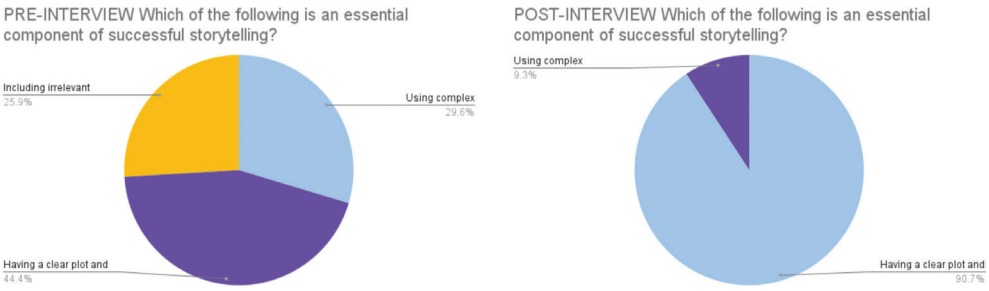


Figure 2. Interview before and after the project about Scratch JR, a digital tool used in the project

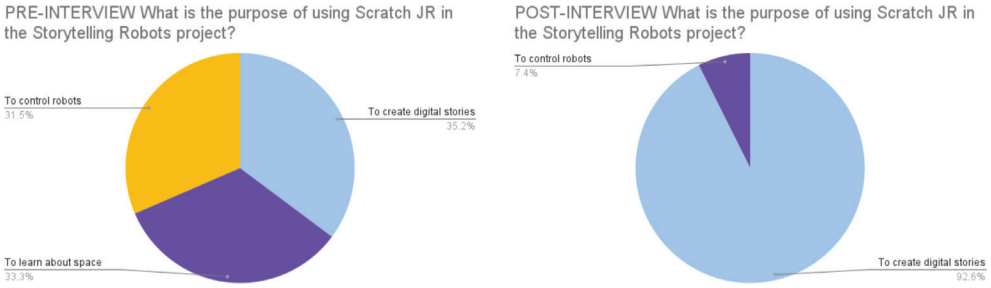


Figure 3. Interview before and after the project about Makey Makey, a digital tool used in the project

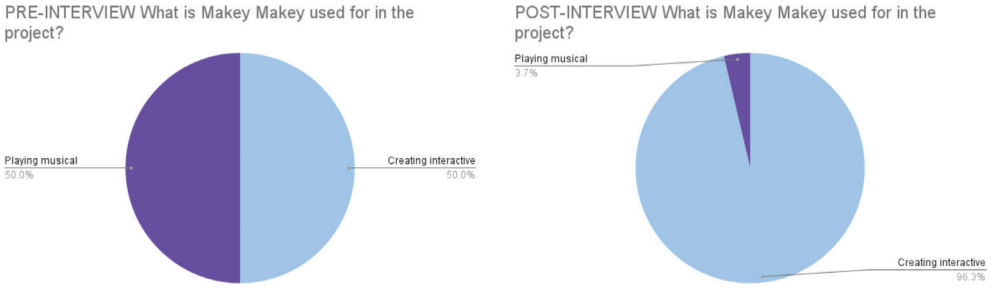
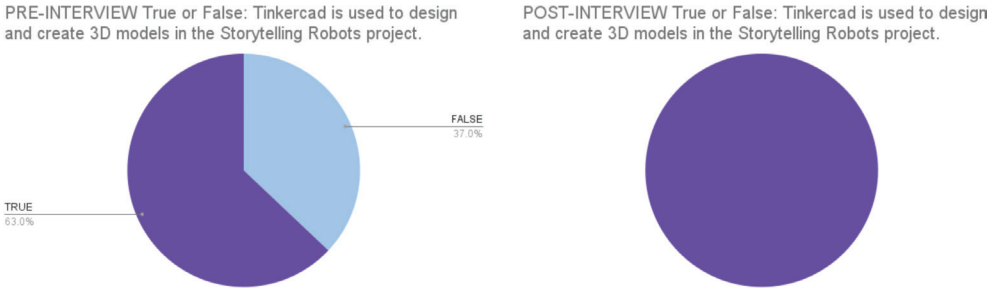


Figure 4. Interview before and after the project about Tinkercad, a digital tool used in the project



Linguistic competence is a key skill for learning foreign languages, and this project aims to improve students' communicative competence in English, both orally and in writing (Dujmović, 2006). By using stories, storytelling activities, and incorporating robotics, students can develop and enhance their linguistic skills (Bull & Kajder, 2004). Storytelling is a technique that has traditionally been used to teach and transmit knowledge and values. The power of stories is leveraged to motivate students and promote English learning as a foreign language (Bazalgette, 2009). Using stories as a basis for activities allows students to connect their knowledge and experiences with the language and content to be learned (Menezes, 2012).

Table 1. Rubric for assessing improvement in meaningful learning of the Storytelling Robots project

	EXPERT	ADVANCED	APPRENTICE	NOVEL	WEIGHT
	4	3	2	1	
Understanding of Technological Tools	Uses Scratch JR to create a story with multiple animated characters that move, interact, and perform actions. Designs a Makey Makey circuit to play sound effects and creates a 3D model of a character using Tinkercad.	Programs characters to move and interact in Scratch JR. Designs a simple Makey Makey circuit for basic sound effects.	Uses Scratch JR to make characters move but with limited interactions. Needs help designing a basic Makey Makey circuit or Tinkercad model.	Struggles to use Scratch JR beyond simple character movement. Has trouble understanding the purpose of Makey Makey or Tinkercad.	10%
Creative Expression through Technology	Writes and animates an original story in Scratch JR featuring multiple characters with distinct personalities. Integrates creative sound effects using Makey Makey and builds interactive elements like custom props.	Writes and animates a story with a clear plot and multiple characters. Uses sound effects and simple props with some creativity.	Creates a basic story with a limited plot or characters. Uses minimal sound effects or interactive elements.	Struggles to create a coherent story with characters or a plot. Relies heavily on assistance for sound or interactive elements.	25%
Collaboration and Teamwork	Contributes ideas and listens actively, providing helpful suggestions to teammates. Takes turns leading activities and celebrates team achievements.	Shares ideas and listens to teammates, contributing positively to group tasks while offering basic suggestions.	Participates in group tasks but needs reminders to listen or share. Offers ideas only occasionally.	Reluctant to share ideas or listen to teammates. Often disengaged from group tasks and needs frequent encouragement.	20%

(*continued*)

Table 1. Rubric for assessing improvement in meaningful learning of the Storytelling Robots project (*continued*)

	EXPERT	ADVANCED	APPRENTICE	NOVEL	WEIGHT
	4	3	2	1	
Critical Thinking and Problem Solving	Identifies a bug in Scratch JR animations and fixes it independently. Finds a creative way to use Tinkercad to enhance a character's design.	Recognizes a bug in animations and asks for guidance to fix it. Makes simple improvements to designs using Tinkercad.	Notices problems with animations or designs but requires significant help to address them.	Struggles to identify problems in animations or designs, requiring step-by-step assistance for solutions.	20%
Communication and Language Skills	Clearly explains their story's plot and character motivations. Uses creative vocabulary in writing and can discuss their project confidently.	Describes their story's plot and characters with some creativity. Uses basic vocabulary but may struggle with confidence.	Provides simple descriptions of the story but struggles to explain details. Relies on basic language.	Has difficulty describing the story or characters. Struggles to use complete sentences or cohesive language.	25%

Robotics and technological tools like Scratch JR, Scratch, Makey Makey, and micro:bit are introduced to promote active and meaningful learning, enabling students to use technology to create their own games, materials, and narratives based on the stories studied. Teamwork and collaborative online work environments, such as shared drives and virtual meetings, are encouraged to foster interaction and collaboration among students from schools and the Universitat Rovira i Virgili (URV). This allows them to share and provide feedback on their activities and experiences (Khadri, 2021).

Evaluation and data collection are crucial for assessing learning outcomes, determining the effectiveness of activities, and identifying areas for improvement. Instruments such as interviews before and after the project collect data on students' progress and their achievement of established objectives (Niedlich et al., 2019). The project aims to generate meaningful and enriching learning for participating students. Creating learning situations, using technology, exploring various topics, and connecting students' prior knowledge with the content make learning more relevant and directly applicable to the students (Auyelbek et al., 2022).

Incorporating elements of storytelling, technology, and collaborative learning aims to enhance students' language skills while promoting creativity and teamwork in the educational process. By utilising robotics and digital tools, students are encouraged to actively engage in creating their own materials and narratives, fostering autonomy and creativity (Taira & Maunakea, 2023). Emphasis on teamwork and collaborative online work environments enriches interaction and sociability among students, contributing to a more dynamic learning environment (Khadri, 2021).

3. Problems to be resolved

The problems to be resolved by the Storytelling Robots project include:

- Limited language proficiency: some students have limited proficiency in the English language, hindering their ability to participate in language learning activities.
- Lack of engagement: students presented lack engagement or interest in traditional language learning methods, resulting in reduced motivation and participation in educational activities.
- Technological barriers: students and educators were facing technological barriers or lack access to appropriate technology, impeding the integration of digital tools and resources into the learning process.
- Insufficient collaborative opportunities: limited opportunities for collaborative learning and interaction among students from different educational institutions would hinder the development of teamwork skills and cross-cultural understanding.
- Resource accessibility: educators may encounter challenges in accessing and having recourse to relevant educational resources and materials to support language learning and creative activities.

4. Objectives of the project

The objectives established for the Storytelling Robots project are:

- Enhance students' English language proficiency, encompassing both spoken and written communication skills.
- Integrate programming using Scratch JR, Scratch, and robotics to facilitate listening, storytelling, and interactive activities.
- Foster collaborative learning through group activities using collaborative tools and platforms.
- Develop a comprehensive curriculum that is adaptable and transferable to diverse educational settings.
- Build new personal knowledge through information processing strategies supported by digital applications.

These objectives have been successfully achieved, with positive results obtained in various areas:

Improvement of English language communicative competence: through the use of storytelling and robotics, the development of students' communicative skills in the English language has been facilitated, both orally and in writing. Tests conducted have demonstrated a significant improvement in this competence.

Introduction of programming and robotics as learning tools: teachers have designed projects and activities that have incorporated the use of Scratch JR, Cospaces, and other robotics resources. This integration has allowed students to listen to and tell stories, as well as engage in meaningful activities related to these technologies.

Group work and collaboration: the project has fostered collaborative learning through the organisation of group activities. Students have worked in heterogeneous teams of three, developing teamwork, communication, and joint problem-solving skills.

Creation of a shareable year planning: with the aim of sharing the results and materials developed, a website dedicated to the Storytelling Robots project has been created. This digital platform (https://sites.google.com/xtec.cat/storytellingrobotsurv/) gathers all the activities and resources created by the three participating centres: Escola Sant Jordi, Institut Roquetes, and Universitat Rovira i Virgili. This allows other educational centres to access this programming and implement it in other educational contexts.

Construction of new knowledge with technological support: both teachers and students have used various digital applications to explore information processing and the creation of new knowledge. These applications have been an effective tool for facilitating learning and have allowed participants to explore new resources and learning strategies that they had not previously used.

5. Tools and strategies

The development of the "Storytelling Robots" project involved the implementation of various tools, strategies, and instruments to create an engaging learning environment.

5.1. Storytelling techniques

Different storytelling practices were employed to enhance language learning and foster creativity among students. Through the use of narrative techniques, students were encouraged to express themselves creatively in both oral and written English:

- Crazy Professor Reading Game: in this game, the year 3 and 4 students adopt the persona of a "crazy professor" and read a story with exaggerated expressions and gestures, depending on the number they have, making the storytelling experience engaging and entertaining.
- Role-playing: year 5 primary students have acted out characters from a story, taking on different roles and practising dialogue in English. This practice encourages creativity and active participation while improving language fluency.

- Storytelling circles: ESO 1 and 2 students sit in a circle and take turns adding to a collaborative story. Each student contributes a sentence or paragraph to the story, building upon the ideas of their peers and practising storytelling skills in English.
- Picture prompt stories: year 3 and 4 primary students are given a picture or series of images (for example, the cards from the Dixit game) and asked to create a story based on what they see. This practice stimulates imagination and helps students develop descriptive language skills.
- Story starters: teachers provide kindergarten students with the beginning of a story, and students are tasked with completing the story or writing their own endings. This encourages independent thinking and creative expression.
- Digital storytelling: year 1 to 6 students use digital tools such as storytelling apps, multimedia software, or online platforms (Scratch, Storyboard That, Canva...) to create their own digital stories. This practice combines technology with storytelling to engage students and enhance language learning (Donaghy, 2015; Goodwyn, 2004).
- Story mapping: high school students create visual representations of story elements, such as characters, setting, plot, and theme, using graphic organisers or mind maps. This activity helps students analyse and understand story structure while practising language skills.
- Story retelling: kindergarten students retell a story they have read or heard in their own words, focusing on key plot points and events. This practice reinforces comprehension skills and improves oral communication in English.

5.2. Technological integration

The project integrated various technological tools to enhance the learning experience. These tools allowed students to engage with technology in meaningful ways, such as creating digital stories and programming robots.

- Scratch JR: year 1 and 2 primary students used Scratch JR to create animated stories or interactive games based on the narratives they developed. For example, they animated characters from a story they read in class or create a simple game that reinforces vocabulary or grammar concepts.
- Scratch: year 3 to 6 of primary and ESO 1-2 high school students use Scratch to design and program interactive stories or games related to the themes of their storytelling projects. For instance, they could create a digital choose-your-own-adventure story where users make decisions that affect the outcome of the narrative.
- Makey Makey: year 3 to 6 primary students used Makey Makey to create interactive elements for their storytelling projects. For instance, they created a physical "talking book" that plays recorded sound effects or dialogues when pressed, enhancing the storytelling experience.
- micro:bit: from year 6 primary students to ESO 2, they use micro:bit, with which students program interactive elements or sensors to enhance their storytelling

projects. For example, they could program a micro:bit to display animations or play sound effects triggered by certain actions in the story.

- Tinkercad: higher primary and lower high school students used Tinkercad to design and create 3D models of characters, props, or settings related to their storytelling projects. For instance, they might design and 3D print figurines of characters from the stories they created.
- Codey Rocky: kindergarten and year 1 and 2 students programmed Codey Rocky robots to act out scenes or interact with elements of their storytelling projects. For example, they programmed a Codey Rocky to move and respond to commands as if it were a character in their story.
- Laser Cutter: year 6 primary students and the high school students used a laser cutter to create physical props or decorations for their storytelling projects. For instance, they laser cut cardboard or acrylic pieces to create scenery or visual aids that complement their narratives.
- Cutting plotter: year 3 to 6 students at the school used a cutting plotter to create custom stickers, labels, or signage for their storytelling projects. For example, they could cut vinyl decals to label different elements of their storyboards or create promotional materials for their projects.
- 3D printer: year 3 to 6 primary students used a 3D printer to create custom props, characters, or objects for their storytelling projects. For instance, they could 3D print miniature models of key objects or scenes from their stories to enhance their presentations.
- Lego Spike: year 4 and 5 primary students used Lego Spike to build and program robots that interacted with elements of their storytelling projects. For example, they built robotic characters that move and speak lines of dialogue from their story, adding an interactive element to their presentation.

5.3. Collaborative learning

Collaborative learning strategies were implemented to promote teamwork and communication among students. Group activities and projects encouraged students to work together, share ideas, and solve problems collectively.

- Group activities: students were divided into small groups to work on various activities related to storytelling, programming, and robotics. These groups allowed students to collaborate closely, share responsibilities, and learn from one another's strengths.
- Project-Based Learning: students engaged in project-based learning activities where they worked together to plan, design, and implement storytelling projects using technology. This approach encouraged teamwork, creativity, and problem-solving skills as students collaborated to achieve common goals.
- Peer feedback sessions: regular peer feedback sessions were conducted where students provided constructive feedback to their peers on their storytelling projects. This process encouraged students to communicate effectively, give and receive feedback, and reflect on their work collaboratively.

- Online collaborative platforms: students use online collaborative platforms to communicate and collaborate with their peers outside of the classroom. Platforms like Google Classroom and Drive allowed students to work together on documents, share resources, and discuss ideas remotely.
- Collaborative problem-solving: Students were presented with challenges or problems related to their storytelling projects that required collaborative problem-solving. By working together, students brainstormed solutions, tested ideas, and iteratively improved their projects through collaboration.

5.4. Assessment instruments

Various assessment instruments such as interviews and rubrics were used to evaluate the effectiveness of the project and measure student progress. These instruments helped gather data on student learning outcomes and identify areas for improvement.

- One-on-one or group interviews (Figures 1, 2, 3 and 4) were conducted before and after the project with students to gather qualitative data about their experiences, perceptions, and learning outcomes related to the project. Interviews provided valuable insights into student engagement, understanding, meaningful learning and satisfaction with the activities.
- Rubrics (Table 1) were developed to assess student performance on specific tasks or projects within the Storytelling Robots curriculum. Rubrics provided clear criteria and benchmarks for evaluating student work, ensuring consistency and transparency in assessment.
- Observational checklists were used by teachers or project facilitators to systematically observe and document student behaviours, interactions, and participation during project activities. Observation checklists helped assess student engagement, collaboration, and adherence to project guidelines.

6. Evidence of impact

Within the local educational context, the "Storytelling Robots" project, conducted over the 2022-2023 school year on 740 students, demonstrated significant success in enhancing language learning, fostering creativity, and promoting technological literacy among students. By integrating storytelling techniques and digital tools, students improved their understanding of essential language skills while gaining technological proficiency. The pre- and post-interviews indicated a notable increase in comprehension of the project's main focus, as well as a clearer grasp of the essential components of storytelling. For instance, post-interview responses showed a higher consistency in recognizing the project's comprehensive focus on "Improving language skills," "Learning to code," and "Creating digital art."

The results across these charts indicate that the post-interview responses better reflect the intended goals of the Storytelling Robots project. Participants became

more aligned in their understanding of the project's tools and objectives after engaging in the activities, as evidenced by the consolidation of correct answers.

Teachers, educators and students reported positive feedback and observed improvements in engagement and motivation among students, as reflected in a significant shift in understanding the role of technology in the project's objectives. The project was presented at local workshops, such as the Jornada Programa in Barcelona, helping disseminate its impact and findings within the community.

Beyond the local level, the project's innovative approach to integrating digital technology in EFL education has garnered international attention. Leveraging online platforms and open-access resources like its dedicated website, the project has the potential to reach a global audience. The methodologies and strategies employed in the project serve as a model for other educational institutions seeking to enhance language learning and promote digital literacy. Its presentations at international conferences like the BETT Show (2023 and 2024) in London and ISTE Live 2023 in Philadelphia further amplify its global impact.

To ensure the project's sustainability and facilitate the transfer of results, several strategies have been employed. These include developing a comprehensive website to serve as an ongoing repository for project materials, creating collaborative platforms for sharing best practices, and establishing partnerships with other educational institutions. By documenting and disseminating outcomes, educators worldwide can continue benefiting from the "Storytelling Robots" project's insights and methodologies, ensuring its long-term relevance and impact in the field of education.

7. Conclusion

The comparative analysis of pre- and post-interview data provides valuable insights into how the Storytelling Robots project impacted participants' understanding of the tools and objectives. Initial responses exhibited varied perceptions of the project's tools, such as Scratch JR, Makey Makey, and Tinkercad, indicating diverse expectations and interpretations before the program began.

Following the program's completion, post-interview responses showed notable shifts toward a clearer, more unified understanding of the intended goals. For instance, most participants recognized Scratch JR as a tool for creating digital stories, while Makey Makey was widely understood to be used for creating interactive storytelling elements. Moreover, Tinkercad's role in designing 3D models was more accurately identified by the vast majority in the post-interview results.

Participants not only gained a clearer understanding of technological tools but also showed improvement in their language skills, collaboration, and meaningful learning. Engaging in storytelling through innovative technologies helped students develop communication abilities by expressing creative narratives and sharing ideas. Collaborative activities fostered teamwork and problem-solving skills as participants worked together to bring their stories to life. This combination of creativity and cooperation led to a deeper, more meaningful learning experience, enriching their technological and linguistic abilities.

These findings demonstrate the program's effectiveness in guiding participants toward a deeper and more accurate comprehension of the project's tools and purposes. The consolidation of knowledge among participants after engaging in hands-on activities reflects the project's success in aligning their understanding with its goals. By demystifying the technological tools and their applications, the project enhanced participants' confidence and proficiency in storytelling through innovative means.

Overall, the results highlight the importance of immersive educational programs in shaping and refining students' understanding of technological concepts. Future projects can build upon this model by incorporating a mix of theoretical and practical activities to foster clarity and alignment in learning objectives. Further research can explore specific pedagogical strategies that contribute to this alignment and how to best apply them in similar interdisciplinary educational settings.

The Storytelling Robots project proves that when creativity meets collaboration, remarkable things happen. By unlocking the boundless potential within each participant, the project not only inspired them to dream big but also empowered them to turn those dreams into reality. Let us continue to innovate, create, and build together—knowing that the stories we craft today will shape the future tomorrow.

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Biography

Elena Vercher: Elena Vercher is a teacher based in Tarragona, Spain, since 2009. She is currently teaching at a Primary School and as a teacher trainer at the STEAMcat program of the Department of Education. She has also been teaching in the English Minor of the Primary Education Degree at the "Rovira i Virgili" University for two years and has given teacher training talks and workshops in Philadelphia, Barcelona, and London. She is a Google Certified Trainer and Innovator and has been recently awarded with one of the "Teaching Professional Stays" from the Ministry of Education in a Primary School in England, the follow-up of the 2018 edition of the John McDowell APAC award, the mSchools Learning Awards in 2020, and the FIET and the DICOLED Awards, both in 2024. Elena is a professional pianist, and has a degree in Pre-primary, Primary, English and Music Education and a Masters' in Teaching English as a Foreign Language.

Josep Holgado: Primary, Secondary and University Teacher. Doctorate in Pedagogy, Faculty of Science Education and Psychology of Rovira i Virgili University. Master in Education Technology. He is currently the Education Responsible of Undergraduate Studies in Early Childhood and Primary Education in Campus Terres de l'Ebre of Rovira i Virgili University. He is a member of a research group ARGET (Applied Research Group in Education and Technology).