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Co-Creation of a Multi-Tiered Narrative Intervention Program for Speech-Language Pathology and Educational Settings

Júlia Florit-Pons,[a] Pilar Prieto,[a,b] and Alfonso Igualada[c,d,e]

[a] Department of Translation and Language Sciences, Universitat Pompeu Fabra, Barcelona, Spain [b] Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain [c] NeuroDevelop eHealth Lab, eHealth Center, Universitat Oberta de Catalunya, Barcelona, Spain [d] Department of Psychology and Education Sciences, Universitat Oberta de Catalunya, Barcelona, Spain [e] Institut Guttmann, Institut Universitari de Neurorehabilitació, Barcelona, Spain

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ABSTRACT

Purpose: This study aims to describe how a multi-tiered multimodal narrative intervention program was developed by integrating research and real-life professional practice through a participatory co-creation process using multiple methods.
Method: A total of 24 preschool teachers, 69 therapists, and three researchers working in Catalonia participated in a five-session iterative co-creation process. First, the initial narrative intervention prototype was presented. Then, using the nominal group technique, practitioners generated ideas associated with narrative-based training. These ideas underwent qualitative and quantitative analyses to ensure that practitioners' needs were reflected in the prototype's design, with corrections made when necessary. Participants then piloted the intervention in their professional contexts and provided feedback. This led to the final revision of the narrative intervention program, approved by all participants.
Results: Qualitative and quantitative analyses led to a few changes in the intervention protocols but essentially confirmed the practicability of the multi-tiered intervention prototype, which might therefore ensure the intervention's feasibility and effectiveness.
Conclusions: This study aligns with the implementation science approach where educational interventions must be based on science and informed by contextual factors affecting their implementation in real life. Our results underline the importance of following co-creation processes that systematically accommodate practitioners' perspectives to improve educational and clinical outcomes.

Narration is the ability to generate and tell or retell a real or fictional story (R. B. Gillam & Ukrainetz, 2006). Oral narrative skills are one of the most important milestones in language development and are considered a valid and ecological measure to assess children's language development (e.g., Demir & Küntay, 2014; Duinmeijer et al., 2012; Stites & Özçalışkan, 2017). Specifically, narrative abilities have a long-term impact on children's language and academic performance, especially in the preschool years, when these abilities act as predictors of later linguistic performance (e.g., Demir et al., 2015; Dickinson & McCabe, 2001; Griffin et al., 2004).

In the last few decades, a great deal of research has been carried out on how to improve oral narrative skills, with various narrative interventions having been designed and implemented for preschool- and school-aged children as a result (see Favot et al., 2021, and Pico et al., 2021, for systematic reviews). Studies have shown that such interventions can boost children's narrative skills both in classroom contexts (e.g., Khan et al., 2014; Spencer et al., 2015) and in small groups or individualized settings with children who have language or communication disorders (see, e.g., Dodd et al., 2011, and Hettiarachchi, 2016, regarding group treatments and S. L. Gillam et al., 2018,

Correspondence to Júlia Florit-Pons: julia.florit@upf.edu. ***Disclosure:*** *The authors have declared that no competing financial or nonfinancial interests existed at the time of publication.*

and Petersen et al., 2010, for individual treatments; for reviews, see Donolato et al., 2023; Favot et al., 2021; Pico et al., 2021).

Recent international educational policies have emphasized the importance of implementing multi-tiered interventions (Clark & Dockweiler, 2020; Ebbels et al., 2019), whereby the amount of support provided to a child, whether instructional or behavioral, increases the level of intensity (tiers) as that child's needs become more serious. This concept has been formalized into what is known as the multi-tiered system of supports (MTSS) approach, now widely applied in education systems to ensure that all children are provided with the appropriate type and level of support throughout the different stages of their education (for MTSS as applied to the Catalan education system, see Regional Ministry of Education, Catalan Government, 2015). What this means in practice is that children who do not receive sufficient teacher-mediated support in Tier 1—the group classroom (*universal support*)—may benefit from more targeted support in Tier 2—in small groups (*additional support*)—or may ultimately require more individualized attention provided by a therapist in Tier 3 (*intensive support*; Clark & Dockweiler, 2020; Jimerson et al., 2016). Such multi-tiered interventions also serve to interconnect and integrate the complementary work of educators and health care professionals.

For example, for children with language difficulties, classroom interventions related to the development of narrative skills can be dovetailed with therapeutic interventions delivered by speech-language therapists (Archibald, 2017; Ebbels et al., 2019). However, at least as reflected in the research, narrative intervention has taken place in either the classroom (e.g., S. L. Gillam et al., 2014; West et al., 2021) or the clinical context (e.g., Diez-Itza et al., 2018; S. L. Gillam et al., 2018; see Favot et al., 2021, for a review), with little attention paid to the relation between the two domains. To our knowledge, only one narrative intervention has been designed that adopts a multi-tiered approach, namely, Spencer and Petersen's (2018) *StoryChamps* intervention (see also the *Nuffield Early Language Intervention* by Snowling et al., 2022, which incorporates some narrative-based activities). The *StoryChamps* program, which incorporates the three separate tiers for large-group, small-group, and individualized intervention at the preschool and school stages, has been proven to be effective for boosting children's oral language skills as well as children's reading and writing skills (e.g., Petersen et al., 2024; Spencer et al., 2018).

With regard to the Catalan context, the official curriculum states that by the end of the preschool stage, children are expected to have acquired a set of core competences, including linguistic, mathematical, digital, creative thinking, and social competences, among others (Regional Ministry of Education, Catalan Government, 2023). The linguistic competence primarily emphasizes the development of preliteracy skills—such as phonological awareness, letter and syllable recognition, and introductory reading—while comparatively less attention is devoted to oral communication skills. These are generally framed in terms of the children's ability to interact in various social contexts, with narrative abilities mentioned only in relation to listening comprehension. The Catalan law (Regional Ministry of Education, Catalan Government, 2009) also states that the basic principles of the Catalan education system are inclusion and social cohesion, through the implementation of an MTSS, ensuring that all students—regardless of their individual needs—receive increasing levels of personalized support within a flexible, equitable, and inclusive educational framework. Despite policy directives and recommendations, there remains a lack of multi-tiered materials or programs that support children's oral narrative development.

When designing multi-tiered interventions that can be successfully implemented in both educational and speech-language pathology settings, it is important to take into account the perspectives of professionals working in each of these fields—whether practitioners or researchers—and involve them in the design process (Dollaghan, 2007; Ocloo & Matthews, 2016; Peters et al., 2013). A systematic review of health and social research has shown that involving other stakeholders, such as patients and even the general public, can help to make research outcomes more applicable and novel interventions more rapidly accepted (Brett et al., 2014; see also Moullin et al., 2019). Within the field of education and speech therapy, the recent systematic review by Gallagher et al. (2023) showed that collaborative consultation with different practitioners working at the school level might positively influence the outcomes of the intervention (see also Douglas et al., 2022). In line with this, Komesidou and Hogan (2023) developed a comprehensive implementation science framework (generic implementation framework for school settings; GIF-School) to be incorporated at schools to systematically integrate research evidence into the intervention practice at schools.

Participatory research in designing interventions can be conducted at different levels, such as identifying and prioritizing users' needs and priorities (e.g., Clemensen et al., 2017; Feuerstein et al., 2018; Giacco et al., 2023; Olswang & Prelock, 2015; Rankin et al., 2016) or piloting early versions or prototypes of the interventions in different phases, ensuring that the intervention is adoptable and feasible (e.g., O'Cathain et al., 2019). Participatory research is especially common in health care research (Clemensen et al., 2017) to inform the development of innovations using qualitative and quantitative data. More

recently, it has gained popularity in education and speech therapy research (e.g., DeLuca et al., 2023; Douglas et al., 2022; Feuerstein et al., 2018; Gallagher et al., 2019; Komesidou & Hogan, 2023; Olswang & Prelock, 2015). Although there is recent evidence of the need and effectiveness of adopting an implementation science and participatory research approach to develop educational interventions, to our knowledge, few studies have adopted it with multi-tiered narrative interventions (see Spencer & Petersen, 2018, for an exception).

The main goal of this article is to describe the design and construction of an evidence-based multi-tiered narrative intervention program (MultiModal Narrative [MMN]) by integrating evidence from research and the real-life expertise of working professionals from the domains of education and speech-language therapy. This program was developed based on a participatory co-creation process that involved three groups: the three authors of this study who developed the initial prototype of the program, a group of preschool teachers, and a group of therapists, all active professionals working in the Catalan educational and/or clinical context. The site is of significance, given that, to date, most narrative intervention programs have been implemented and validated in English-speaking regions; by contrast, Catalonia lacks scientifically validated and multi-tiered narrative programs aimed at Catalan speakers, despite the fact that Catalan is the vehicular language of the education system. For this reason, we chose to develop a new intervention program that integrated the strategies and principles previously validated by other interventions while also tailoring it to the Catalan context through a co-creation process with professionals. Additionally, we aimed to incorporate a novel strategy (multimodality), which had not been systematically incorporated or tested in existing narrative intervention programs (see the Development of the MMN Prototype subsection below for more details).

Method

Participants

The participants in this study were 24 preschool teachers and 69 therapists in fields related to speech-language pathology or psychology, all of them living and working in Catalonia, Spain (see Table 1). All participants provided informed consent prior to participation in the study. The study protocol was reviewed and approved by the Institutional Committe for Ethical Review of Projects at Universitat Pompeu Fabra. Using a snowball technique, the teachers were recruited from public schools, while the therapists were recruited from public centers for child development and early care, public support services for children with special hearing or and language needs, and private speech-therapy centers. To be able to participate in the study, professionals needed to be working in Catalonia and, at the time of recruitment, be in charge of delivering intervention services to preschool- and early school–aged children. Particularly, to be included in the group of teachers, professionals needed to be actively working as preschool teachers in a public preschool. As for the group of therapists, it was required that professionals were speech-language therapists or any related profession (such as psychologists, specialized language teachers, or psychopedagogues) and were therefore providing Tier 3 intervention services either within or outside schools. There were no specific additional exclusionary criteria beyond the inclusion requirements. In other words, professionals who did not meet the above inclusion criteria were not eligible to participate. This approach ensured that the sample was

Table 1. Participant characteristics.

Characteristic	Number of participants (%)	
	Teachers	Therapists
Gender	Female: 23 (95.8%) Male: 1 (4.2%)	Female: 67 (97.1%) Male: 2 (2.9%)
Profession	Preschool teacher: 24 (100%)	Speech-language therapist: 52 (75.4%) Specialized language teacher: 6 (8.7%) Speech-language therapist and psychologist: 4 (5.9%) (Neuro)psychologist: 3 (4.4%) Psychopedagogue: 3 (4.4%) Audiologist: 1 (1.2%)
Employing institution	Public preschool: 24 (100%)	Public support service for children with hearing and or language needs: 49 (46.2%) Private speech-therapy service: 11 (11.8%) Public center for child development and early care: 9 (9.7%)

Note. Despite the heterogeneity in participants' profession within the therapists group, all participants were involved in delivering intervention services to children with language and communication disorders.

limited to individuals directly relevant to the study's aims, without unnecessarily restricting the participant pool.

The Catalan Context

The Catalan education system mostly includes public schools (70.40%[1]), but there are also semiprivate and private schools (29.60%[1]). Three separate educational stages are included in the system: preschool (ages 3–6 years), primary school (ages 6–12 years), and high school (ages 12–16 years). At all three stages, groups are composed of approximately 20–25 children, with one main classroom teacher in charge of the group. During the preschool and primary school stages, most classes are delivered by the same teacher, whereas during the high school stage, there is a specialized teacher for each subject. Speech therapy intervention services can be provided to children with language and communication needs at different levels, including within schools (e.g., pull-out sessions outside the mainstream classroom), or in external settings such as public child development and early care centers or private speech therapy centers. In the Catalan educational system, however, providing such support within schools requires an undergraduate degree in education. As a result, the vast majority of professionals offering intensive language support in schools are specialized language teachers. Some of these professionals also hold two separate undergraduate degrees—one in education and the other in speech therapy. This is the reason why the therapists group included professionals with diverse professional backgrounds, including specialized language teachers, speech-language pathologists, psychologists, and psychopedagogues, who were working across a range of institutions. Although some therapists work within schools, the intervention services provided to children with language and communication needs—whether delivered inside schools or in external settings—are usually independent, with a lack or limited formal protocols of collaboration between teachers and therapists.

Positionality Statement

The research team in charge of this study included two linguists (first and second authors) and one speech-language pathologist (third author). The third author had prior clinical experience and had previously been involved in participatory research. These varied backgrounds might have biased our perspectives during data collection, analysis, and interpretation of the findings.

Procedure

The current study adopts an implementation science approach aligned with the EPIS (Exploration, Preparation, Implementation, and Sustainment) framework (for a review, see Moullin et al., 2019), with the aim of developing an evidence-based intervention through participatory research (see also Clemensen et al., 2017). The steps described in the following subsections—namely, the development of the initial research-based prototype and the design of the five-session co-creation process—align with a pre-implementation stage that includes two phases of the EPIS framework: an initial *exploration* phase, which focuses on identifying stakeholder needs and adapting the intervention to the specific implementation context, and a *preparation* phase, which includes professionals' pilot implementation of the intervention prototype.

Development of the MMN Prototype

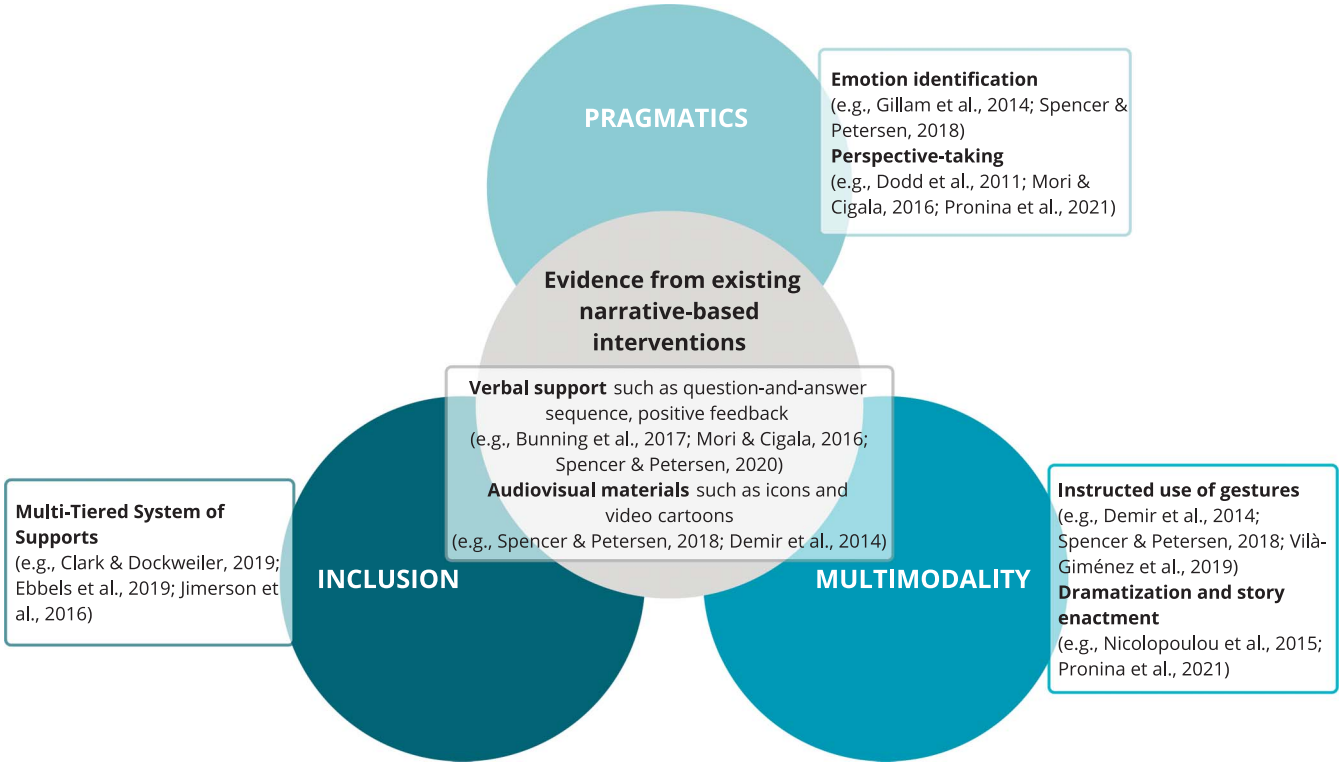
Prior to the involvement of participants, we designed an MMN-based intervention—basing ourselves on existing narrative-based interventions (e.g., R. Gillam et al., 2017; Glisson et al., 2022; Spencer & Petersen, 2018)—intended to foster the development of preschool children's narrative skills. Previous studies in the field have shown the value of using verbal techniques such as question-and-answer sequences to reinforce a child's understanding of narrative structure and offering positive verbal feedback on a child's input (see Spencer & Petersen, 2020, for a comprehensive review of the principles on narrative intervention practice). Other studies have highlighted the benefits of using complementary (audio) visual materials to represent or clarify narrative structure (for reviews, see Favot et al., 2021; Pico et al., 2021; Spencer & Petersen, 2020).

A second body or research has suggested that oral narrative instruction should be systematically linked to multimodal communication, understood as the use of hand gestures, facial expressions, body movements, and prosody to accompany the verbal message of speech (Perniss, 2018). Both teachers and therapists naturally use multimodal cues when telling or retelling stories. Indeed, there is already research showing that multimodality can be beneficial for boosting children's narrative skills (e.g., Demir et al., 2014; Nicolopoulou et al., 2015; Vilà-Giménez & Prieto, 2021).

The MMN prototype was also motivated by the positive outcomes of two studies that integrated pragmatics into narrative-based interventions (Dodd et al., 2011; Pronina et al., 2021). The findings of these studies indicated that children can be trained not only to decode the verbal and gestural messages produced by a speaker but also to interpret a speaker's emotions and perspectives. Finally, as noted in the first part, we sought to make the design of the MMN prototype compliant with the current policies promoting MTSS, ensuring that all children receive the support they need. These four areas, which can be viewed as the theoretical foundation pillars for the MMN training program prototype, are illustrated schematically in Figure 1.

[1]Data extracted from the Regional Ministry of Education (https://educacio.gencat.cat/ca/serveis-tramits/directoris-centres/index.html).

Figure 1. The four domains of the research-based framework underlying the prototype MMN intervention program. MMN = multimodal narrative; NGT = nominal group technique.



General Design of the Collaborative Training Sessions

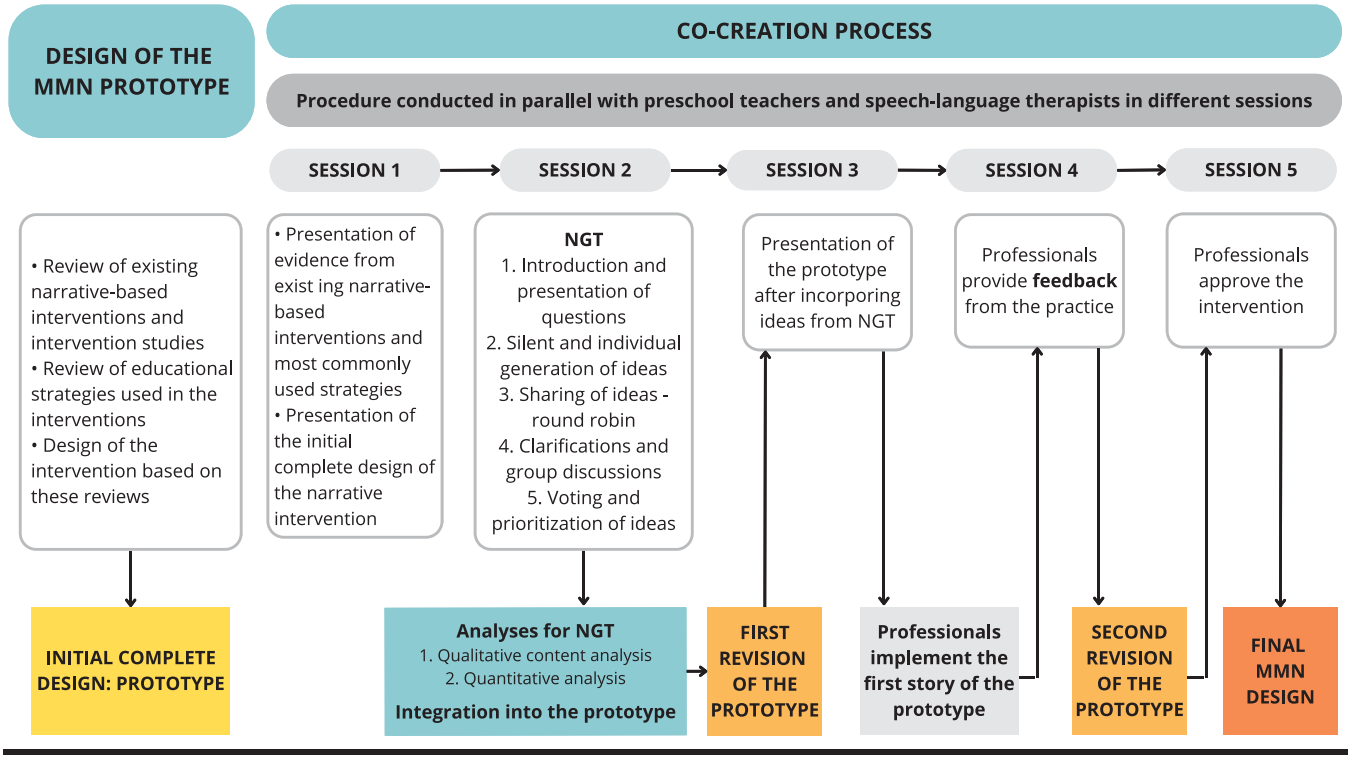
A five-session co-creation process[2] was followed using multiple methods. This process intended to familiarize the 93 participating practitioners with the MMN prototype, gather input from them regarding their own practices and needs regarding narrative skills training for children, incorporate that input into the prototype, have them pilot the revised prototype in their respective professional contexts, and then again incorporate their resulting feedback into a final formalized program that would be fully in tune with real-life intervention practice. Participants were grouped into three groups, one consisting only of teachers and the other two comprising roughly equal numbers of therapists. Thereafter, the groups worked separately but in parallel.

The five sessions making up the co-creation process took place as monthly 2-hr Zoom meetings between October 2021 and March 2022. Two members of the research team were present at each session: The first author led all sessions, the second author attended all sessions of the group of teachers, and the third author attended all sessions of the two therapist groups. The use of Zoom made it possible to include participants from all over Catalonia, and also Zoom's "breakout room" feature allowed for smaller group discussions. The materials for each session were created by the three authors and were reviewed by two members of the Catalan Regional Ministry of Education, who were experts in preschool multi-tiered interventions. Figure 2 shows a schematic summary graph of the five-session co-creation process.

Application of the nominal group technique and first revision of the MMN prototype (Sessions 1 and 2). The first online session was used to review the existing research evidence on narrative-based interventions and then present in detail the prototype for the multi-tiered MMN intervention. The second online session was devoted to gaining an overall understanding of the practices and needs of participating teachers and therapists concerning narrative training in the children with whom they were working. The methodology applied to do so was a modified version of the nominal group technique (NGT; as per Rankin et al., 2016) in a virtual setting. NGT is a structured procedure

[2]The sessions were offered as a short course entitled "Let's Improve Oral Narrative Abilities During Preschool Years: An Inclusive Multimodal Intervention Program for Boosting Oral Abilities" under the auspices of the Catalan Government's Regional Ministry of Education.

Figure 2. Summary graph of the procedure followed during the two 5-session co-creation processes. MMN = multimodal narrative; NGT = nominal group technique.



designed to first obtain a wide range of inputs from a group of people regarding a particular issue or problem to solve and then arrive at a consensually agreed set of solutions. Unlike a simple group meeting, NGT enables active participation by all participants (Mullen et al., 2021). This technique has been shown to be an effective method to systematically obtain group agreement in participatory research (e.g., Harvey & Holmes, 2012).

In the present instance, the implementation of NGT in Session 2 followed a systematic step-by-step process. First, smaller subgroups of (max = 12) participants were randomly created, resulting in two teacher subgroups and five therapist subgroups. For each subgroup, the first author served as the session's chairperson, guiding the session. The second or third author (depending on the group) acted as a secretary by noting down all ideas that were expressed in the session. The set of questions to be addressed is displayed in Table 2.

After the questions were posed by the chairperson, members of the subgroup were given roughly 8 min in which to reflect silently any ideas they had in response to the questions, without indulging in any interaction with other members of the subgroup. When all participants were ready, members took turns, in round-robin fashion, expressing just one of the ideas they had noted down. Each turn was kept completely free of interaction with other participants. Once each member had spoken once, expressing their first idea in connection with the question, a second round was carried out during which members had a chance to express a second idea. This procedure continued

Table 2. Questions presented during the nominal group technique session.

No.	Question
1	How do you train oral narrative and pragmatic skills in your professional context?
2	What are your needs with regard to training children in oral narrative skills in your professional context?
3	What are your needs with regard to training oral pragmatic skills in your professional context?
4	What would you need in order to make narrative interventions beneficial for all children (regardless of whether they have special needs) considering the participation of different professionals?
5	What would you need in order to make narrative interventions more effective?

until participants confirmed that they had expressed all their ideas related to that question. Then the round-robin presentation of ideas process was applied to the next question until all five questions had been dealt with, with the full process lasting around an hour. Throughout, the other researcher (secretary) took notes, listing all ideas for each question on a digital document shared with the group via the Google Docs platform. This was followed by a 15-min period in which participants could ask other subgroup members to clarify an idea they had put forth. Finally, participants were asked to reread the document prepared by the secretary and then, working individually, rank the three most important ideas for each question listed on Google Forms. This activity took roughly 15 min. The session ended with a 15-min discussion during which the two researchers showed the combined results from the ranking activity (automatically generated by Google Forms), with the goal of reaching a group consensus on the three most important ideas related to each focus question. Based on these ideas, the first revised version of the intervention prototype was prepared.

Pilot implementation of the intervention and second revision of the MMN prototype (Sessions 3, 4, and 5). The third online meeting of the subgroup was devoted to presenting a summary of the key findings from the NGT data analysis as well as the first revised version of the MMN prototype. Participants were invited to provide comments on the NGT results and the revised prototype, which served as a form of member checking to enhance the trustworthiness of the analysis and updates to the prototype. At the end of the session, participants were asked to carry out a partial implementation[3] of the MMN intervention with the children they were working with at that time in their respective professional settings. Importantly, participants were asked to voluntarily video-record themselves while implementing each session, which would then be watched only by the research team, and also note down all their reactions after the session ended.

The fourth online meeting centered on sharing and discussing feedback from participants about their experience of implementing the MMN intervention in their professional setting. First, participants were split up into small groups of four or five in which they shared impressions from having piloted the MMN intervention and were then asked to assess their experience in terms of whether the intervention had addressed the needs they had mentioned during the NGT session. After the small-group discussion, the larger group was formed again, and feedback from the small groups was shared, with the secretary meanwhile taking note of all that was said. These notes were subsequently analyzed, and the main ideas expressed were incorporated into the second revision of the MMN prototype.

Finally, the fifth and last session consisted of a detailed virtual presentation of the final revised MMN program, with two separate tiers (i.e., one for the universal support at the classroom level and another one for the intensive support at the individualized speech-therapy level), with nine intervention sessions each (a full description of the MMN training program appears in Florit-Pons et al., 2025). After this presentation, professionals were allowed to ask clarification questions or give any remaining comments. With this, they were asked to state whether they perceived the intervention to address their needs and usual practices in their professional context and, therefore, whether they approved the intervention prototype in its form. Professionals answered by either writing in the Zoom chat or using the "raise hand" feature.

Data Analyses

Data analyses were conducted of the NGT data and the professionals' feedback after they had piloted part of the MMN intervention, leading to the first and second revisions of the MMN prototype, respectively. Multiple methods were used to analyze the data qualitatively and quantitatively.

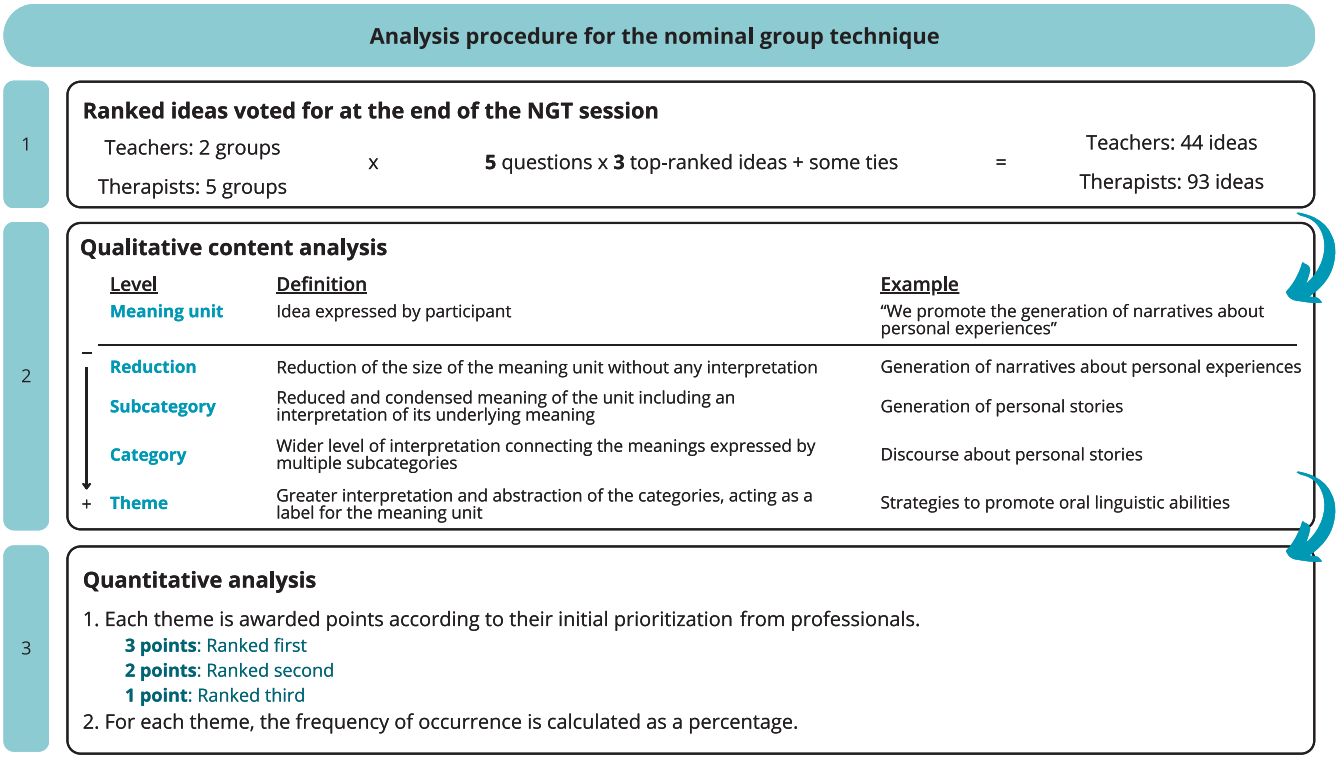
Analysis of NGT Data

The data from the seven NGT groups were analyzed qualitatively and quantitatively using a three-step procedure (see Figure 3). It will be recalled that the NGT process yielded a document listing the three most-voted ideas for each of the five questions and for each of the seven NGT groups. Further analyses of this data were conducted by grouping separately the two groups of teachers and the five groups of therapists. This resulted in a total of 44 ideas proposed by teachers and 93 ideas proposed by therapists.

Qualitative content analysis. An inductive qualitative analysis of these 137 ideas was carried out by the first and third authors following the procedure proposed by Graneheim and Lundman (2004) and Wallace et al. (2017) with the goal of distilling the ideas into a synthesized overall list broken down by thematic content. The procedure consisted of two main steps. First, each idea (i.e., meaning unit) was pared down into a *reduction* (i.e., a concise summary without interpretation) and then situated within a narrow *subcategory* (i.e., reduced and condensed meanings of the units including an interpretation of its underlying meaning) and a broad thematic *category* (i.e., a wider level of interpretation connecting the meanings expressed by multiple subcategories; see Figure 3 for an example). The second step involved the coding of themes (i.e., a greater interpretation

[3]The full MMN training program consists of nine sessions. Each group of three sessions centers around one cartoon story. In the pilot implementation referred to here, participants were asked to work with only one of three stories, in other words, to conduct only three sessions.

Figure 3. Procedure followed to analyze the data from the application of the nominal group technique (in the topmost rectangle, "ties" refers to the fact that often several different ideas received the same number of votes in the ranking process). NGT = nominal group technique.



of the categories that acted as general labels for the meaning units). Importantly, to simplify the interpretation of ideas, themes were defined as if they were a response to the question, "What is it important to consider in the design of a narrative-based intervention?" Throughout the process, to ensure the rigor and trustworthiness of the qualitative content analysis, the two authors consensualized their definitions of categories and themes (see Appendices A and B) and revised the coding process. Also, it was decided that a category or theme should not be generated unless it was represented by at least three separate ideas.

Quantitative analysis. The seven lists of ranked ideas generated by teachers and therapists were combined into overall lists, one for teachers and one for therapists, and then subjected to quantitative analysis by calculating the frequency of occurrence of each item.

Analysis of Professionals' Feedback

As described above, the feedback provided by participants in Session 4, after they had piloted the first revised version of the MMN prototype, was noted down during the session by the secretary in each group. These notes were subsequently discussed by the three authors meeting together for the purpose of using that feedback to make further changes in the design of the MMN prototype.

Results

This section reports the results from the qualitative and quantitative analyses of the NGT sessions and the analysis of feedback provided after the pilot implementation of the MMN intervention. In each case, presentation of the results is followed by an explanation of how these results were used to make changes in the MMN prototype.

First Revision of the MMN Prototype Based on NGT Data

The qualitative and quantitative analyses of the NGT data were carried out separately for teachers on the one hand and therapists on the other. The 44 ideas generated by teachers were classified into 59 subcategories and 15 categories. The latter were then grouped into four overarching themes. These themes and their constituent categories can be seen in Table 3, along with a few examples of meaning units (i.e., ideas) for each category. Similarly, the 93 ideas expressed by the therapists were classified into 118 subcategories and 20 categories. The categories reflected the same four themes, as listed in Table 4.

As represented in Tables 3 and 4, the theme entitled "strategies" included three categories that reflected concerns

Table 3. List of themes and categories extracted from the qualitative content analysis of the nominal group technique data from teachers, with examples of meaning units.

Themes	Categories	Examples of meaning units
Strategies to promote oral linguistic abilities	*Oral interaction*	• We generate oral interaction about children's stories. • Children tell stories to their classmates.
	Linguistic modeling	• We train story-retelling using repetitive and similar structures, modeled by the teacher. • We use intonation, changes of voice, and facial expressions.
	Socioemotional abilities	• There is a need to train children to understand and interpret the emotions of others as well as to express their own emotions. • There is a need to train children to put themselves in someone else's shoes.
	Oral discourse during structured activities	• Children tell stories through the activity called "Storybook Corner." • We train daily routines.
	Discourse about personal stories	• We promote the generation of narratives about personal experiences. • We retell our stories.
Materials and programs to train oral narration	*Structured and contextualized programs*	• There is a need for validated, diverse and modern materials in Catalan. • It is essential to have clearly defined goals.
	Material resources	• There is a need for resources aimed at children with special needs. • There is a need for innovative materials and resources.
	Use of storybooks	• Children tell stories through the activity called "Storybook Corner." • Children take storybooks home to read with their families and then retell the story to their classmates.
Diversity among children must be accommodated	*Child involvement*	• We need activities that catch children's attention. • We need activities that increase children's motivation.
	Diversity of oral needs	• There is a need for materials that are appropriate for children with language-learning difficulties. • Some children have difficulty with speech production and communication.
	Personalization	• We need to have smaller class sizes. • There is a need for validated, diverse, and modern materials in Catalan.
Professional concerns related to resources and working conditions	*Time resources*	• More time is needed to plan and organize interventions.
	Coordination	• Very clear planning and goals are necessary for teamwork or co-teaching. • We need to agree on how to implement interventions and share materials.
	Specialist resources	• Need to have a specialist referent giving support to difficulties. • There is a need for more support from specialists such as speech-language therapists.
	Training	• We need more training about linguistic diversity, language difficulties, multilingualism, and social problems.

Note. Categories in italics were present in data from both teachers and therapists.

common to both teachers and therapists, which included the importance of integrating oral interaction into the intervention setting; linguistic modeling strategies involving repetitive structures; and strategies for fostering awareness of emotion comprehension, such as understanding the emotions of characters and then generalizing them to their own emotions. However, the two groups of participants did not overlap with other categories connected with their habitual practices. Thus, while teachers highlighted their use of storytelling, reading books and retelling their contents, or recounting

Table 4. List of themes and categories extracted from the qualitative content analysis of the nominal group technique data from therapists, including examples of meaning units.

Themes	Categories	Examples of meaning units
Strategies to promote oral linguistic abilities	*Oral interaction*	• I promote conversation with questions. • I use interactive retelling of stories and temporal sequences; for example, I start the sentence or story and the child finishes it.
	Linguistic modeling	• I use retelling and modeling. • I tell a story using simple and clear structures.
	Socioemotional abilities	• I use stories that take into consideration Theory of Mind, which implies being able to assign feelings to characters and comprehend different perspectives.
	Visual materials	• I use visual materials such as storybooks, pictures, personal photos, or short films. • I use picture sequences to model narrative structure.
	Manipulable materials	• I use materials that can be manipulated like puppets or PLAYMOBIL toys. • I promote symbolic play.
	Enactment	• I promote enactment of the story with puppets. • I promote enactment of stories from the child's context.
Materials and programs to train oral narration	*Structured and contextualized programs*	• There is a need for permanently available programs or packages of programs. • There is a need for specific and structured methodologies to train oral narration.
	Material resources	• There is a need for attractive resources aimed at different levels. • There is a need for resources that will enable us to evaluate the progress of the child.
	Use of storybooks	• I tell stories using visual materials such as storybooks. • I promote the enactment of storybook stories using puppets.
	Resources in Catalan and Spanish	• There is a need for materials adapted to Catalan. • There is a need for materials in Catalan and Spanish, either newly created or validated adaptations of materials in English.
	Generalization	• Children need to be shown how to generalize to the real context and functionality. • Children need to learn to benefit from all the enriching contexts of daily lives such as positive interactions.
Diversity among children must be accommodated	*Child involvement*	• It is difficult to motivate children. • There is a need for more activities that guarantee active participation, either individually or in groups.
	Diversity of oral needs	• There is a need for more materials adapted to children's particular needs. • There is a need for sequencing in materials to reflect differences in learning.
	Personalization	• There is a need for materials that address all linguistic stages. • I use photo albums.
	Evaluation	• There is a need for continuous evaluation measures that can be used in each session to assess the child's needs. • It is necessary to evaluate pragmatic abilities in a more systematic way to detect which difficulties need to be prioritized.

(*table continues*)

Table 4. *(Continued).*

Themes	Categories	Examples of meaning units
Professional concerns related to resources and working conditions	*Time resources*	• I need more time to organize and prepare materials. • I need more flexibility in my schedule and time to think.
	Coordination among adults	• There is a need for coordination among all those adults that are in contact with the child. • There is a need for support from other colleagues such as teachers, speech-language therapists, or psychologists and better teamwork.
	Participation from families	• I need more cooperation from the children's families. • Children's families need to be empowered by adopting the strategies they have at home.
	Participation from professionals at schools	• There is a need for greater cooperation and coordination between teachers and language specialists at schools. • I need to be able to coordinate with teachers to link what I do with what they do in class.
	Access to classrooms	• I need to be able to intervene in the classroom for short periods. • It is difficult to gain access to classrooms.

Note. Categories in italics were present in data from both teachers and therapists.

personal experiences, therapists mentioned specific support materials and strategies, such as pictures, puppets, or story enactment.

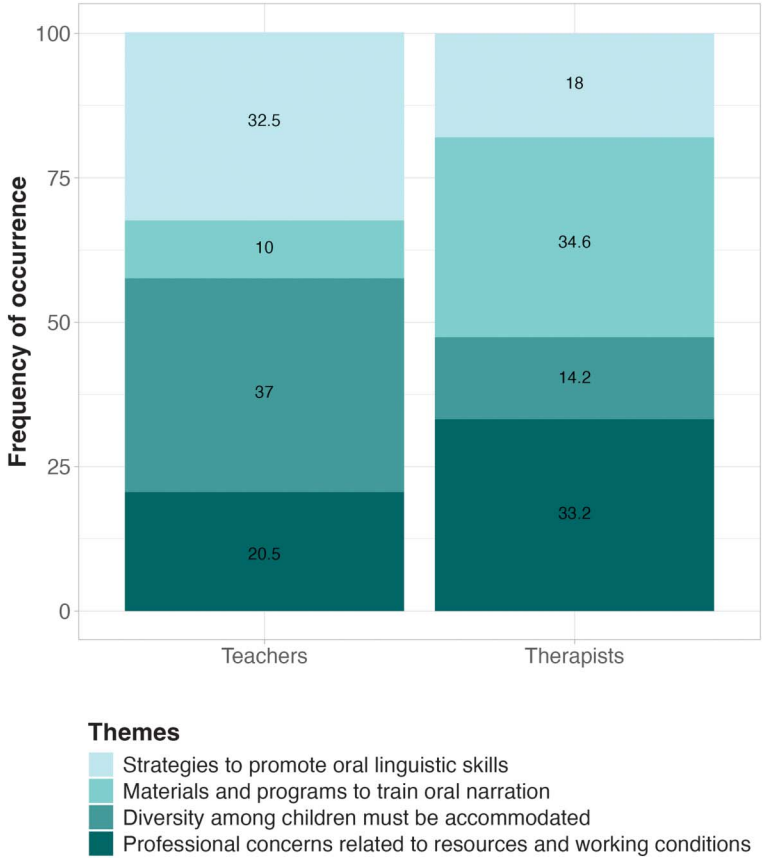
The "materials and programs" theme also included three shared categories. Both groups of professionals said that they usually used storybooks to promote oral narrative discourse. They also both mentioned a need for programs with clearly defined aims and specific methodologies as well as modern and attractive material resources tailored for children with different needs. Apart from these, however, therapists' comments reflected two additional categories: the need for materials that were in Catalan or in both Catalan and Spanish and the recommendation that these materials should be generalizable to other settings in the child's daily life such as their family.

The "diversity" theme included another three shared categories, all connected with the need to motivate children and encourage them to actively participate in activities, which might involve being able to personalize materials and activities that take into account children at different learning stages. The therapists also highlighted their need for evaluation methodologies that could help them identify children's needs and adapt interventions accordingly.

The fourth theme, "professional concerns," also showed overlap. Both teachers and therapists felt that they needed more time to plan and prepare intervention sessions. Both groups also asked for better coordination, although teachers referred to coordination with other teachers at the school, whereas therapists referred to coordination among all the adults who were involved in the lives of the children, including their parents. There was no overlap of teacher and therapist concerns in the remaining categories. Therapists expressed a desire for a higher degree of collaboration between children's parents and their teachers to ensure that all were working toward the same aim. They also said that they needed to be able to access the classroom to work with the children in that context as well as in the therapy context. Teachers pointed out their need for more specialized professionals to help them cope with the diversity of children's needs they confronted. Teachers also mentioned a desire for more training to help them address this diversity themselves.

The results of our quantitative analysis of the ideas presented in the NGT can be seen in Figure 4. The ideas were grouped into the four overarching themes and displayed in two separate columns, one for each participant group. Frequency of occurrence, that is, the number of times a particular idea falling within that theme was ranked as one of the top three priorities by a participant, is expressed as a percentage of the total number of ranked responses for that group. Interestingly, the results highlight a set of differences in the weight of the different themes across the two groups of professionals. First, for each group of professionals, two different themes accounted for more than 50% of occurrences. While teachers prioritized ideas that were related to the themes "diversity" (37%) and "strategies" (32.5%), therapists prioritized needs that belonged to the themes "materials and programs" (34.6%) and "professional concerns" (33.2%).

Figure 4. Frequency of occurrence of each theme expressed as a percentage, broken down by group.



Incorporation of NGT findings into the MMN program. The NGT process revealed that most participants' needs had already been accounted for by one of the four theoretical pillars underlying the MMN intervention prototype (see Figure 1). For example, there was substantial overlap between the evidence from research on narrative-based interventions and ideas expressed by teachers and therapists within "strategies," such as the importance of verbal strategies like using short, structured, and repetitive sentences within a structured activity setting or complementary audiovisual materials like pictures or short films. Additionally, they made reference to training children to understand and express emotions and perspectives of the characters in narratives, which is consistent with the literature on the role of pragmatics. As for multimodality, professionals also talked about the use of gestures and prosody, as well as story enactment activities, all of which can help to keep children engaged in a narrative-based activity. Regarding the element of inclusion built into the MMN prototype through its multi-tiered design, this is clearly in tune with participants' expressed concern with transversal coordination between the classroom and therapy contexts, as well as their interest in tailoring their work for children with special needs. Finally, there were a few other areas of interest to participants that were accommodated in our design, such as the incorporation of sessions where children could talk about personal experiences to help them generalize concepts or having validated intervention materials in Catalan.

That said, the NGT findings did serve to show us where certain adjustments to the prototype should be made. First, in the prototype version of the MMN, a set of still pictures was used to represent the main structural and emotional elements of the story. However, on the basis of input from participants through the NGT, we decided that it would be more effective to use animated GIFs (as opposed to a static image that did not capture movement) for this purpose to ensure that the whole action or emotion was visible. Second, as therapists highlighted the need for materials to help them evaluate children's learning process, we incorporated a set of short learning measures into the MMN procedure, which would allow professionals to measure the

child's comprehension and retelling abilities after each intervention session.

Finally, some categories could not be addressed in the first revision of the intervention, mostly falling under the "professional concerns" theme, given that these were needs that were outside the scope of the intervention, such as time resources or training. However, the fact that professionals were participating in the sessions and were receiving instructions on how to implement the intervention and the fact that, in the end, they would be able to implement the finished version of the intervention would help to reduce the amount of time required to prepare the intervention. Also, the multi-tiered nature of the MMN training program would presumably address the need for greater coordination between professionals.

Second Revision of the MMN Prototype Based on the Pilot Implementation

Based on participants' feedback after the pilot implementation of the first revised version of the prototype, a total of six important changes were made to the design and procedures of the MMN prototype. First, it should be considered that the MMN program was designed in two versions, Tier 1 (universal support) and Tier 3 (intensive support), which addressed the usual intervention services provided, either in a large group for all children or individually for children with language and communication needs. It was clear that the changes to be incorporated following the pilot implementation by teachers and therapists might involve different adjustments to the respective prototypes.

Nonetheless, there were two important changes—both affecting the structure of the intervention sessions—that were applied to both variants of the prototype. First, while the initial design included one 50-min session per story, with a final task within that period involving personal story generation, both teachers and therapists reported that the children undergoing the intervention found it too tiring to cover so many tasks during the same session. For this reason, we decided to add to the program a new session that was exclusively devoted to the generation of personal stories. Second, when we viewed the video recordings of participants implementing the intervention (N = 56 recordings, 15 from teachers and 41 from therapists), we realized not only that professionals use multimodal strategies for enacting the story but that it was natural for them to produce some gestures to represent the story icons. Therefore, we decided to systematically incorporate these naturally produced gestures in the intervention.

Two major changes were applied only to Tier 1 (universal support) of the MMN training program. First, according to the original intervention protocol, the enacted sequential retelling of each story was to be executed using a repetitive structure, such that the teacher first asked and answered the questions herself to provide a linguistic model to the children and then asked the same questions again but this time having the children answer. However, teachers who had piloted the intervention reported that this procedure was unnecessarily repetitive. The protocol was therefore changed to eliminate the first part: In the final protocol, answers to questions would be provided immediately and only by students. By contrast, the original sequence was maintained in the version of the program intended for Tier 3 (intensive support), since the procedure received the full endorsement of the participants who had piloted it. The second change made to only Tier 1 of the program was the integration of a drama-based activity. One of the activities intended to train children in story retelling was to have children retell the story in pairs at the end of each intervention session. However, teachers who had piloted the intervention reported that many children struggled to work in pairs and that it was consequently difficult to manage the activity. For this reason, an entirely new session was added to the intervention program, entirely devoted to a guided dramatization of the story in which children not only retold the story but also enacted it.

Concerning Tier 3, two main changes were effected. First, the enacted sequential retelling activity was carried out over two sessions so that, in the first session, the focus was on the first half of the story, while the second session was devoted to the second half of the story. This addressed a concern expressed by therapists after piloting the protocol that the intervention needed to be more slowly paced to ensure that children were able to identify all the story elements. The second change involved the adoption of the therapists' suggestion to have parents send photos of the child and their families, where the photo would serve as a stimulus for personal story generation. After all the above changes were made to the two variants, therapists and teachers approved the resulting final versions of their respective variants of the MMN intervention program (for a full description of the MMN program in their final form, see Florit-Pons et al., 2025).

Discussion

The current study presented the methodological procedures applied and the results obtained during an iterative participatory process consisting of five sessions that involved a group of 93 teachers and therapists working in the Catalan education and health system and a team of researchers, that is, the three authors of this study. To our knowledge, this study is the first to incorporate input from professionals in the design of a multi-tiered narrative-

based intervention by means of a participatory co-creation process.

The results of this endeavor confirm the value of such co-creation processes for the design of speech-language pathology or educational interventions because they ensure the systematic integration of professionals' needs with research evidence. More specifically, systematic complementary qualitative and quantitative analyses of the professional needs of participants and the feedback they provided allowed us to produce two revised versions of the initial prototype of a narrative intervention program intended. Using implementation science frameworks, such as the EPIS framework (for a review, see Moullin et al., 2019), to guide implementation research from the outset can help bridge the gap between research and practical evidence to develop more effective, sustainable, and impactful interventions. Selecting a guiding implementation science framework a priori might add value by providing a structured approach to planning, executing, and evaluating interventions within real-world contexts.

As a tool to elicit maximally representative consensus views from a group, the NGT model proved its value here, yielding from a set of common concerns and needs between the two groups of professionals, as well as differences. This result is consistent with previous research showing that the practices of professionals dealing with children who have special language needs will vary depending on the context or the professions (Girolamo et al., 2022; Selin et al., 2022). The qualitative and quantitative analyses conducted on the NGT data were interesting, as they displayed differences in the ideas expressed by the group of teachers and the group of therapists. Teachers expressed more ideas related to the "strategies" theme (i.e., the strategies they use in the classroom) and to the diversity of needs that they need to accommodate in the classroom (i.e., "diversity" theme). On the other side, therapists expressed ideas more related to the need to have validated materials and programs to intervene in children's oral narrative skills in their professional context ("materials and programs" theme), as well as ideas related to the "professional concerns" theme (i.e., time restrictions, access to the schools and classrooms, collaboration with other professionals and families). The input from professionals was useful in two ways: It allowed us to identify and correct weaknesses in the design of the MMN intervention and address professionals' differences, but it also reassured us by confirming that, overall, our research-based design had already addressed most of the concerns voiced by the professionals.

Although the EPIS framework was applied retrospectively to interpret and structure the findings, the data generated through the co-creation process could also be compared with other implementation science frameworks. For example, the Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009, 2022) and the GIF-School (Komesidou & Hogan, 2023) frameworks offer complementary perspectives for understanding how contextual, organizational, and individual factors shape the adoption of interventions. For instance, while we chose an inductive analysis to understand the participants' experiences in an exploratory design, the themes that were generated in the qualitative content analysis can be directly linked to some implementation constructs from the CFIR framework (Damschroder et al., 2009; Damschroder et al., 2022). First, the "strategies" theme aligns with the implementation process domain that incorporates the set of strategies and activities that are used to deliver the intervention. The "materials and programs" theme relates to constructs such as available resources and materials and equipment. The "diversity" theme can be related to the inner setting domain, through the recipient-centeredness subconstruct addressing children's needs and welfare. Finally, the "professional concerns" theme aligns with both the outer setting domain (e.g., ideas related to local conditions or financing) and the inner setting domain (e.g., ideas related to work infrastructures or relational connections). In summary, the themes identified reflect core concepts in implementation science. In addition to the CFIR framework, more recently, the GIF-School framework (Komesidou & Hogan, 2023) has been proposed as a school-specific model for guiding implementation processes. However, since our participant pool included school-based professionals and those working in external speech-pathology settings, a framework focused exclusively on school contexts may not be fully applicable across all aspects of the study. Despite this, frameworks such as the CFIR or the GIF-School might offer valuable perspectives through which future studies could frame intervention research.

The final revision of the MMN program was based on input from the professionals after they had piloted part of it. This led to two changes in the protocol that applied to both Tier 1 and Tier 3 variants of the intervention, as well as changes that affected only one or the other. One common change involved the addition of a separate session in the program specifically devoted to training children to generate personal stories; the other involved enriching the protocol by supplementing the multimodal features of the program with gestures that professionals had naturally employed when retelling stories. With regard to changes affecting the Tier 1 and Tier 3 variants, while teachers claimed that the intervention protocol would be improved by having fewer repetitive activities and more engaging ones, such as guided dramatization, therapists were satisfied with degree of repetition and linguistic modeling for children with difficulties prescribed in

the protocol, as it was consistent with the needs of children with special language and communication needs. These changes significantly enhanced the final design of the MMN training program, although the key research-based educational strategies remained intact, having proved their worth in real-life professional practice.

The process of co-creation exemplified here is in consonance with recent guidelines for successful participatory research and implementation science (e.g., Brett et al., 2014; Clemensen et al., 2017; Feuerstein et al., 2018; Gallagher et al., 2023; Komesidou & Hogan, 2023; Moullin et al., 2019; Olswang & Prelock, 2015; Peters et al., 2013). As Boaz et al. (2018) suggest, there is a need to incorporate engagement within the research production framework so that the gap between research production and actual research use is narrowed. This is crucial, given the fact that an intervention can be designed on a robust theoretical foundation yet turn out to be inappropriate or unfeasible for a specific context. The study presented in this article aligns with the initial stages of the implementation science process—specifically, the design, development, and pre-implementation of the intervention program—which lay the groundwork for subsequent phases involving small-scale and large-scale implementations; broader scale-up; and, ultimately, long-term sustainability.

One aspect of the co-creation process that particularly caught our attention was the positive attitude toward it by the participating professionals. For most of them, this was the first time that they were able to actively engage in a research project, and they reported being highly motivated by the fact that this intervention was intended to address their professional needs. Nevertheless, this cross-disciplinary collaboration did entail certain challenges, something that has already been found in existing research (e.g., Brett et al., 2014; Gallagher et al., 2023). First, as Brett et al. (2014) mention, the goals and perspectives of researchers and practitioners do not always coincide. This was apparent in this study when, for example, differences arose regarding the use of certain scientifically validated educational strategies. For instance, the use of wordless animated cartoons was initially surprising for some participants, who had only used voiced cartoons in their professional practice. The fact that, in the MMN intervention, children are first exposed to cartoons was a deliberate choice derived from our belief that children would benefit from being exposed to the story without having the burden of coping with a linguistic element. Another focus of diverging views was the use of the question-and-answer sequence during retelling activities. Several participants balked at this technique because they felt it was important to produce a full narrative from the beginning. Discussion with peers and researchers, however, helped them realize that such question-and-answer techniques facilitated children's digesting of the story content and structure and the interactive element heightened their engagement in the activity. Finally, it should probably be noted the online modality of the group sessions may have had an impact on the participatory process: For some participants, being seated in front of a computer screen was not conducive to acting out stories or simulating their performance in the intervention session. These challenges notwithstanding, on balance, the co-creation process was regarded as positive and beneficial by both professionals and researchers.

The outcome of this process was the multi-tiered MMN educational intervention program in Catalan. That program has since been subjected to a feasibility study as well as an additional small-scale pilot implementation (the results of both are reported in Florit-Pons et al., 2025), aligning with the *preparation* and *implementation* phases of the EPIS framework (e.g., Moullin et al., 2019). We believe that having initiated the design of MMN in a participatory fashion helped ensure positive results in these subsequent studies.

Some limitations need to be acknowledged in this study. First, we collected information regarding professionals' professions and employing institutions, but no further details were obtained, such as educational background or years of professional experience. This information could have been relevant to assess variability among professionals within each group of teachers and therapists. Second, the qualitative content analysis conducted after the NGT session was carried out by the first and third authors. Although the two authors had collaborative discussions to reach a consensualized coding process and trustworthy analysis, the absence of an independent coder limited the possibility to conduct interrater reliability analyses or to externally validate the thematic interpretations derived from the NGT data. A final limitation of this study is that the design of the MMN intervention was not fully multi-tiered, as it lacked a Tier 2 instruction through a targeted intervention in small groups with specific needs. Future research could focus on the co-creation and evaluation of this additional tier to fully develop a multi-tiered intervention. Regarding further methodological applications, future research should consider mixed-methods analysis by contrasting quantitative survey results with qualitative interviews, as well as a stronger participatory research approach in which professionals are constantly involved in the research process. Additionally, while this study retrospectively aligned with the EPIS framework to interpret and structure the implementation process, the framework was not used a priori to guide the research design. Future studies would benefit from using an implementation science framework from the beginning, as this could help guide the planning

and better address challenges that come up during the research process.

In summary, the results presented in this study highlight the importance of participatory research in the development and implementation of novel research-based educational interventions, particularly in the early stages of design (e.g., Gallagher et al., 2023). Ensuring that the perspectives of both teachers and therapists are considered is of high relevance in the educational practice, provided that both groups are in charge of the delivery of multi-tiered interventions at schools. Our study further contributes to current implementation science by emphasizing the importance of bridging the gap between research evidence-based intervention design and real educational and clinical practice (e.g., Brett et al., 2014; Dollaghan, 2007; O'Cathain et al., 2019). In our view, adopting participatory research guidelines from the start has the potential to make multi-tiered interventions more impactful, as they will add value not only to the body of research but also to the real working world of practitioners and end users.

Ethics Statement

This study was approved by the Institutional Committee for Ethical Review of Projects at Universitat Pompeu Fabra (Ref.: 228), as well as by the Ethics Committee at the Regional Ministry of Education, Catalan Government.

Data Availability Statement

The data that support the findings of this study are openly available in Open Science Framework at https://osf.io/cykuz/.

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Appendix A

Definition of Categories Extracted From the Qualitative Content Analysis With a Mapping to the Group in Which They Appeared

Category	Definition	Teachers	Therapists
Access to classrooms	Possibility of accessing classrooms to implement interventions.		X
Child involvement	Ensuring that the child is involved (in terms of attention and motivation) at group and individual levels.	X	X
Coordination	Coordination and joint actions with other teachers.	X	
Coordination among adults	Coordination with other professionals and families present in the child's natural context.		X
Discourse about personal stories	Promotion of oral discursive abilities to promote generation and retelling of personal stories.	X	
Diversity of oral needs	Attention to children's needs with respect to different oral linguistic abilities.	X	X
Evaluation	Evaluation actions to identify the child's needs and learning.		X
Generalization	Generalization of learning achieved to natural social contexts for the child, such as at school with classmates, families and teachers.		X
Linguistic modeling	Provision of positive models for children using linguistic and/or multimodal (gesture, prosody) strategies.	X	X
Manipulable materials	The use of manipulable materials to represent the story, such as objects or puppets, or symbolic play.		X
Material resources	Access to material resources that are innovative, audiovisual and shared among professionals.	X	X
Oral discourse during structured activities	Promotion of oral abilities during structured activities in the classroom context.	X	
Oral interaction	Set of activities in pairs or groups aimed at promoting oral interaction.	X	X
Participation from families	Active participation of the families to coordinate with professionals and to share objectives and intervention guidelines.		X
Participation from professionals at schools	Participation from professionals at schools (i.e., teachers, tutors, language specialists) at different levels: intervention sessions, training and awareness.		X
Personalization	Actions to generate information about children involving evaluation and intervention actions.	X	X
Enactment	Enactment of fictional or personal stories.		X
Resources in Catalan and Spanish	Materials adapted to Catalan and Spanish		X
Socioemotional abilities	Use of different abilities involving emotions, empathy and social communication.	X	X
Specialist resources	Participation and action from language specialists.	X	
Structured and contextualized programs	Use of structured intervention programs that contain clearly defined objectives to boost oral linguistic abilities.	X	X
Time resources	More time for professionals.	X	X
Training	More training for professionals.	X	
Use of storybooks	Use of storybooks during interactions with the teacher, therapist, or at home.	X	X
Visual materials	Use of resources that act as visual support material, either animated or static, with or without iconographic content, such as images, pictograms, short films and so on.		X

Appendix B

Definition of the Themes Extracted From the Qualitative Content Analysis and the List of Categories Included Within Each Theme

Theme	Definition	Categories included in the theme
Strategies to promote oral linguistic abilities	Strategies for training and promoting oral narrative and socioemotional skills in different contexts and discourses: interactions among children and with the teacher (who in turn provides a high-quality oral language model), oral interactions within structured activities, oral interactions through personal stories	• Discourse about personal stories • Linguistic modeling • Manipulable materials • Oral discourse during structured activities • Oral interaction • Enactment • Socioemotional abilities • Visual materials
Materials and programs to train oral narration	Access to materials that are structured and defined to work on oral narration and that are engaging for children.	• Generalization • Material resources • Resources in Catalan and Spanish • Structured and contextualized programs • Use of storybooks
Diversity among children must be accommodated	The child is the center of attention, so his/her needs are assessed and attended to, and activities are personalized to address these needs and to engage and motivate the child.	• Child involvement • Diversity of oral needs • Evaluation • Personalization
Professional concerns related to resources and working conditions	Support and coordination with colleagues and other professionals. Support and resources so that professionals can be trained and prepare interventions.	• Access to classrooms • Coordination • Coordination among adults • Participation from families • Participation from professionals at schools • Specialist resources • Time resources • Training