FROM REFLECTIVE JOURNAL TO AI-MEDIATED DIGITAL STORYTELLING: FOSTERING PROFESSIONAL REFLECTION IN SPECIAL EDUCATION TEACHER TRAINING

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ABSTRACT
This study reconceptualizes the reflective journal as a self-narrative pedagogical device for special education teacher training through AI-mediated digital storytelling. Situated within the framework of experimental pedagogy, it adopts an exploratory mixed-methods design with a qualitative emphasis to investigate the use of generative AI tools, including Gemini Storybook and conversational chatbots, to support the creation of digital narratives based on significant episodes of educational practice. The training programme, delivered primarily online, comprised guided activities centred on self-narration, emotional exploration, reinterpretation of teaching episodes, and reflection on professional practice. Qualitative data from the reflective journals and open-ended questionnaire responses were analysed through reflexive thematic analysis, whereas quantitative questionnaire data were analysed descriptively. The analysis identified four overarching themes related to looking beyond behaviour, recognising emotions, designing inclusive responses, and rethinking the professional role, showing that AI-supported digital storytelling extended reflective processes without replacing participants' pedagogical agency.

KEYWORDS
Reflective journal; digital storytelling; generative artificial intelligence; teacher education; inclusion.

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1. Introduction

In increasingly complex and technology-rich educational environments, teacher education requires the development of professional competence enabling teachers to critically interpret educational situations and design inclusive interventions responsive to learners' diverse needs. Such competence emerges through the interaction between theoretical knowledge, educational practice, and reflection on action (Baldacci et al., 2020). Within this perspective, reflective writing supports professional development (Striano, 2006; Rivoltella & Rossi, 2022) and the construction of professional identity (Moon, 2006; Lavín & Goodman, 2023).

This study conceptualises reflection as a process through which teachers reinterpret experience, inform educational decision-making, and develop a deeper understanding of the emotional and relational dynamics underpinning classroom events (Richert, 1992). Within this perspective, the reflective journal functions as a self-narrative pedagogical device enabling teachers to document, analyse, and reinterpret classroom experiences while fostering connections among observation, interpretation, and educational planning (Dewey, 1961; Schön, 1983; Larrivee, 2008). Through reflective writing, implicit assumptions, beliefs, and decision-making processes become available for critical examination, allowing teachers to progressively reconstruct their professional understanding of practice. As Mortari (2003, p. 106) observes, reflection makes visible what «remains unnoticed because it is too close and immediate, too embedded in everyday experience».

Alongside reflective writing, digital storytelling has emerged as an educational methodology for transforming educational experiences into structured

narratives through which classroom episodes can be critically reinterpreted from a professional perspective (Banzato, 2014; De Marco & Colazzo, 2021). Developing a digital story requires participants to identify the most significant elements of an experience, organise them into a coherent narrative, and translate them into a multimodal representation, thereby expanding the interpretive potential of reflective writing (Robin, 2008; De Marco, 2024). By integrating narrative, visual, and emotional dimensions, digital storytelling enriches reflective inquiry.

More recently, generative artificial intelligence (AI) has begun to reshape teaching and learning by supporting reflective, creative, and inclusive educational practices. While early studies focused primarily on instructional design, personalised learning, and educational resource development (Holmes et al., 2019), more recent research has extended this perspective to teacher education and professional development (Tan et al., 2025). Within this context, generative AI can extend opportunities for representing educational experiences through multimodal narratives, while its pedagogical use requires maintaining teachers' interpretative control (Miao & Holmes, 2023; Wei et al., 2025).

Although previous research has examined reflective writing, digital storytelling, and AI as separate pedagogical approaches, limited attention has been devoted to understanding how these resources can be intentionally integrated into a coherent teacher education pathway. In particular, little is known about how their combined use can foster professional reflection and support the design of inclusive educational practices in special education teacher education.

Against this background, the present study addresses the following research question: How does a training programme integrating the reflective journal,

digital storytelling, and generative AI support professional reflection among special education teachers?

To address this question, a training programme was designed to guide participants through a sequence of interconnected learning activities progressing from reflective writing to AI-mediated digital storytelling. In doing so, the study contributes to research on reflective teacher education while advancing current debates on the pedagogically meaningful integration of generative AI into teacher professional learning.

2. Research context and methodology

2.1 Design of the training programme

Building on this theoretical framework, a training programme entitled *From the reflective journal to stories in the classroom* integrated reflective writing, digital storytelling, and Gemini Storybook through a scaffolded learning pathway in which each activity progressively extended the previous one, while pedagogical interpretation and educational decision-making remained with the participants.

The study was conducted within the Special Education Teacher Training Programme at Pegaso Telematic University and involved 130 teachers enrolled in the primary school specialisation track. Participants had a mean age of 50.2 years (SD = 8.8; range = 26–63 years). The sample was predominantly female (95.4%, ***n*** = 124), with male participants accounting for 4.6% (***n*** = 6). The activities formed part of the regular training programme. This context provided an appropriate setting for investigating professional reflection because participants were required to design educational interventions aligned with the principles of inclusive education (Canevaro, 2013; Cottini, 2017).

The training programme was delivered entirely online over six hours through a sequence of interconnected learning activities guiding participants from the interpretation of complex educational situations to their reflective and narrative re-elaboration. Padlet served as the shared digital learning environment for distributing instructional materials, collecting participants' submissions, and sharing the artefacts produced throughout the activities while supporting interaction and collaborative reflection. Participants also received an operational guide containing methodological guidance, task instructions, activity requirements, and directions for using the digital tools. This instructional design reflects contemporary approaches to teachers' professional learning that emphasise professional reflection, multimodal learning, and the pedagogically meaningful integration of digital learning environments (Mazzini et al., 2025).

Table 1. Overview of the training process

Phase	Activity	Expected outcome
1	Exploration of educational scenarios based on critical episodes.	Observation and reflective interpretation.
2	Completion of the reflective journal using a guided template.	Professional reflection.
3	Narrative transformation using Gemini Storybook.	Illustrated storyboard.
4	Digital storytelling production using Canva.	Multimodal digital story.
5	Sharing and discussion of participants' artefacts through Padlet.	Dialogic reflection and collaborative learning.
6	Programme evaluation using Google Forms.	Metareflection on the learning experience.

To ensure comparability while allowing individual differences in interpretation and pedagogical reasoning to emerge, the training programme was structured around five purposefully developed critical episodes based on shared educational scenarios. The scenarios were designed by iteratively prompting

ChatGPT to generate realistic classroom situations. ChatGPT was employed exclusively to support content generation during the design phase, whereas pedagogical validation, revision, and final approval were undertaken by the research team. Prompts were progressively refined until the scenarios reflected diverse educational needs, complex relational dynamics, and professional dilemmas commonly encountered in inclusive educational practice. Each episode was subsequently reviewed to ensure pedagogical coherence, narrative plausibility, and alignment with the ICF biopsychosocial model.

The five critical episodes represented recurrent classroom situations: (1) Marco refuses to read; (2) Giulia bursts into tears during the maths lesson; (3) Adam remains silent; (4) Federico provokes his classmates; and (5) Chiara is afraid of making mistakes. Rather than eliciting a single correct response, the episodes encouraged observation, interpretation, and the design of inclusive interventions. Each participant selected one episode, which served as the basis for all subsequent activities.

For publication purposes, all materials originally produced in Italian were translated into English by the authors. The following example illustrates one of the scenarios used during the programme.

Critical episode: "Chiara is afraid of making mistakes"

During a writing activity, Chiara, a six-year-old pupil, repeatedly asked for reassurance, erased correct letters, compared her work with that of her classmates, and eventually stopped writing, saying that she was afraid of making mistakes. The special education teacher noticed that she appeared anxious and physically tense.

Based on the selected critical episode, participants completed a reflective journal structured around five sections: observation of the situation, emotional dimension, educational reflection, metacognition, and reflective transformation. Each section included open-ended guiding questions encouraging participants to progress from observation to interpretative hypotheses and inclusive educational strategies through a structured reflective pathway. The reflective journal functioned as the pedagogical core of the training programme, providing the foundation for all subsequent narrative and multimodal activities.

Table 2. Excerpt from a completed reflective journal based on the critical episode "Chiara is afraid of making mistakes"

Area of reflection	Guiding questions	Participant's reflection
Observation of the situation	What is happening? What behaviours do you observe? Which detail stands out most?	Chiara repeatedly asks for reassurance, erases correct letters, compares herself with classmates, and eventually stops working because she is afraid of making mistakes.
Emotional dimension	What emotions emerge? What might the child be feeling? How would you feel in this situation?	Chiara appears anxious and emotionally overwhelmed. The teacher realises that reassurance alone is insufficient.
Educational reflection	What needs may underlie the child's behaviour? Why is this situation challenging? What difficulties might you encounter as a teacher?	The child needs a psychologically safe environment where mistakes are accepted as part of learning. The teacher must provide support without fostering dependence.
Metacognition	What thoughts guide your intervention? How do you interpret the child's behaviour? What would you do after critically reflecting on the episode?	The behaviour is interpreted as anxiety rather than a lack of ability. The activity would be redesigned to reduce performance pressure and normalise mistakes.
Reflective transformation	Has your perspective changed? Which inclusive strategies could be implemented? What have you learned as a teacher?	Reflection leads to greater awareness that emotional safety should precede task completion. Inclusive strategies promote confidence, autonomy, and participation.

Participants then transformed their reflections into an illustrated storyboard using Gemini Storybook. Generative AI was introduced only at this stage to preserve the reflective journal as an individual product, with participants

selecting, revising, and validating the generated narratives to ensure that AI supported rather than replaced professional judgement.

The storyboard was subsequently developed into a digital story using Canva by integrating images, written text, and voice-over narration, encouraging participants to reinterpret their educational experiences through multimodal representation.

The programme then included a voluntary online sharing session during which participants presented their artefacts, compared narrative interpretations, and reflected on the pedagogical potential of generative AI, fostering dialogic reflection and peer learning.

An example of a prompt developed by one participant for Gemini Storybook, based on the critical episode "Chiara is afraid of making mistakes", is presented below.

Prompt:

Create an illustrated story for primary school children. The main character is Chiara, a six-year-old girl who is afraid of making mistakes during a writing activity. Describe her thoughts and emotions as her teacher helps her understand that making mistakes is a natural part of learning and that she can grow from her errors. Set the story in a classroom and include illustrations that clearly convey Chiara's emotional experience. End the story with a positive conclusion in which she gradually regains confidence in herself.



Figure 1. Illustrative synthesis of the original storyboard produced by a participant using Gemini Storybook, graphically reorganised for publication with the support of ChatGPT to improve readability while preserving the original narrative sequence and educational content.

Following the sharing session, participants completed the final evaluation questionnaire, marking the conclusion of the training programme.

2.2 Data collection

The study drew on three complementary qualitative and quantitative data sources. The first consisted of reflective journals completed individually in response to the critical episodes, representing the primary data source because they documented participants' reflective reasoning before interaction with generative AI.

The second comprised the storyboards created with Gemini Storybook and the digital stories developed with Canva and shared through Padlet, providing evidence of how written reflections were transformed into multimodal narratives.

The third consisted of an anonymous Google Forms questionnaire, developed ad hoc by the authors, comprising 23 items: three demographic/professional questions, three on prior experience and familiarity with reflective journals and AI, fifteen five-point Likert-scale items, and two open-ended questions on perceived AI-related risks and possible classroom applications of Gemini Storybook.

The Likert-scale items addressed, among other aspects, the perceived usefulness of the reflective journal and the extent to which the programme supported the integration of theoretical knowledge and educational practice.

2.3 Data analysis

This study adopted an exploratory mixed-methods design with a qualitative emphasis to investigate how the integration of the reflective journal, digital storytelling, and AI supported professional reflection within the Special Education Teacher Training Programme. The qualitative component was central to exploring how participants articulated professional reflection across the different learning activities, while the quantitative questionnaire data provided a descriptive account of participants' perceptions of the training experience. The two components were integrated as complementary sources of evidence in addressing the research question.

Reflective journals, storyboards created with Gemini Storybook, digital stories developed with Canva, and responses to the open-ended questions of the final questionnaire were analysed using Reflexive Thematic Analysis (Braun & Clarke, 2006, 2021). A predominantly inductive approach guided the development of codes and themes from the data, while professional reflection served as the overarching interpretive framework. Rather than classifying

responses or quantifying linguistic expressions, the analysis explored how participants interpreted the critical episodes and articulated professional reflection across the analysed materials.

Following the six phases of Reflexive Thematic Analysis, meaningful excerpts were identified through repeated readings of the reflective journals and coded inductively. Codes were assigned to segments of data relevant to participants' interpretations of the critical episodes, emotional responses, proposed educational strategies, and reflections on their professional role. Similar codes were grouped into preliminary themes, which were reviewed and refined through continuous comparison with the dataset until a coherent thematic structure was achieved. Theme development was therefore understood as an interpretive and iterative process rather than as the identification of themes objectively contained in the data. In line with the reflexive orientation of the analysis, the researchers acknowledged that their theoretical focus on professional reflection informed the analytical attention, interpretation, and refinement of the themes. The same analytical approach was applied to the storyboards and digital stories, examining how written reflections were transformed into multimodal representations while preserving coherence with the original journals.

Quantitative questionnaire data were analysed using descriptive statistics in Microsoft Excel (frequencies, percentages, means, and standard deviations), while responses to the open-ended questions were included in the Reflexive Thematic Analysis described above.

Qualitative and quantitative findings were integrated through methodological triangulation, allowing reflective journals, multimodal artefacts, and questionnaire responses to be interpreted as complementary representations

of participants' reflective learning processes. Representative excerpts from the reflective journals are presented in the Results section to illustrate each theme.

Questionnaire responses were collected anonymously. In reporting the qualitative findings, excerpts from the reflective journals were anonymised and identified using codes. The use of the collected materials for research purposes received formal approval from the Ethics Committee of Pegaso Telematic University.

3. Results

3.1 Themes emerging from the reflective journal corpus

Inductive coding of the reflective journals identified four overarching themes reflecting different dimensions of professional reflection. To ensure confidentiality, excerpts were anonymised and identified using the abbreviation RJ (Reflective Journal) followed by a progressive number (e.g., RJ-01).

Table 3. Summary of the reflexive thematic analysis

Illustrative codes	Theme
agitation, withdrawal, resistance, relational difficulties.	Looking beyond behaviour.
fear, frustration, empathy, attentive listening, acceptance.	Recognising emotions.
adaptation, mediation, collaboration, inclusive strategies.	Designing inclusive responses.
awareness, learning, professional responsibility, self-reflection.	Rethinking the professional role.

Looking beyond behaviour

The first theme captures the progressive reinterpretation of observable behaviour in relation to pupils' educational, relational, and emotional needs.

Refusal to participate, silence, and limited engagement were increasingly understood as meaningful signals requiring deeper educational interpretation.

Reflecting on the critical episode involving a pupil with dyslexia who was reluctant to read aloud, one participant understood Marco's behaviour as "*a form of self-protection in response to a situation experienced as humiliating*" (RJ-02). Similarly, Adam's silence was understood as an expression of vulnerability and a need for emotional security: "*I would try to interpret the child's behaviour as a sign of vulnerability and a need for security*" (RJ-05).

Taken together, behaviours initially perceived as problematic came to be interpreted as communicative expressions embedded within pupils' personal, relational, and contextual experiences.

Recognising emotions

In Federico's case, one participant recognised that managing oppositional behaviour initially generated feelings of frustration and helplessness, which gradually gave way to a deeper understanding of the pupil's emotional experience: "*As a teacher [...] my initial reaction is one of frustration and helplessness [...] However, this is soon replaced by sadness when I see him trapped in such a destructive relational pattern*" (RJ-16).

Participants' reflections shifted from pupils' academic performance to their emotional and relational well-being, recognised as a prerequisite for participation and learning. Reflection also extended to participants' own emotional responses, highlighting emotional awareness as a core component of professional judgement. Educational challenges came to be understood not simply as obstacles to overcome but as expressions of underlying needs

requiring educational environments characterised by safety, trust, and recognition.

Designing inclusive responses

The third theme concerns participants' reflections on the design of inclusive educational responses. Across the reflective journals, they proposed strategies aimed at personalising learning, adapting educational contexts, and promoting participation.

In Chiara's case, participants recognised that simple encouragement was insufficient and that the priority was to create an emotionally safe learning environment: "*Reassurance alone is not enough; what is needed is to create a sense of security*" (RJ-18). This reflection led to strategies that respected the pupil's pace, normalised mistakes as part of the learning process, and promoted a supportive, non-judgemental classroom climate.

Similarly, in Giulia's case, attention shifted from correcting academic performance to supporting the pupil's emotional well-being: "*The goal would not simply be to correct her work, but to help her regain a sense of calm and self-confidence*" (RJ-15). In Federico's case, one participant recognised that the difficulty depended not only on the pupil but also on the design of the activity, proposing a more structured inclusive response: "*The inclusive strategy should not be isolation, but the adoption of a more structured collaborative approach*" (RJ-16).

Rather than adapting pupils to existing classroom conditions, participants increasingly reconsidered how educational environments could be redesigned to promote participation and inclusion.

Rethinking the professional role

The final theme concerns participants' growing awareness of the complexity of their professional role through the interpretation of the critical episodes. Reflecting on Adam's case, one participant recognised that professional responsibility extends beyond monitoring learning outcomes: "*I came to realise that, as a teacher, it is not enough to check whether pupils have understood the content... It is equally important to create an emotionally safe environment where every pupil feels able to speak without fear of making mistakes*" (RJ-21).

The same participant also highlighted the importance of suspending immediate judgement and assigning new meaning to pupils' behaviour: "*I realised the importance of listening to pupils' silent signals, suspending immediate judgement, and considering silence not as an absence, but as a form of communication that calls for attention, acceptance, and educational care*" (RJ-21).

Overall, participants increasingly interpreted pupils' behaviour in relation to their educational, relational, and emotional needs while reconsidering their own professional assumptions and educational decisions.

3.2 AI-Supported narrative transformation of reflection

The storyboards created with Gemini Storybook illustrate how participants reworked the reflections documented in their reflective journals into illustrated narratives, which were subsequently developed into digital stories using Canva through the integration of images, written text, and voice narration. The analysis indicates that this process involved a further stage of reflective elaboration rather than a change in format alone. Across the resulting narratives, a recurring tendency towards the symbolic representation of the critical episodes emerged, with these episodes reinterpreted through

metaphors, characters, and narrative settings that made emotional experiences, relationships, and educational meanings more explicit.

In most cases, problematic behaviour did not constitute the outcome of the stories but rather their starting point, from which new educational and relational possibilities gradually emerged. The multimodal productions showed strong continuity between participants' reflective journals and their narrative representations and indicated that generative AI was used as a mediating narrative technology rather than as a substitute for reflective thinking.

Table 4. *Multimodal transformation of reflection*

Reflective Journal	Digital Storytelling
Observation of the critical episode.	Narrative reinterpretation of the critical episode.
Descriptive and analytical language.	Symbolic and visual language.
Reflective analysis.	Envisioning future educational possibilities.
Interpretation of the educational situation.	Representation of relational dynamics.
Written reflection.	Multimodal narrative (images, text, and voice narration).
Professional reflection.	Narrative design supported by AI.

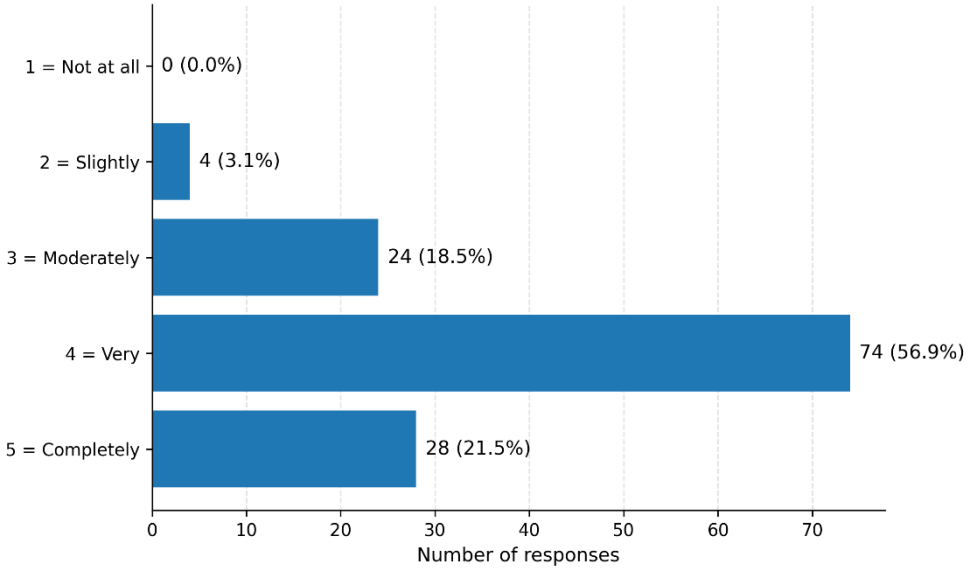
3.3 Participants' perceptions of the training programme

Responses to the final questionnaire indicated positive perceptions of the training programme, particularly regarding its reflective activities and the integration of AI. They perceived the learning experience as supporting professional reflection, deepening their understanding of educational situations, and promoting the informed use of generative AI in special education teacher training.

Although most participants reported having limited prior experience with generative AI tools, they considered the critical episodes realistic and closely aligned with authentic school contexts. The reflective journal was consistently

recognised as a valuable pedagogical tool for supporting the observation of pupils' behaviour, fostering a deeper understanding of the emotional dimensions of educational situations, and encouraging critical reflection on the teacher's professional role.

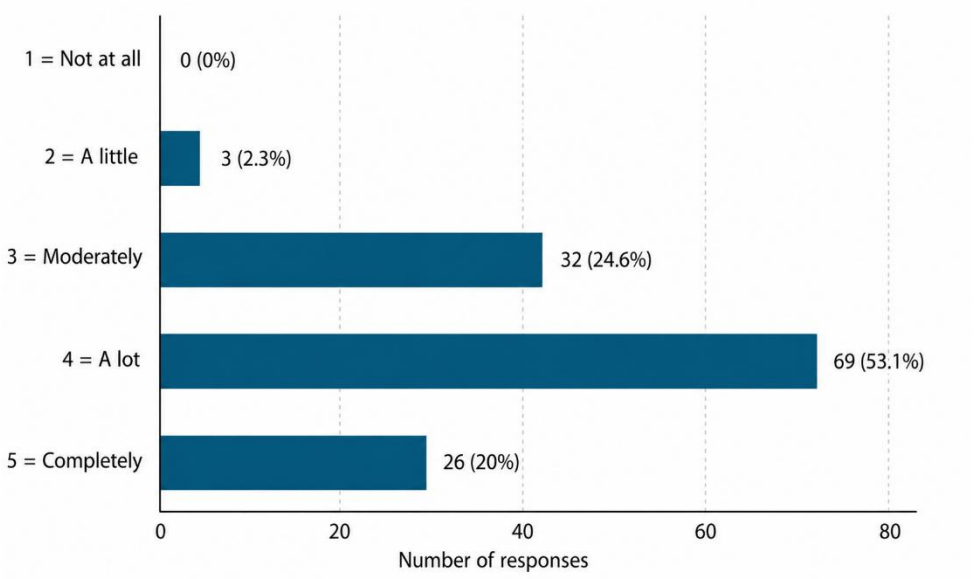
Graph. 1 Participants' perceptions of the usefulness of the reflective journal in special education teacher training.



As shown in Graph 1, participants reported a highly positive evaluation of the reflective journal. Most respondents rated it as either *very useful* (56.9%) or *completely useful* (21.5%), while 18.5% considered it *moderately useful* and only 3.1% expressed a lower level of agreement. No participant rated the reflective journal as *not useful at all*. These findings align with the thematic

analysis, in which reflective writing was perceived as supporting the interpretation of educational situations and professional learning.

Graph. 2. Participants' perceptions of the integration of theory and educational practice.



As shown in Graph 2, 73.1% of participants selected the two highest points on the Likert scale (A lot and *Completely*), while 24.6% rated the programme *Moderately* and only 2.3% expressed a lower level of agreement. Participants perceived the training programme as supporting the integration of theoretical knowledge and educational practice and as increasing their preparedness to address complex educational situations. The convergence between questionnaire responses and qualitative findings further supports this interpretation. The analysis of the open-ended responses identified three

recurring themes. Questionnaire responses are reported using the code Q (Questionnaire), followed by a progressive number (e.g., Q-01).

The first theme relates to participants' perceptions of generative AI as a tool capable of supporting educational planning and reflective processes without replacing teachers' professional judgement. One participant described AI as "*a useful support for educational planning, but the final decision remained my responsibility as a teacher*" (Q-01). Another highlighted the importance of maintaining teachers' agency: "*The risk is relying too heavily on AI, which could weaken teachers' professional competence. I believe it is important to use AI without allowing it to replace us*" (Q-02).

Alongside these considerations, several participants emphasised the importance of becoming more familiar with generative AI tools and of using them critically and responsibly. The main concerns related to the risk of standardised responses, the quality of prompts, the potential reduction of critical thinking, and the need for continuous human oversight. Overall, participants' responses associated the educational value of generative AI with teachers' pedagogical competence and its purposeful integration into educational practice.

The second theme highlights the perceived potential of Gemini Storybook for designing personalised and inclusive learning activities. One participant explained: "*I would use it to create personalised stories about emotions [...] to encourage expression and inclusion among pupils with communication difficulties*" (Q-03).

The third theme explores the educational potential of digital storytelling, particularly in relation to collaborative writing, group activities, and the shared construction of narratives. One participant noted: "*I would use it for*

collaborative creative writing activities [...] Gemini could help us structure the storyline by offering original ideas that children could then develop further" (Q-05).

Taken together, participants viewed digital storytelling as a collaborative pedagogical experience rather than merely a final product, and generative AI as a support for reflective and creative processes without replacing teachers' professional judgement.

4. Discussion

The collected materials indicate a progressive reflective process, moving from the observation of educational situations to their pedagogical reinterpretation. Reflective writing, digital storytelling, and AI functioned as complementary stages of this process.

Here, professional reflection is the primary construct; professional judgement denotes educational decision-making within that process, while reflective competence is not treated as a demonstrated outcome and teachers' agency refers to their retained interpretative control.

A first point concerns the contribution of the reflective journal to professional reflection. The journals showed a shift in participants' attention from observable behaviours to pupils' educational, relational, and emotional needs, alongside proposals for inclusive responses. This pattern points to a movement from description to pedagogical interpretation.

This interpretation is consistent with Dewey's (1961) conception of reflection, later developed by Schön (1983), as critical examination of experience. Reflection can therefore inform professional judgement.

The findings also align with Mortari's (2003, 2009) conception of reflection as making explicit the interpretative processes underlying educational action. Participants questioned initial interpretations and reformulated their understanding of school experience.

Overall, these findings are consistent with research showing that reflective journals support professional awareness and informed educational decision-making (Moon, 2006; Larrivee, 2008; Lavín & Goodman, 2023).

The reflective journals also indicated increasing awareness of the contextual factors underpinning inclusion, consistent with the biopsychosocial perspective of the ICF. Educational challenges were interpreted as the result of interactions among pupils' functioning, environmental factors, and relational dynamics, supporting ecological perspectives that view educational participation as emerging from interactions between learners and their environments rather than from individual characteristics alone.

A second major contribution concerns the role of digital storytelling as an intermediate reflective space between written reflection and educational action. The resulting digital stories indicate that transforming reflective journals involved a further reinterpretation of experience rather than a change in expressive format alone. By constructing multimodal narratives, participants identified the essential elements of each critical episode, organised them into coherent storylines, and represented them through visual and narrative forms. This interpretation aligns with Bruner's (1992) concept of narrative thinking, according to which storytelling enables the reinterpretation of experience and the construction of new educational meaning.

The storyboards presented during the sharing session showed that identical critical episodes were represented through diverse pedagogical

interpretations. Although participants worked from the same scenarios, they produced different protagonists, settings, plots, and representations of emotional and relational dynamics, with AI-supported storytelling associated with multiple interpretations rather than narrative standardisation.

Prompt writing also emerged as an additional stage of reflection. Translating the interpretations developed in the reflective journals into prompts required participants to transform pedagogical reasoning into narrative instructions for the AI system. The storyboard based on the critical episode “Chiara is afraid of making mistakes” illustrates how this process extended the original reflection while participants retained interpretative control. Rather than accepting the first output as final, participants refined the generated stories through successive prompt revisions until they reflected their pedagogical interpretations. These observations suggest that generative AI functioned as a narrative support rather than an autonomous author.

Responses to the final questionnaire provided complementary evidence. Participants described generative AI as a resource for reflection, educational planning, and narrative construction while maintaining that educational decisions remain the teacher's responsibility. They also identified possible applications for developing social stories, emotional learning activities, and inclusive interventions for pupils with diverse educational needs, including Specific Learning Disorders (SLD), Attention-Deficit/Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), anxiety-related difficulties, and newly arrived migrant pupils. Gemini Storybook was also perceived as a resource for designing inclusive learning activities that promote social and emotional learning and foster collaborative understanding of diversity. These responses are consistent with participants' perception of generative AI as

supporting narrative elaboration while leaving pedagogical interpretation and educational decision-making to teachers.

This interpretation is consistent with research highlighting the contribution of digital storytelling to meaning-making and reflective engagement (Robin, 2008; Khoo et al., 2024). Recent studies similarly indicate that generative AI can support reflective processes in teacher education when embedded in structured digital storytelling, dialogic reflection, and critical comparison with teachers' own professional judgement (Wei et al., 2025; Erbay-Çetinkaya, 2025; Erdogan, 2026). The present findings contribute to this literature by highlighting the importance of integrating AI within a structured reflective pathway rather than focusing on technological features alone.

Taken together, the findings point to an association between the integration of reflective journals, digital storytelling, and AI and professional reflection, expressed in the transition from educational experience to pedagogical interpretation and the design of inclusive educational responses. The study therefore proposes a pedagogically sequenced model in which reflection extends beyond reflective writing through multimodal storytelling and AI-supported narrative transformation. Generative AI is introduced only after reflective work has taken place, as a support for narrative representation, while teachers retain interpretative control and professional judgement.

These findings suggest that the educational value of generative AI depends not on the technology itself but on its pedagogically grounded integration in reflective learning environments. Although developed in special education teacher training, the proposed instructional model may also inform broader teacher education initiatives seeking to integrate reflective practice and generative AI while preserving teachers' agency.

5. Conclusion

This study suggests that integrating reflective journals, digital storytelling, and generative AI within a coherent instructional pathway can support professional reflection in special education teacher training. Taken together, the collected materials indicate a progressive reflective process from the interpretation of educational situations to the design of inclusive educational responses. Within this process, generative AI appeared to support narrative elaboration, while pedagogical interpretation and educational decision-making remained with the teachers.

Several limitations should be acknowledged. The training programme was delivered entirely online and involved a large cohort of participants, limiting opportunities for collaborative activities, peer dialogue, and the co-construction of digital stories. The study was also conducted within a single institutional context and did not include longitudinal follow-up, limiting the transferability of the findings and preventing assessment of whether the reflective processes observed during the intervention were sustained over time or transferred into professional practice. Finally, the study relied on self-reported reflections, multimodal artefacts, and questionnaire responses, which may not fully capture how such processes are enacted in authentic educational settings. Future research could integrate classroom observations, follow-up interviews, and longitudinal designs across different educational contexts, educational levels, and disciplinary areas.

Beyond the specific context of special education teacher training, this study contributes to current debates on the pedagogical integration of generative AI by proposing a reflective instructional model combining reflective writing,

multimodal storytelling, and AI-supported narrative transformation. Generative AI may support reflective processes while preserving teachers' agency.

Ultimately, the findings suggest that AI integration in teacher education should be approached as a pedagogical issue, with reflective learning designed to preserve teachers' professional judgement.

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