

MiRacconto App: Narrating the Self to Design the Future. A UDL-Based Approach to Early Orientation in Primary Education

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Abstract: This paper presents *MiRacconto*, an educational application designed for primary school with the aim of fostering early guidance through digital autobiographical narration. The app is grounded in the paradigm of Life Designing (Savickas, 2014) and in the principles of Universal Design for Learning (CAST, 2024), adopting narration as a formative and inclusive device (Bruner, 1990; Gaspari, 2024). Its structure is inspired by the metaphor of the “tree of competences”, which guides children through a reflective pathway articulated in four stages: roots (experiences and connections), trunk (values and personal traits), branches (skills and interests), and leaves (dreams and aspirations). The process does not require autonomous writing, but instead proposes guided choices supported by pictograms, speech synthesis and dyslexia-friendly fonts, thus ensuring accessibility also for pupils with linguistic or cognitive difficulties. Developed with MIT App Inventor 2, the app collects the selections made by pupils and generates a personalised final product: a PDF file visually representing the tree and documenting the autobiographical profile constructed. This artefact becomes both a tool for identity recognition and a support for self-designing. In this way, *MiRacconto* takes shape as an inclusive narrative environment, fostering agency, self-awareness, and projectual competence from the very beginning of primary education, while contributing to the reduction of marginalisation and the promotion of educational equity.

Keywords: Universal Design for Learning; Life Designing; Autobiographical narration; Digital storytelling; Primary education.

1. Pedagogical and Theoretical Frameworks

The proposal of *MiRacconto* is situated within a pedagogical tradition that recognises inclusive education not only as a fundamental right but also as an indicator of the democratic quality of a society. From this perspective, special pedagogy has played a crucial role in redefining the meaning of diversity, moving beyond assistentialist views to affirm the full dignity and citizenship of every individual. As D’Alonzo (2018) reminds us, the task of inclusive schooling is not merely to remove obstacles, but rather to create contexts in which each pupil can exercise agency, participate actively, and orient themselves towards a life project. In this direction, self-determination—understood as the capacity to make informed choices, set goals,



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and assume responsibility—emerges as a key competence for personal and social growth (Cottini, 2016; Canevaro et al., 2022).

This perspective intertwines with the evolution of guidance practices, which have progressively abandoned the linear model of vocational guidance, centred on the “matching” between individual characteristics and occupational positions (Parsons, 1909), to embrace a narrative and processual paradigm. In particular, Life Designing (Savickas, 2014; Guichard, 2005; Cunti & Priore, 2008) conceives guidance as a continuous construction of the self, characterised by a dialogical, holistic, and longitudinal dimension. Consequently, educational support is not limited to providing decision-making tools but takes the form of an identity recognition pathway, in which pupils are guided to imagine possible futures and to design life trajectories consistent with their resources and aspirations.

Within this framework, narration plays a decisive role. As Bruner (1990; 1993) demonstrated, narrative thought constitutes a privileged channel through which human beings attribute meaning to experience, connecting events, emotions, and values in a web of significance. Along these lines, Gaspari (2024) highlights how narration is not only a tool for autobiographical re-elaboration, but also a formative and transformative device capable of giving voice and agency to those at risk of exclusion. Literature on digital storytelling (De Rossi & Petrucco, 2013) further confirms that technological mediation broadens the expressive languages available, making self-narration a right accessible even to students with linguistic or cognitive difficulties. In this perspective, Digital Storytelling is configured not merely as a compensatory technique but as an authentic educational device, capable of enhancing narrative thought and fostering media literacy competences (De Rossi & Petrucco, 2013; Demetrio, 1996, 2003).

In parallel, Universal Design for Learning (CAST, 2018; 2024) today represents an essential methodological framework for the design of inclusive learning environments. Grounded in neuroscience and in the principle of variability in learning, UDL shifts attention from individual adaptation to a logic of universal design, capable of preventing exclusion. Its three core principles—providing multiple means of representation, of action and expression, and of engagement—make it possible to structure flexible and accessible educational contexts, where each pupil can experience meaningful forms of participation. The most recent empirical evidence (Sgambelluri & Placanica, 2025) confirms that teaching practices based on UDL foster autonomy, self-efficacy, and active participation, thereby contributing to the development of self-determination competences.

Finally, it is worth emphasising that technological innovation does not represent an end in itself, but a means that acquires significance only when integrated into robust pedagogical frameworks. It is within this intersection—between special pedagogy, Life Designing, Universal Design for Learning, and narration—that MiRacconto is situated: an educational application that translates these theoretical principles into a digital and narrative environment designed to accompany primary school children in constructing their sense of self and projecting themselves towards the future.

2. The *MiRacconto* Application: Pedagogical Structure and Reference Framework

The design of *MiRacconto* is situated within the perspective of guidance understood as an early, permanent and inclusive process, consistent both with developments in pedagogical research and with the most recent regulatory provisions. With Ministerial Decree No. 328 of 22 December 2022, the Italian Ministry of Education and Merit approved the national Guidelines for Guidance, establishing a structured and coordinated system that accompanies pupils from pre-primary education onwards. This reform, aligned with the objectives of the National Recovery and Resilience Plan (PNRR), emphasises the importance of supporting each learner's personal and educational growth through actions aimed at preventing school drop-out, enhancing competences, and promoting personalised pathways of learning and life.

Within this scenario, *MiRacconto* emerges as an educational tool specifically designed for primary school, capable of translating the principles of early guidance into a digital narrative environment. The application proposes guided reflection activities enabling pupils to explore their own experiences, to recognise resources and interests, and to imagine possible future scenarios without being hindered by linguistic or cognitive barriers.

The structure of *MiRacconto* is organised around the metaphor of the “tree of competences”, a pedagogical and symbolic device that leads children through a progressive reflective pathway. The image of the tree, both familiar and culturally embedded, makes it possible to anchor autobiographical reflection to an immediate visual representation, reducing the required level of abstraction and ensuring accessibility also for those with cognitive or linguistic difficulties.

The pathway unfolds in four stages: the roots, representing affective ties and meaningful experiences; the trunk, associated with values and personal traits; the branches, symbolising skills, interests and perceived competences; and finally the leaves, opening up to aspirations and future dreams. This progression supports a reflection consistent with children's cognitive and emotional development, allowing them to move from the recognition of the past to the projection of the future.

The metaphor of the tree, beyond simplifying representation, functions as a narrative scaffolding: a symbolic device that helps children to organise and give coherence to their experience, fostering processes of identification and agency (Smorti, 1997).

In addition to the symbolic structure of the tree, *MiRacconto* introduces a personalisable avatar that accompanies pupils throughout the narrative journey. The avatar serves as a narrative guide, providing contextualised examples and prompts at each stage of the process—roots, trunk, branches and leaves—thus supporting comprehension and reducing cognitive load. This feature not only increases motivation and engagement through light gamification, but also fosters identification and continuity, as pupils perceive the avatar as a companion in their exploration of self. By combining visual personalisation with pedagogical intentionality, the avatar reinforces the coherence of the narrative pathway and contributes to sustaining pupils' agency and reflective participation.

Figure 1. The four stages of the MiRacconto narrative pathway – Roots (experiences and ties), Trunk (values and traits), Branches (skills and interests), and Leaves (dreams and aspirations) – structured through the metaphor of the ‘tree of competences’.



Another qualifying feature of MiRacconto is its attention to accessibility. Auto-biographical narration does not require autonomous writing, which might constitute an obstacle for pupils with linguistic difficulties or specific learning disorders. On the contrary, the pathway is based on guided choices, made possible through carefully selected age-appropriate options, accompanied by pictograms, AAC icons, speech synthesis, and dyslexia-friendly fonts. This multimodal approach ensures the participation of all learners, transforming narration into a truly inclusive experience.

Moreover, the interaction mode does not merely consist in the mechanical selection of elements, but stimulates reflection on the meaning of the choices made. In this way, the app encourages the development of metacognitive processes and meaning attribution, fostering a path of personal awareness that translates into self-representation and future projection.

The rationale underpinning MiRacconto closely reflects the aims outlined in the ministerial Guidelines for Guidance. Just as the decree provides for key roles such as the tutor teacher and the guidance teacher, with functions of support and personalisation of learning pathways, the application intends to offer digital support that facilitates pupils, teachers and families in activating processes of self-assessment and exploration of personal resources. Similarly, the personal E-Portfolio tool, introduced at ministerial level to document competences and developmental stages, finds a correspondence in MiRacconto, which generates a personalised digital artefact (a PDF representing the symbolic tree) collecting the autobiographical contents selected by the child.

In short, MiRacconto positions itself as a digital narrative environment that operationalises the pedagogical principles of UDL and Life Designing, while integrating them with recent educational policy on guidance. Through the metaphor of the tree of competences, the app enables primary school pupils to narrate themselves, to recognise their strengths, and to imagine possible developmental trajectories, without being constrained by linguistic or cognitive barriers. Conceived in this way, the application serves as a tool to strengthen narrative identity, promote self-determination, and make effective each child's right to be the protagonist of their own life project.

3. Technical Design and Inclusive Dimension

The technical design of *MiRacconto* was carried out in close coherence with the pedagogical principles that inspired its structure. The application was developed using the MIT App Inventor 2 environment, an open-source platform that enables the creation of mobile applications through a block-based programming language. The choice of this environment responds to two main needs: on the one hand, the possibility of rapidly prototyping inclusive educational tools without requiring advanced programming skills; on the other, the visual and modular nature of the language, which facilitates potential future adaptations and ensures a high degree of design flexibility.

From an architectural point of view, the application is organised to trace and store the choices made by pupils during the narrative process. Every decision taken within the sections of the tree of competences—roots, trunk, branches, and leaves—is recorded in real time. At the end of the process, a dynamic generation engine produces a personalised output in the form of a PDF file. This artefact depicts the symbolic tree enriched with the pupil's selections and includes a synthetic autobiographical profile documenting the dimensions explored (experiences, values, skills, aspirations). The file can be saved, shared, or printed, thus serving as a narrative e-portfolio, useful both for pupils and for teachers and families as a tool for support and reflection.

Special attention was given to accessibility. Technical solutions reflecting the three principles of Universal Design for Learning (CAST, 2024) were integrated:

- Multiple means of representation: use of the OpenDyslexic font to improve readability, simplified visual layouts, and the inclusion of pictograms inspired by Augmentative and Alternative Communication (AAC).
- Multiple means of action and expression: guided selections instead of autonomous writing, simplified tactile inputs, options to activate or deactivate supports.
- Multiple means of engagement: graphic personalisation (colours, icons), audio support through speech synthesis, and the possibility of modulating the level of scaffolding.

Figure 2. Accessibility options in the *MiRacconto* app: activation of speech synthesis, transformation of text into pictograms, and enlargement of font size.



Figure 3. The avatar accompanying pupils throughout the narrative pathway, here shown with a prompt also available in Augmentative and Alternative Communication (AAC) format



These choices do not represent compensatory additions but were conceived as structural components of the design. In this sense, *MiRacconto* does not propose a “standard” model from which adaptations may be derived, but an originally flexible framework that recognises variability in learning as a starting point.

A particularly significant aspect concerns the personalisation of accessibility supports: pupils, together with their teachers, can decide whether to activate speech synthesis, enlarge fonts, or further simplify the interface. This choice has not only an operational function but also an educational value, as it teaches children to develop

awareness of their own learning modalities and to autonomously manage the tools at their disposal.

The application's narrative pathway unfolds through four main views, each corresponding to one section of the "tree of competences". In each phase, pupils are guided to make selections among predefined options presented in multimodal form (simplified text, pictograms, audio support), thus ensuring comprehension and accessibility.

- **Roots** – Pupils select people, places, and meaningful experiences they perceive as fundamental for their growth. The activity supports the recognition of affective ties and formative memories.
- **Trunk** – Children are presented with values, emotions, and personal traits to associate with themselves. This stage encourages reflection on identity and inner stability.
- **Branches** – Pupils identify perceived skills, interests, and competences, with the aim of recognising their own resources and enhancing them in a project-oriented perspective.
- **Leaves** – Students select aspirations and dreams, expressing desires and future perspectives. This final stage stimulates self-projection towards still-open possibilities.

The progression of these views supports a gradual reflective pathway consistent with the cognitive development of primary school pupils: from the recognition of one's roots to the definition of a self-oriented towards the future. In this way, the app operationalises the pedagogical principle that guidance is progressively constructed through meaningful and accessible experiences.

In summary, the technological choices adopted do not merely guarantee the technical functioning of the application, but are conceived as intentional educational mediations. The technical and the pedagogical dimensions are thus closely intertwined: the former is functional to the latter, based on the conviction that technology, in order to be genuinely inclusive, must stem from an educational design that directs its development and use.

A forthcoming pilot study is planned to evaluate the pedagogical and inclusive potential of *MiRacconto*. The study will be implemented in Italian mainstream primary schools during the 2025–2026 academic year and will adopt a mixed-methods design. Quantitative measures will include validated scales of perceived self-determination and school engagement, administered at the beginning and end of the intervention. Qualitative data will be collected through structured classroom observations, focus groups with teachers, and thematic analysis of the personalised PDF outputs generated by the app, using software such as MAXQDA. Particular attention will be devoted to pupils with special educational needs, who will be supported by their dedicated educators to ensure accessibility and consistency with inclusive practice. Triangulating these data sources will allow for a comprehensive understanding of how the app influences pupils' narrative competence, self-awareness and capacity for future-oriented reflection, thus providing an empirical basis for its further development and refinement.

4. Conclusion

The overall analysis of the characteristics of *MiRacconto* highlights a number of strengths, along with possible directions for future development. From a pedagogical perspective, the app emerges as a tool capable of translating into practice the principles of Life Designing and Universal Design for Learning, making a future-oriented autobiographical narrative pathway accessible to all primary school pupils. The use of the “tree of competences” metaphor enables complex concepts to be mediated through a symbolic, familiar and motivating language, which supports reflection without generating excessive levels of abstraction.

From an inclusive perspective, the integration—embedded from the very design stage—of assistive technologies such as dyslexia-friendly fonts, speech synthesis and pictograms avoids ex-post compensatory logics, instead promoting a model of universal accessibility. In this way, *MiRacconto* gives concrete expression to the UDL principle that variability in learning is not an exception to be managed, but an ordinary condition to be addressed from the outset.

Equally relevant is the app’s alignment with national educational policies. Indeed, it fits within the framework set out by Ministerial Decree 328/2022, which introduced a permanent and structured guidance system starting from early childhood education. The generation of a personalised digital artefact (the PDF with the symbolic tree and the autobiographical profile) can be regarded as an operational counterpart to the personal E-Portfolio envisaged by the ministerial Guidelines, and represents a concrete basis for accompanying pupils in the progressive construction of their life projects.

Looking ahead, the use of *MiRacconto* opens several avenues for reflection: on the one hand, it will be necessary to evaluate its effectiveness through trials in diverse school contexts; on the other, the possibility of integrating new functionalities—such as feedback modules for teachers and guidance tutors—constitutes a potential development likely to further strengthen its educational value.

In light of the literature on storytelling and digital storytelling (Bruner, 1993; Petrucco & De Rossi, 2009; Demetrio, 1996), *MiRacconto* can also be interpreted as a narrative environment in which technology becomes an instrument for self-narration. Each choice made by the child is not merely a piece of collected data, but a fragment of personal history which, once recomposed within the digital tree, restores meaning to lived experience and opens the way to future planning. Storytelling, thus understood, performs a dual function: reflective, as it activates processes of awareness and self-representation; and communicative, as it enables these narratives to be shared with peers, teachers and families.

It will also be important to explore how the methodology of digital storytelling, applied in multicultural environments or in contexts characterised by strong linguistic heterogeneity, may further reinforce pupils’ self-determination and projectual capacity. Such trials, in continuity with recent pedagogical reflections, may contribute to consolidating the formative value of *MiRacconto* as a digital narrative environment.

In conclusion, *MiRacconto* demonstrates how pedagogical intentionality and technological innovation can be combined in an inclusive device that makes narration—oral, written, visual and digital—not merely an expressive medium, but a genuine instrument of empowerment. The application shows that early guidance can be implemented consistently with the principles of UDL and with national educational policies, offering all children the opportunity to live the experience of self-narration as

a right and not as a privilege, within an authentically inclusive and transformative perspective.

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