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DIGITAL SOCIAL STORIES IN THE SOCIAL-EMOTIONAL DEVELOPMENT OF CHILDREN WITH AUTISM SPECTRUM DISORDER: AN ACADEMIC HANDBOOK

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INTRODUCTION

This handbook was developed within the Erasmus+ project EARLY-ASD: *"Upskilling Preservice Teachers to Support Young Children with Autism Spectrum Disorder through Digital Social Stories"* (Project No. 2024-1-PL01-KA220-HED-000246304). The publication is the result of collaboration among the project partners, and its primary aim is to support innovative, inclusive, and digitally enhanced practices in teacher education, focusing on the development of competencies necessary for working with children with Autism Spectrum Disorder (ASD) in diverse educational contexts.

The handbook has a scientific and pedagogical character and is intended to support both preservice and in-service teachers in designing, implementing, and evaluating Digital Social Stories (DSS) for children with ASD.

The publication is primarily addressed to teacher education students, preschool and primary school teachers, special education teachers, and university educators.

From a theoretical perspective, the handbook presents the theoretical and empirical foundations of social stories, with particular emphasis on the social-emotional development of children with ASD and the principles for designing effective Digital Social Stories (DSS), including narrative structure, the use of visual supports, and the adaptation of content to individual learner needs.

From a practical perspective, the handbook focuses on developing competencies in analysing learners' needs in relation to social-emotional difficulties, designing and implementing Digital Social Stories aligned with educational objectives, integrating multimedia elements into educational practice, and planning their implementation and evaluation.

An important component of the handbook is reflective educational practice, including the evaluation and modification of DSS based on observed educational outcomes and contextual needs, as well as the application of ethical principles in the design and use of digital tools within inclusive education.

Beyond its instructional function, the handbook also serves as a source of knowledge for individuals interested in inclusive, evidence-based, and digitally supported pedagogical practices aimed at fostering children's social-emotional development, particularly that of children with ASD.

Digital Social Stories (DSS) in Educational Practice

Digital Social Stories (DSS) represent a structured, visually supported, and pedagogically grounded educational approach aimed at fostering social understanding, emotional regulation, and adaptive behaviours among children with Autism Spectrum Disorder (ASD). DSS originate from the traditional Social Stories developed by Carol Gray in the 1990s. Traditional Social Stories are a narrative intervention designed to support children and adolescents with ASD in understanding social situations, expectations, and the perspectives of others. Their purpose is to provide structured and descriptive explanations of social contexts while taking into account the viewpoints of interaction participants and avoiding direct behavioural correction.

DSS extend this concept through the use of multimedia and technology-enhanced formats. Grounded in social learning theory and evidence-based educational practice, they employ personalised narratives that help children anticipate social situations, interpret contextual cues, and develop appropriate responses in everyday educational and social environments. By providing predictability and clear cognitive and contextual scaffolding, DSS promote autonomy, participation, and inclusive engagement in preschool and early primary education.

The integration of digital technologies into educational practice has significantly expanded the possibilities for using Social Stories, transforming them into multimedia-based educational tools. DSS can combine images, audio narration, and interactive elements, thereby enhancing accessibility, engagement, and instructional effectiveness. While remaining aligned with pedagogical goals and children's developmental needs, digital formats preserve the essential characteristics of traditional Social Stories while increasing their flexibility, inclusiveness, and relevance to contemporary educational settings.

Structure and Rationale of the Handbook

The handbook is based on a coherent instructional framework that integrates theoretical foundations, methodological principles, the design of Digital Social Stories (DSS), their application in educational practice, monitoring, and reflection. Its structure has been intentionally aligned with clearly defined learning outcomes, reflective practice, and objectives focused on the development of knowledge, skills, and professional judgement, ensuring that readers not only acquire knowledge but also develop the competencies necessary for the responsible use of DSS when working with children with Autism Spectrum Disorder (ASD).

The handbook consists of six chapters that form a progressive learning pathway: from understanding the development and social-emotional functioning of children with ASD, through the design and creation of Digital Social Stories, to their implementation, evaluation, and reflective professional development. This sequence supports cumulative learning by enabling the integration of theory with practice and evidence-based intervention strategies.

Each chapter includes:

- Chapter introduction – providing a concise overview of its main assumptions, objectives, and relevance to educational practice;
- Chapter objectives – clearly defining the intended knowledge, skills, and professional judgement outcomes;
- Reflective questions – supporting the integration of theory and practice and fostering the development of professional judgement.

The handbook begins with an analysis of the functioning of children with Autism Spectrum Disorder (ASD) in the context of their social-emotional development. The first chapter presents developmental characteristics, social-emotional profiles, and typical communication patterns of children with ASD, situating Digital Social Stories (DSS) within preschool and early primary education. It highlights their significance for planning learning objectives, designing classroom strategies, and implementing inclusive educational practices.

The second chapter presents the theoretical and methodological foundations of Social Stories. It defines Social Stories, their key elements, and their evidence base, while also discussing the principles underlying their development and application in educational settings. Particular attention is devoted to the transition from traditional narrative formats to digital solutions, highlighting the pedagogical benefits of multimedia narratives, especially in enhancing learner engagement, understanding, and accessibility.

The third chapter focuses on the design of Digital Social Stories, including the selection of multimedia formats, digital platforms, and technological tools. It provides guidance on integrating narrative elements supported by video, images, animation, interactive features, and artificial intelligence-based tools. The chapter also introduces design principles aimed at maximising cognitive accessibility, learner engagement, and instructional coherence.

The fourth chapter is devoted to the implementation of Digital Social Stories in educational practice. It discusses strategies for integrating DSS into everyday teaching and learning activities, including the selection of topics aligned with social-emotional objectives, collaboration with families and caregivers, and the promotion of sustainable and inclusive educational practices. The chapter emphasises that DSS should form part of a comprehensive and context-sensitive pedagogical approach rather than function as isolated interventions.

The fifth chapter introduces approaches to evaluating the effectiveness of Digital Social Stories. It presents structured observation tools, checklists, and peer-review instruments designed to monitor implementation outcomes. The chapter emphasises the importance of evidence-based practice, systematic data collection, and professional reflection as foundations for adapting educational interventions and making informed pedagogical decisions.

The sixth and final chapter synthesises the preceding content within a practical implementation framework. It presents a cyclical model encompassing planning, design, implementation, monitoring, reflection, and adaptation, supported by structured templates, case-based examples, and inclusive pedagogy strategies. The chapter highlights the importance of developing professional judgement, adapting practices to

educational contexts, and engaging in the continuous improvement of teaching and learning.

The handbook has been additionally supplemented with the section “Quick Start Guide”, which serves as an accessible introduction for readers. It provides an overview of Digital Social Stories (DSS), step-by-step guidance for their implementation, an outline of the structure of the handbook, key principles of effective DSS practice, the main message, and guidance on using digital resources. This section is designed to enable rapid orientation in the principles of DSS and to support initial preparation for their practical application before the reader proceeds to the more detailed content of the individual chapters.

In addition to its core content, the handbook includes several appendices that provide practical tools and supplementary materials for educational practice:

- Appendix 1 – Sample Digital Social Stories;
- Appendix 2 – Description of the pilot core course (28 hours);
- Appendix 3 – Micro-credential certificate template;
- Appendix 4 – Evaluation tools for Chapter 5, including observation sheets, usability and accessibility tools, and peer-review forms;
- Appendix 5 – Guidelines for using reflective questions to support critical thinking, professional reasoning, and reflection on the planning, evaluation, and adaptation of Social Stories in classroom practice;
- Appendix 6 – Consolidated framework for micro-credential implementation and quality assurance, ensuring consistency in course delivery, evaluation procedures, and certification standards across partner institutions;
- Appendix 7 – Worksheets for participant tasks supporting practical application of Digital Social Stories, including case study analysis and reflective success story development.

The handbook concludes with a synthesis of the main conceptual, methodological, and practical insights presented throughout the volume, highlighting the overarching contribution of Digital Social Stories to inclusive and digitally supported education and outlining future directions for practice, research, and professional development.

The final section of the book consists of the References, presenting a comprehensive list of scholarly sources underpinning the theoretical and methodological framework of the handbook.

Significance and Practical Application of the Handbook

The handbook is an academic and pedagogical publication grounded in current knowledge as well as contemporary research and educational practice. It does not serve solely as a reference work, but also as an educational resource for higher education institutions, supporting the development of professional competencies in the field of special education and inclusive education.

It supports diverse academic learning pathways, including both a comprehensive 60-hour higher education programme and a 28-hour pilot micro-credential course. Both pathways are aligned with Level 6 descriptors of the European Qualifications Framework (EQF) and are based on a learning outcomes approach, ensuring coherence between knowledge, skills, and practical competencies in an academic context.

The handbook supports preservice teachers, early childhood and primary education teachers, and special education teachers in developing the competencies necessary for designing, implementing, and evaluating Digital Social Stories.

The publication promotes:

- evidence-based practice,
- reflective and inclusive pedagogical approaches,
- the development of professional judgement and competencies in digital intervention strategies,
- the integration of theoretical knowledge with educational practice.

Through working with the handbook, readers are able to:

- understand the social-emotional development of children with ASD,
- design Digital Social Stories (DSS),
- use multimedia tools in educational practice,
- implement DSS in educational settings,

- monitor and adapt intervention practices,
- apply ethical and inclusive principles in teaching practice.

The handbook functions as a didactic guide in higher education, integrating theoretical, methodological, and practical perspectives. It enables the connection of conceptual understanding with its application in educational practice within academic courses.

QUICK START GUIDE

Overview of Digital Social Stories

This Quick Start Guide provides a structured and practical entry point into the use of Digital Social Stories (DSS) in educational practice. It is intended to support preservice teachers, early childhood teachers, and practitioners in initiating and developing their work with DSS in a clear, manageable, and pedagogically grounded way.

Digital Social Stories are an evidence-informed approach supporting the social-emotional development and well-being of children with Autism Spectrum Disorder (ASD). Through structured, personalised, and visually supported narratives, DSS help children:

- understand social situations
- anticipate expectations
- regulate emotions
- participate more confidently in everyday interactions

In line with the approach presented in this handbook, DSS are not single-use tools but part of a cyclical and reflective pedagogical process, involving: planning → design → implementation → observation → reflection → adaptation.

Step-by-Step Implementation of Digital Social Stories

This guide introduces these core steps in a simplified and practice-oriented way.

Step 1: Identify the focus and objective

Begin by identifying a specific social-emotional situation or skill that is meaningful for the child's daily functioning and participation.

Examples include:

- waiting for a turn
- asking for help
- coping with changes in routine
- initiating or joining peer interaction

When defining the objective, consider three interrelated dimensions of well-being:

- emotional (e.g. feeling safe, managing anxiety)

- social (e.g. interaction, belonging, participation)
- educational/functional (e.g. engagement in classroom activities)

Effective DSS focus on one clearly defined situation or behaviour at a time, allowing for targeted support and observable progress.

Step 2: Select an appropriate story format

Choose a format that aligns with your experience, available resources, and the child's needs:

- photo-based stories (recommended for beginners and highly concrete learners)
- illustrated stories (useful for generalisation and abstraction)
- video-based or multimedia stories (increasing engagement and interactivity)

At the initial stage, prioritise simplicity, clarity, and accessibility over technological complexity.

Step 3: Design a meaningful and structured story

When developing a Digital Social Story:

- use clear, concise, and concrete language
- describe the situation, relevant social cues, and expected behaviours
- include perspective sentences (what others may think or feel) where appropriate
- maintain a supportive, respectful, and non-judgemental tone
- integrate visual elements that are meaningful and not cognitively overwhelming

The story should support:

- predictability (what will happen)
- understanding (why it happens)
- guided response (what the child can do)

Design principles, templates, and tools are presented in Chapter 3 and Appendix 1.

Step 4: Introduce and embed the story in context

Effective DSS use depends on how the story is introduced and integrated into everyday practice:

- present the story before the situation occurs
- engage the child through shared reading, viewing, or interaction
- repeat regularly to reinforce understanding

- embed the story within daily routines and natural contexts

Where possible involve parents or caregivers. Consistency and contextual relevance are key factors in supporting learning and behavioural change.
DSS are most effective when embedded within a broader inclusive and relational educational approach, rather than used as isolated interventions.

Step 5: Observe, document, and adjust

Systematic observation is essential, Monitor how the child responds to the story:

- observe engagement, understanding, and behavioural changes
- use structured tools such as checklists and observation forms (see **Chapter 5**)
- identify what works and what requires adjustment

Ask:

- Is the child engaging with the story?
- Is there observable change in behaviour or participation?

If needed:

- simplify the story
- adjust visuals or language
- change timing or context of use

DSS should be treated as **adaptive tools**, continuously refined based on the child's responses and developmental progress.

Step 6: Engage in reflective practice

Reflection supports professional learning and effective decision-making. Reflection is an integral part of effective DSS implementation. Consider:

- To what extent did the story support understanding?
- Did it enhance emotional comfort or participation?
- What worked well, and what could be improved?

Use:

- reflection questions (in each chapter)
- peer discussion
- collaborative review

Reflection connects practice with evidence-informed pedagogy. It supports professional learning, pedagogical decision-making, and evidence-informed practice.

Step 7: Extend and develop practice

As confidence and experience grow:

- experiment with different story formats and tools
- adapt stories to new situations and contexts
- collaborate with colleagues, parents, and specialists
- integrate DSS into broader inclusive and developmental strategies

At this stage, DSS become part of a broader system of support, contributing to inclusive education and child well-being. Advanced applications and cyclical models of practice are presented in Chapter 6.

Navigating the handbook

This Quick Start Guide serves as a starting point for working with the handbook and provides an introduction to its full structure. To deepen understanding and proceed to the subsequent thematic areas, the following chapters should be consulted:

- Chapter 1 – understanding ASD and social-emotional development
- Chapter 2 – theoretical and methodological foundations of Social Stories
- Chapter 3 – design principles, technologies, and tools
- Chapter 4 – classroom implementation strategies
- Chapter 5 – evaluation and monitoring tools
- Chapter 6 – reflective models and professional development

Core principles of effective DSS practice

- Focused and purposeful (one objective at a time)
- Clear, structured, and accessible
- Context-sensitive and individualised
- Embedded in everyday educational practice
- Continuously observed, evaluated, and adapted

Key message

Digital Social Stories are most effective when they are not treated as isolated tools, but as part of a **broader, reflective, and inclusive pedagogical approach** that supports children's participation, understanding, and well-being in educational environments.

Navigating digital resources

This handbook is accompanied by a set of digital resources designed to support the practical implementation of Digital Social Stories (DSS) in educational settings. All materials are accessible via the EARLY-ASD project platform: https://earlyasd.eu/web/

The resources are organised into three main thematic areas to support a structured learning progression from introductory understanding, through methodological tools, to practical application and project outputs.

1. Quick Start Resources

Introductory materials, examples, and templates supporting initial familiarisation with Digital Social Stories.

This section includes:

• introductory guidance on DSS implementation

• practical examples and templates

• access to the project handbook and core materials

2. Tools and Platforms

A collection of recommended digital tools for designing and developing Digital Social Stories.

This section supports:

• creation of multimedia-based social stories

• selection of appropriate authoring tools

• pedagogical and technical implementation

3. Digital Social Stories (Project Outputs)

A repository of sample Digital Social Stories developed within the EARLY-ASD project.

This section provides:

- examples of applied practice
- models of DSS implementation in educational contexts
- reference materials for classroom adaptation

CHAPTER 1. CHILDREN WITH ASD AND SOCIAL-EMOTIONAL DEVELOPMENT

Chapter Overview

Social-emotional development plays a central role in young children's participation in everyday social situations, including interactions with peers, communication with adults, and engagement in learning environments. For children with Autism Spectrum Disorder (ASD), this area of development may follow a different trajectory, which can influence how they perceive social cues, regulate emotions, and respond to everyday social expectations.

Autism is not “bad behavior,” but rather a distinct neurodevelopmental profile that influences the understanding of social situations, emotional regulation, tolerance of sensory stimuli, and executive functions (e.g., cognitive flexibility and response inhibition) (APA, 2022). Because the causes of behaviors in children on the spectrum are often less immediately visible, and communication differences may make it more difficult for them to clearly explain their reactions, these behaviors are sometimes misinterpreted as “spitefulness,” “laziness,” or “lack of motivation.”

Developing an accurate understanding of the behavior of children with ASD therefore constitutes a crucial foundation for creating appropriate and effective social stories. Such understanding can later support several important steps in practice: (a) selecting the topic and goal of a social story, (b) designing digital social stories, (c) implementing social stories in practice, and (d) evaluating their effectiveness.

Aims of the Chapter

The aims of this chapter are:

- To understand the conditions of social-emotional development in children with ASD and their potential difficulties, including in social communication, increased reactivity and/or problems with emotional modulation, and rigid patterns of behavior (APA, 2022; Mazefsky et al., 2013).
- To develop the ability to initially identify the dominant source of difficulty in social-communication problems, emotional-regulatory problems, sensory issues, or

difficulties related to executive functions, and to understand that each of these pathways requires a different goal and different types of support (Demetriou et al., 2018; Robertson & Baron-Cohen, 2017).

- To develop the ability to select the goal of a social story so that it is specific, observable, and measurable, and to understand that the effectiveness of the applied method depends, among other factors, on the precision with which the goal is formulated (Kokina & Kern, 2010).
- To develop the ability to identify "traps" in the educational environment (including overload [sensory or social], masking, peer violence/bullying, and misinterpretation of behaviors) and to recognize warning signals so that the goal of the intervention is appropriately aimed either at developing skills or at modifying the environment (Halsall et al., 2021; Hull et al., 2017; Sreckovic et al., 2014).

1.1. Foundations of Autism Spectrum Disorder

Contemporary approaches increasingly describe ASD as a form of neurodiversity—an alternative profile of brain development and functioning that involves both real difficulties and potential strengths (Kapp et al., 2013; den Houting, 2019; Pellicano & den Houting, 2022). The concept of neurodiversity does not deny the need for support; rather, it shifts the focus away from attempts to "fix" the child or eliminate all autistic traits, and toward adapting the environment and teaching appropriate coping strategies.

In the educational setting, this translates into practical questions:

- What helps the child understand social situations? (e.g., clear rules, concreteness, behavioral models, visual supports).
- What overloads the child? (e.g., noise, chaos, rapid changes, ambiguity, communicative demands).
- What are the child's strengths? (traits or skills that can be used in educational or motivational contexts) (Lai et al., 2014; Baron-Cohen et al., 2009).

From a diagnostic perspective, the autism spectrum is based on the co-occurrence of two groups of characteristics: (1) persistent difficulties in social communication and social interaction, and (2) restricted and repetitive patterns of behavior, interests, or activities, with atypical sensory reactivity explicitly included in the second group in the DSM-5-TR (APA, 2022).

Understanding these two areas often brings clarity to what is observed in children's everyday behavior: on the one hand, how the child understands and conducts interaction, and on the other, how the child copes with overload, change, and unpredictability (Hirota & King, 2023; Lord et al., 2018).

Social-communication difficulties in ASD are not limited to the question of speech. A child may speak fluently, use rich vocabulary, and have correct grammar, and still experience significant problems in social communication, because the core difficulty often lies in pragmatics—that is, how language functions in relationships: recognizing intentions, adjusting utterances to the situation and the listener, turn-taking, understanding implicatures, jokes, or indirect messages (Tager-Flusberg & Caronna, 2007).

In educational settings, this results in seemingly paradoxical phenomena, for example: the child answers correctly in a calm one-to-one conversation but loses track of meaning in a fast-paced group discussion; understands the words but not the function of the utterance (e.g., whether it was an informational question, a joke, irony, or a reprimand); reacts literally because it is harder to integrate content with tone and context (American Psychiatric Association, 2022; Matthews et al., 2018). Pragmatics of language is often a tool that supports regulation—when language in social use "does not work," the child is more likely to move from tension directly to behavior (withdrawal, anger, escape), rather than defusing the situation through conversation (Tager-Flusberg & Caronna, 2007; Matthews et al., 2018).

Social-communication difficulties also concern problems in social-emotional reciprocity. This means that interaction may resemble less a smooth "exchange" and more a sequence of parallel actions. The child may initiate contact spontaneously less often than peers, have more difficulty maintaining turn-taking and responding flexibly to what the other person contributes (e.g., changes of topic, signals of boredom or embarrassment), and sharing attention and affect may be less clear or occur only in specific situations (APA, 2022). At the same time, this is not equivalent to a "lack of desire" or a "lack of attachment." Children on the spectrum often need social relationships and interaction; however, understanding the rules of interaction, the unspoken norms, and adapting to them may require considerable effort (Cresswell et al., 2019; Cook et al., 2021). Social

signals are less intuitive, processed more slowly, or involve a higher regulatory cost, especially under conditions of stress and overload (Hirota & King, 2023; Lord et al., 2018).

The described difficulties in communication and social interaction are an outcome of social learning; therefore, the characteristics of the environment in which the child develops are crucial, and that environment can also constitute the basis for building these skills. It is not without reason that diagnostic classifications emphasize whether the child's deficits appeared despite many opportunities to acquire the relevant skills in development (APA, 2022). Differentiating an ASD diagnosis or identifying possible co-occurring disorders is therefore important in order to take these aspects into account in the helping process (Odachowska-Rogalska et al., 2025).

In the domain of social relationships in ASD, the key difficulties usually concern not the mere presence of contacts, but the quality and "mechanics" of relationships: adjusting behavior to context (e.g., different rules during recess, different in class), understanding unwritten group norms, and maintaining peer relationships in situations where rules change quickly and require negotiation. This can lead the child to experience more frequent misunderstandings, withdraw from contact, or seek relationships in more predictable forms (e.g., around shared interests), despite a real need for belonging (APA, 2022; Lord et al., 2018). In practice, this also means greater sensitivity to group pressure and a higher risk of secondary consequences (e.g., increased anxiety) when the environment does not provide clear structure and protection from social overload (Hirota & King, 2023).

The second pillar, rigidity/repetitiveness and restricted interests, most often manifests as a strong need for predictability and difficulty with changing plans, as well as repetitive behaviors that serve a self-regulatory function (APA, 2022; Lord et al., 2018). Adults often describe this as "stubbornness," but in practice it is frequently a strategy for reducing chaos: a fixed sequence of events and clear rules lower uncertainty, which in many children on the spectrum quickly escalates into high arousal. This is why changes in activities or ambiguous instructions are typical trigger points—not because the student "doesn't want to," but because the cost of adaptation is high and rises rapidly with increasing load (Hirota & King, 2023; Lord et al., 2018).

Part of the mechanisms explaining overload in the school environment is atypical sensory processing. The review by Robertson and Baron-Cohen (2017) shows that atypical sensory processing is an important part of the autism phenotype and can influence the child's behavior in many domains. In practice, this means that noise and crowding, intense lighting, smells, physical contact in a crowd, or the "stimulus chaos" during group work can raise arousal to the point at which the child loses access to fluent communication, flexibility, and inhibition, which the environment may interpret as challenging behavior, withdrawal, or escalation (Robertson & Baron-Cohen, 2017; APA, 2022). Therefore, if the goal is to support social-emotional development, it is worth asking in parallel:

1. whether the student understands the social logic of the situation and others' intentions, and
2. whether the environment and change have exceeded the student's tolerance threshold, because these two mechanisms almost always interact (Lord et al., 2018; Hirota & King, 2023).

For many students, the picture of social-emotional functioning results from the overlap of autistic traits and additional developmental or emotional difficulties. Population studies show that co-occurring mental health and developmental problems are common in children on the spectrum, and their configurations differ between individuals (Simonoff et al., 2008). One of the most frequent and most behaviorally influential difficulties is anxiety. A meta-analysis by van Steensel and colleagues indicates that a substantial proportion of children and adolescents on the spectrum meet criteria for at least one anxiety disorder, with a diverse anxiety profile (van Steensel et al., 2011). Anxiety in ASD does not always manifest in typical ways; it often takes the form of avoidance (e.g., silence, "disappearing" to the side), getting stuck at a certain stage of a task or activity, outbursts, strong perfectionism, or somatic complaints (Kerns et al., 2014).

Another common co-occurrence concerns difficulties with attention and impulsivity (an ADHD profile). Meta-analyses indicate that some individuals with ASD also meet criteria for ADHD (Rong et al., 2021). This can significantly change the picture of social-emotional difficulties. It means that the same social intervention (e.g., "wait for your turn") may not work if it is not accompanied by micro-executive strategies (short steps, clear start/stop signals, predictable structure, choice options), because the problem is

often not the intention itself, but real-time response control. Other frequent co-occurring difficulties with ASD include, among others, depression and eating disorders.

Executive functions are a set of cognitive processes that enable control of behavior in situations requiring inhibition of impulses, maintenance of information in working memory, planning, and switching between tasks (Diamond, 2013). In ASD, research consistently points to general, moderate difficulties in this area, although individual profiles vary (Demetriou et al., 2018; Hill, 2004). In children with ASD, we may observe difficulties in:

- Working memory – for example, the child struggles with multi-step instructions, "drifts away" halfway through a task, or sticks to one step because they cannot keep the whole sequence in mind. This may look like lack of cooperation, although in reality it is cognitive overload (Diamond, 2013).
- Inhibitory control – difficulty stopping an action, waiting for one's turn, not interrupting, or not reacting immediately in conflict. As arousal increases, inhibition difficulties may intensify (Diamond, 2013).
- Switching / cognitive flexibility – changing plans, changing game rules, or a sudden transition from activity A to B can generate resistance or strong emotional reactions (Lage et al., 2024).
- Planning and monitoring – in group work, the child may not be able to independently break a task into steps, evaluate progress, or change strategy, which can lead to either chaotic action or excessive control.

When executive functions are heavily loaded, routines and fixed rules reduce cognitive cost. The "stubbornness" observed by adults is therefore often an attempt to maintain predictability and control in a situation that feels chaotic, too fast, or ambiguous to the child. In the literature, this is described as a practical manifestation of difficulties in flexibility and in initiating/switching actions (Hill, 2004; Demetriou et al., 2018). This can translate into peer conflicts. In peer relationships, many rules are "unwritten" and change quickly. This places high demands on executive functions as well as social skills. In play, rules are negotiated and change dynamically; conflicts require simultaneous inhibition of reactions, holding the other person's perspective in mind, and changing strategy; cooperation with a group often requires rapid interpretation of the situation and rapid adaptation.

Difficulties in sensory processing often act as a hidden trigger of behavior—they are not easily noticeable, but they significantly increase arousal. In DSM-5, sensory sensitivity was explicitly included in the ASD criteria as hyper- or hyporeactivity to sensory input and unusual interest in sensory aspects of the environment (APA, 2022). Noise, smells, strong light, crowding, accidental touch, or the need to simultaneously listen and filter social stimuli can lead to rapid overload. In the case of hyporeactivity, the child may strongly seek a particular type of sensory stimulation. The review by Robertson and Baron-Cohen (2017) emphasizes that differences in sensory processing are a core component of autism and can affect other domains of functioning, including behavior and social responses.

Among possible sensory processing difficulties, problems with interoception are also mentioned – the ability to notice and interpret signals from inside the body (e.g., muscle tension, accelerated heartbeat, a "tight" feeling in the stomach), which in typical development help to recognize rising emotions and to activate self-regulation strategies early. If interoception is weakened, the child may not notice for a long time that arousal is increasing—until a sudden breakdown of control occurs.

Research suggests that interoceptive difficulties may occur in ASD (especially in childhood), which can translate into poorer recognition of emotional states and delayed regulatory responses (Nicholson et al., 2019; Klein et al., 2025).

Myths about ASD vs. Reality

MYTH 1: "A child on the spectrum has no empathy."

Reality: Empathy has different components (including, among others, perspective-taking vs. emotional sharing, and the accurate interpretation of information arising from experienced emotional states). The difficulties of children on the spectrum most often concern understanding another person's perspective. Some people on the spectrum are described by their close ones as "exceptionally empathetic" – strongly sharing others' emotions, deeply concerned about other people's situations, and having a highly developed desire to help. However, they often lack a full and adequate understanding of the situation, the emotional context of the other person, and that person's perspective and needs. Additionally, the concept of the so-called "double empathy problem" is important – it assumes that misunderstanding is bidirectional: neurotypical people have difficulty

understanding neurodivergent people, and vice versa (Bird & Viding, 2014; Milton, 2012).

MYTH 2: "They don't want to have friends."

Reality: Many autistic children experience loneliness and want relationships, but find it harder to create and maintain them (Bauminger & Kasari, 2000; Cresswell et al., 2019).

MYTH 3: "They are manipulating / doing it out of spite."

Reality: This is often a reaction to overload (sensory, social, or cognitive) or to anxiety. Behavior is a message about the state of regulation, not a "strategy of dominance." Instead of asking about the purpose of the behavior, it is more helpful to focus on its cause (Robertson & Baron-Cohen, 2017; van Steensel et al., 2011).

MYTH 4: "If they speak well and have knowledge, they do not need support."

Reality: A wide vocabulary and fluent speech are not equivalent to adequate comprehension of messages or flexibility in real interactions. Difficulties may not be noticeable "at first glance," may be masked, or may only become visible in a group, in conflict, or under time pressure (Tager-Flusberg & Caronna, 2007; Boucher, 2012).

MYTH 5: "You just need to quickly 'get them used to' change and the problem will be solved."

Reality: Flexibility can be developed, but not by throwing someone into the deep end. Without predictability and support, anxiety increases and self-regulation decreases (APA, 2022; van Steensel et al., 2011).

1.2. Typical Social-Communication Development

Social-emotional development between the ages of 3 and 7 largely concerns whether a child is able to communicate adequately in social situations, for example: to engage in turn-taking exchanges, read intentions, notice emotions, negotiate the rules of play, and ask for help in an acceptable way. Social communication is a complex competence resulting from the interaction of language, social understanding, emotional regulation, and cognitive functions (including executive functions) (Hwa-Froelich, 2022).

In practice, it is helpful to view communication difficulties on three levels:

- Social-linguistic level (e.g., vocabulary, syntax, narrative skills, pragmatics – requesting, refusing, changing the topic) (Matthews et al., 2018),
- Social-cognitive level (e.g., understanding another person's perspective, predicting reactions, flexibility; development of theory of mind) (Wellman & Liu, 2004),
- Social-emotional level (e.g., joint attention, social synchrony, mutual emotional regulation in interaction) (Jethava et al., 2022).

In addition, all of these levels are influenced by executive functions (working memory, inhibition, flexibility), which often determine whether a child consistently remembers the rules of conversation, waits for their turn, and changes strategy when a plan is not working (Diamond, 2013).

In typical development, children learn to understand social messages through relationships with adults: first through eye contact, gestures, the rhythm of turn-taking, and joint attention, and only later through increasingly complex use of words. Early "proto-conversations" (turn-taking, responding to signals, attunement) build the foundation for later verbal conversations (CDC, 2025).

Understanding more subtle meanings develops gradually. Initially, children begin to use intonation as a cue (e.g., that something is being "said indirectly"), and with age they increasingly integrate intonation with context and the speaker's intention (Glenwright et al., 2014). This is important because both adults and peers very often communicate using shortcuts, jokes, or irony—things a child may not understand despite knowing the words. Below, we present a table describing typical patterns of social-communication development. The absence of a single behavior from the list does not automatically indicate ASD. A similar profile may result, among others, from speech and language delay, hearing difficulties, shyness/social anxiety, ADHD, stress reactions, or temperamental variability.

Table 1.1. Typical socio-communicative development (0–8 years)

Age (Approx.)	Social-Communication Competence	Typical Behaviours	Typical Indicators of Difficulties (for observation)

3 M.	Social Contact, Responding To Voice/Face	social smile, calming in response to caregiver's voice, brief "dialogues" using facial expressions/sounds	few social responses, weak eye contact / weak response to voice
6 M.	Vocalizations + Responsiveness to Social Cues	babbling, responding to intonation, showing joy during social contact	limited babbling / limited responses to interaction
9 M.	Turn-Taking and "Prosocial" Gestures	responds to name, exchanges sounds with an adult, performs gestures like "pick me up"	no response to name, little turn-taking
12 M.	Communicative Gestures + First Words	"bye-bye," nodding "yes/no," follows simple instructions, first words used for communication	few communicative gestures (pointing, waving), difficulty with simple instructions
18 M.	Joint Attention + "Showing to Request"	points to create shared attention ("look!"), imitates, begins simple pretend play	lack of or very little pointing / "joint attention," difficulty with imitation in play
24 M.	Rapid Vocabulary Growth + Simple Pragmatics	combines 2 words, makes requests, refuses, points to pictures, begins to understand simple questions	very limited vocabulary / speech "not used for social purposes," strong frustration when not being understood
36 m.	Conversation (Short) + Play With Peers	2–3 conversational exchanges, joins in play, names basic emotions	difficulty with turn-taking, frequent "out of nowhere" conflicts during play
4 y old	Narration + Understanding Social Rules	tells simple stories, understands rules, begins to better predict others' reactions	difficulty with storytelling (chaotic, lacking coherence), frequent "talking past each other" in conversation
5–6 y old	Multi-Step Conversation + Understanding "Why" And "For What Purpose"	maintains topic, answers questions about causes, engages in role play, apologizes/compliments	literal interpretation, difficulty with conversational flexibility, not understanding jokes or social play
7–8 y old	Adapting to The Listener + Following Group Rules	able to "repair" the conversation, better reads context, begins to understand simple sarcasm when supported by intonation	frequent misunderstandings in the group, "rigid" sticking to one's own topic, problems with context and indirect meanings (allusions)

Source: Self-generated based on: Centers for Disease Control and Prevention, 2021; Dave et al., 2018; Kliegman et.al., 2020; Landry et al., 2006; Malik, Marwaha, 2022; Menyuk, Brisk, 2005; Smith, 2020b).

1.3. The Social-Emotional Profile of Children with ASD

A child's behavior in ASD is often not a simple result of lacking a specific skill. What we usually observe is a combination of:

- a different way of understanding social situations,
- a different threshold for overload (both sensory and social),
- difficulties with emotional regulation and flexibility, and
- the fact that under stress, performance efficiency decreases even when the child theoretically knows what should be done.

The profile of social-emotional functioning may also change depending on the level of load, the predictability of the day, adult support, and experiences within the group (e.g., rejection, teasing). Therefore, a child's behavior should be treated as information about their current state and about the demands of the situation, rather than as a fixed personal trait (Mazefsky et al., 2013; Hanley, 2012).

In practice, it is often crucial to clearly distinguish between a lack of knowledge of a rule and a lack of ability to apply it in real life. This distinction frequently leads to completely different types of intervention. A child may not know the rule or may not understand it (e.g., they do not understand the intention or the meaning of the rule, they do not correctly read signals, they interpret messages literally). In ASD, pragmatic difficulties are described as a characteristic element of the communication profile—even in the presence of good vocabulary and correct grammar (Tager-Flusberg & Caronna, 2007).

However, the child may be able to describe the rule after the fact ("I know that I should wait"), but in a moment of tension be unable to apply it in practice because, for example, they cannot inhibit an impulse, communication becomes harder under stress, or they cannot flexibly switch between strategies. In ASD, emotional regulation is often weakened, and high arousal easily translates into challenging behavior (Mazefsky et al., 2013). Additionally, anxiety is often present and may further reduce functioning in real situations (van Steensel et al., 2011). Thus, failure to apply a rule or behave appropriately may not result from lack of knowledge, but from insufficient executive/regulatory resources in situations that the child experiences as stressful (Mazefsky et al., 2013).

It should also be remembered that for children with autism spectrum disorder, situations that are neutral for others may be highly stressful. Added to this is social fatigue: intensive monitoring of social rules and constant adaptation can be exhausting, especially when the child uses masking strategies (Cook et al., 2021; Zhuang et al., 2023). In practice, the child may follow rules and respond appropriately for part of the day or part of an interaction, and then irritability, withdrawal, or oppositional behaviors increase. The same behavior can serve different functions, which is why intervention planning should begin with formulating a hypothesis about the cause and function of the behavior (Hanley, 2012).

In this context, it is also important to consider whether the child has the potential to acquire new skills in this area. Many children show deficits not because they lack competence as a direct result of the disorder, but because they lack opportunities to acquire these competences due to a developmentally unfavorable environment or attachment-related difficulties (Odachowska-Rogalska, 2023). This, in turn, may be linked to further difficulties in the child's emotional functioning.

A significant difficulty that may appear in children on the autism spectrum is emotion recognition. In social situations, emotions appear in motion, in crowds, with accompanying informational "noise," and in changing social contexts. Children with ASD may correctly recognize emotions in pictures, yet have difficulty naming emotions in real social interaction. Research shows that in ASD, difficulties in emotion recognition may concern not only accuracy but also reaction time (slower recognition) in children and adolescents (Masoomi et al., 2025).

Another complicating factor is the need to understand context in order to correctly label emotions. Studies on context-dependent emotion perception suggest that when correct interpretation requires inference from context, differences may be greater (Ortega et al., 2023). This is another feature shared by children with ASD and RAD, hence the need to consider differential diagnosis or dual diagnosis in children on the spectrum.

Emotional reactions in children with ASD are often described as inappropriate—either mismatched to the situation in their emotional direction or in their intensity. They are frequently difficult to understand and therefore interpreted as intentional, when in fact they often result from a loss of control over arousal (Mazefsky et al., 2013).
Possible emotional reactions may include:

- Meltdown – a sudden loss of control (screaming, crying, throwing objects, sometimes self-injury), often following a buildup of tension.
- Shutdown – a freeze response; withdrawal, disconnection, silence, "shutting down," sometimes drowsiness or apathy.
- Escape behaviors, e.g., suddenly leaving the classroom, hiding (this is often an attempt to protect oneself from overload, not "escaping responsibilities").
- Excessive compliance, automatic "yes," agreeing to everything (which may lead to a meltdown later).

- Somatic reactions – stomachaches, headaches, nausea, trembling, hyperventilation.

Difficulties in interpreting behavior and emotions, however, work in both directions. Adults often make incorrect interpretations of a child's behavior and emotional reactions. If an adult assumes a particular intention behind a child's emotional response (e.g., "they are doing this to spite me," "they want to force something"), this can initiate an escalation spiral. High risk in school does not stem only from the child's difficulties, but also from adults' interpretative errors. For this reason, an appropriate understanding of the function of behavior is crucial when planning support (Mazefsky et al., 2013; Hanley, 2012).

Table 1.2. The same behaviour – different causes

Observable behaviours	Possible causes (examples)
Avoiding eye contact	sensory overload (facial stimuli/light), anxiety, focusing on content at the expense of the nonverbal channel, cultural/family norms; sometimes a self-regulation strategy (Robertson & Baron-Cohen, 2017; van Steensel et al., 2011).
Withdrawing from social contact, isolating oneself from the group, escaping/running away	overload from noise/crowding (sensory), lack of predictability, need for a regulatory break, social anxiety, peer conflict/bullying, overly demanding executive requirements (switching, inhibition) (Robertson & Baron-Cohen, 2017; Mazefsky et al., 2013).
Silence / not speaking	anxiety, lack of a suitable "speech script," slow information processing, overload, previous negative experiences (Steffenburg et al., 2018; Haigh et al., 2018).
Anger, an outburst with no noticeable cause	overload, decreased emotional regulation, difficulties related to flexibility, misunderstanding of intentions/jokes, defensive reaction to an unclear situation; anxiety (Mazefsky et al., 2013; Mashal & Lellouche, 2024; van Steensel et al., 2011).
Lack of response to an instruction	slower processing speed, overload with auditory stimuli, working memory difficulties (instructions that are too long), focus on details, "freezing" under stress (Haigh et al., 2018; Robertson & Baron-Cohen, 2017).
Excessive correcting of others, arguing about rules, resistance to change	need for predictability, fear of change, cognitive rigidity (Mazefsky et al., 2013).

Source: Self-generated.

When assessing the causes of a child's behavior in ASD, it is worth considering the following possibilities:

- sensory overload and atypical sensory processing (Robertson & Baron-Cohen, 2017),
- anxiety (common in ASD) and fight, flight, or freeze responses (van Steensel et al., 2011),

- difficulties with emotional regulation (Mazefsky et al., 2013),
- slower processing speed / need for more time to respond (Haigh et al., 2018),
- pragmatic difficulties and reduced clarity of other people's intentions (Tager-Flusberg & Caronna, 2007; Mashal & Lellouche, 2024).

Other factors that may underlie a child's behavior include, for example, experienced crisis situations, the effects of attachment disturbances, or other co-occurring diagnoses (Odachowska-Rogalska et al., 2025).

1.4. The Context of Preschool Education

In preschool, social-emotional development happens "in motion": during free play, cooperation with peers, conflicts over rules, and situations of overload. This is precisely why social stories are such a frequently used and appropriate tool—they describe real situations that are close to the child's experience and show how they unfold.

In preschool, teasing rarely takes the form of stable, planned violence, and more often appears as recurring dominance within the group: exclusion from play, taking over resources, "assigning" roles, teasing, and commenting on behavior. Observational studies show that already in early childhood, roles similar to those known from bullying (perpetrator, victim, bystanders) may emerge, and that gender and group context influence the form of peer aggression (e.g., more relational aggression among girls) (Monks et al., 2021). Importantly, a child who does not understand the rules operating in the group or reacts "atypically" may become an easy target.

During preschool activities, a child on the spectrum often enters play without a clear social script or with their own rigid scenario. Their peers, in contrast, negotiate rules quickly and flexibly. In such a situation, the child on the spectrum may try to take control (because this reduces uncertainty) or withdraw (because overload increases). The result is recurring conflicts that in fact concern:

- belonging to the group,
- unwritten norms, and
- tolerance of change.

Masking is a set of strategies through which a child tries to "look more typical" in social situations: copying others' behavior, suppressing stimming, forcing eye contact, using "learned" phrases, pretending interest even when overloaded. Literature reviews indicate that masking may already appear in preschool-aged children (Cook et al., 2021). In preschool, masking is often harder to recognize, because children at this age rarely can explain the motives behind their behavior or the strategies they use. At this stage it may take the form, for example, of excessive compliance, submission, or imitation of others' behavior. It is also often associated with high costs and a strong need to release tension after a whole day in preschool.

Qualitative studies in schools show that masking is described both as a way of "social survival" and as a significant effort (Halsall et al., 2021). In preschool, the mechanism is similar, although the strategies used are often simpler. There is increasing emphasis in the literature on the fact that the autism profile may be recognized differently in girls and boys, and that some girls (and, more broadly, children with high social motivation) may use compensatory strategies more often, which makes difficulties harder to notice in natural conditions (Lai et al., 2015; Wood-Downie et al., 2021).

1.5. Implications of the ASD Profile for the Goals of Social Stories

The first step linking a child's social-emotional functioning profile with support planning is moving away from the label of "problem behavior" toward a precise hypothesis about which skill is missing in a given situation and which environmental factors block the use of skills that the child already partially possesses. It is helpful to ask: what is too difficult for the child in this situation, and what alternative, teachable response could serve the same function with a lower social cost?

Behavioral approaches emphasize that interventions based on understanding the function of behavior are more coherent and effective than those based solely on consequences, because they target the mechanism rather than the symptom (Hanley, 2012). Social stories can serve here as an intervention aimed at specific skills in specific contexts. Research shows that the effectiveness of social stories varies depending, among other things, on the type of goal (reduction of undesirable behavior vs. teaching skills), the quality of

preparation, implementation procedures, and the method of measurement (Kokina & Kern, 2010; Qi et al., 2018).

To derive such a goal from the social-emotional profile of a particular child, we should first organize our observations into the following categories: context, situational demands, barriers, behavior, function, and alternative skill.

In practice, goals of social stories in preschool and early school age are often grouped in areas that stem directly from the characteristics of ASD, such as: recognizing emotions and social signals, communicating needs, flexibility and coping with change, social skills in peer relationships, coping with sensory overload, and emotional regulation.

Recent literature reviews on social stories indicate that their topics cover a wide range of goals (from challenging behaviors to adaptive skills), but at the same time emphasize the importance of aligning the content with the goal and ensuring quality and appropriate implementation (Como et al., 2024). It is also pointed out that in the context of early education, goals should be short, concrete, and embedded in everyday, routine activities (Zhou et al., 2024).

1.6. Reflection Questions

1. Understanding Behavior and Underlying Causes

- Reflect on behaviours that are sometimes interpreted as “the child does not want to” or “the child is being difficult.” How might these behaviours be understood differently when considering the developmental characteristics of children with ASD?
- Think about situations in which a child’s behaviour may be influenced by challenges in social communication, emotional regulation, sensory processing, or executive functioning. How might recognising these underlying factors influence the way adults respond?

2. Environmental and Contextual Factors

- Reflect on the daily routines in your educational setting. At which moments of the day might children with ASD experience increased tension, uncertainty, or stress?

- • Consider how elements of the classroom environment – such as noise, physical organisation, transitions between activities, or peer interactions – may influence children's emotional and behavioural responses.

3. Adult Interaction and Teaching Style

- Reflect on the ways adults communicate with children in educational settings. How might aspects such as tone of voice, speed of speech, complex instructions, or indirect language influence children's understanding and emotional responses?
- Consider how adjusting communication style, instructions, or expectations might support greater engagement and emotional security for children with ASD.

4. Motivation and Learning Readiness

- Reflect on how children express curiosity, motivation, or readiness to participate in activities. How might educators recognise these signals in children with ASD?
- Consider the conditions that appear to support children's learning most effectively (e.g., predictable routines, visual supports, structured guidance, sensory accommodations). How might these conditions influence teaching decisions?

5. Strengths and Individual Profiles

- Reflect on the individual strengths, interests, and competencies that children with ASD bring to the learning environment.
- Consider how these strengths might be used to support social-emotional learning, participation in classroom activities, or the design of interventions such as Social Stories.

CHAPTER 2. SOCIAL STORIES

Chapter Overview

Social Stories are narrative-based interventions specifically designed to support children and adolescents with Autism Spectrum Disorder (ASD) in understanding social situations, expectations, and the perspectives of others. Developed by Carol Gray in the 1990s, Social Stories aim to provide structured, descriptive, and perspective-based explanations of social contexts rather than directly correcting behavior.

Social Stories emphasize empathy, respect, and clear communication adapted to the needs of individuals with ASD. They are personalized, collaborative tools co-created with children, families, and professionals, and they answer key questions - who, what, when, where, why, and how - to make social expectations explicit, reduce anxiety, and foster confidence.

Core components of Social Stories include the descriptive phase (what is happening), perspective phase (thoughts and feelings of others), directive phase (possible responses framed as choices), and control phase (coping strategies and self-regulation). Digital Social Stories extend these benefits by incorporating multimedia, interactivity, and accessibility features to enhance engagement, comprehension, and fidelity of implementation.

Evidence indicates that Social Stories can effectively improve social understanding, emotional regulation, and adaptive responses, provided they are developed with attention to narrative quality, individualization, and instructional integrity.

Aims of the Chapter

By the end of this chapter, readers should be able to:

1. Understand the definition, purpose, and theoretical basis of Social Stories and how they differ from directive behavioral interventions.
2. Recognize the key structural components of Social Stories—descriptive, perspective, directive, and control phases—and the pedagogical rationale for sentence balance.

3. Identify the process of creating effective Social Stories, including planning settings, characters, opening lines, endings, consistent tone, and turning points.
4. Evaluate how Social Stories function as evidence-based practice within ASD education, and understand the importance of fidelity, context, and learner characteristics.
5. Explore the benefits and design principles of digital Social Stories, including multimedia, interactivity, accessibility, and co-design with children and families.
6. Reflect critically on how Social Stories support social understanding, emotional regulation, and autonomy without relying on coercive or directive strategies.

2.1. Definition of Social Stories

Social Stories are one of the most widely recognized narrative-based interventions designed to support children and adolescents with Autism Spectrum Disorder (ASD) in understanding social and cultural situations Originally, they were developed by Carol Gray in the 90' in response to the observation that many individuals with ASD experience difficulties interpreting implicit social rules, perspectives of others, and contextual social cues that are often taken for granted in everyday interactions (Gray & Garand, 1993). Her work points out empathy, respect, and the belief that autistic people can thrive when communication is adapted to their needs.

According to Gray, Social Stories are not intended to correct behavior directly, but rather to improve social understanding, which may then lead to more appropriate and adaptive responses. Therefore, far from the more popular trend of behavioral intervention for people with ASD, social stories emphasize providing a structured and systematic understanding of situations that are often socio-emotionally challenging. Now then, what are social stories and how are they defined?

Gray (2010) defines a Social Story as "a short story that describes a situation, skill, or concept in terms of relevant social cues, perspectives, and common responses in a specifically defined style and format" (p. 8). This definition highlights two essential characteristics: the descriptive nature of Social Stories, and their structured format, both of which distinguish them from other narrative or behavioral interventions. Additionally, Gray further refines the concept by describing Social Stories as "a social learning tool

that supports the safe and meaningful exchange of information between individuals with autism, their families, and professionals" (Gray, 2023).

This perspective emphasizes the collaborative and respectful nature of Social Stories, positioning them as a means of communication rather than instruction or correction. Importantly, the information presented in a Social Story must be accurate, reassuring, and meaningful to the individual reader. The exchange of information between teachers and individuals with ASD occurs through the design of personalized social stories. Social stories are not standard, predefined stories; they are narratives constructed from the interests and experiences of individuals with ASD. Therefore, social stories must be created in collaboration with individuals with ASD, as well as their family members, caregivers, and close friends.

From an academic standpoint, Social Stories have been described as individualized, short narratives that explain social situations by explicitly answering the questions: who, what, when, where, why, and how (Kokina & Kern, 2010). These narratives aim to make the social world more predictable for individuals with ASD, who often experience anxiety or confusion in situations where expectations are implicit or rapidly changing. By clarifying these expectations, Social Stories can reduce uncertainty and increase a sense of control and, therefore, achieve well-being and confidence. Social stories use simple language and a clear structure to explain what a person with ASD can expect from a specific situation, such as going to the doctor, waiting their turn, or starting a day at school. Each story describes the situation from the child's point of view, outlines appropriate responses, and reduces anxiety by making the unknown more predictable. These stories often include pictures and use a calm, reassuring tone to facilitate learning and understanding.

Beyond being a mere pedagogical method, this approach is characterized by considering how people with ASD prefer to approach the world. Specifically, several authors highlight that Social Stories are particularly well-suited to individuals with ASD due to their preference for visual structure, clarity, and predictability (Hutchins & Prelock, 2014). The combination of simple language, structured sentences, and sometimes visual supports aligns with the cognitive and learning profiles commonly associated with ASD. As a result, Social Stories are frequently used across educational, clinical, and home settings.

In a comprehensive review, Smith et al. (2020b) describe Social Stories as a low-intensity, evidence-informed intervention that is widely accepted by educators and families. While the effectiveness of Social Stories in producing measurable behavioral change varies across studies, there is consistent agreement that they enhance social comprehension, emotional regulation, and preparedness for social situations. This reinforces Gray's original emphasis on understanding rather than compliance.

It is also important to distinguish Social Stories from similar narrative approaches, such as comic strip conversations or social scripts. Unlike these approaches, Social Stories follow specific construction criteria, including sentence types and ratios, that prioritize descriptive and perspective-based information over directive instruction (Gray, 2015). This ensures that Social Stories remain supportive, respectful, and non-coercive.

To sum up, Social Stories can be understood as structured, personalized narratives designed to increase social understanding by making implicit social information explicit. Rooted in the work of Carol Gray and supported by a growing body of research, they represent a pedagogically sound tool that bridges cognitive, emotional, and social learning for individuals with ASD.

2.2. Components of Social Stories

A defining feature of Social Stories is their internal structure, which is based on specific sentence types or phases. These components work together to provide a balanced narrative that prioritizes understanding, emotional safety, and autonomy. According to Gray's guidelines, a Social Story typically includes four phases: descriptive, perspective, directive, and control. These phases may be accompanied by various images and sounds that accompany the scenes. Below, we will explain both the theory and practice of the aforementioned phases and provide examples.

2.2.1. Descriptive Phase

The descriptive phase forms the foundation of any Social Story. Its primary purpose is to objectively describe the social situation in which the individual may find themselves.

Descriptive sentences focus on observable facts and provide contextual information about where the situation occurs, who is involved, what happens, and when it usually takes place.

These sentences are intentionally neutral and non-judgmental. They do not imply expectations, emotions, or required actions, but instead aim to create a clear and accurate mental representation of the situation. This is particularly important for individuals with ASD, who may struggle to infer contextual information or may misinterpret ambiguous social cues. To design sentences that fit this descriptive phase, you can ask yourself these questions: “What/where/who/when/why is this happening?” and describe the situation. An example of this phase could be: “At school, students usually eat lunch in the cafeteria at midday.” This sentence provides factual information without placing any demand on the reader. In pedagogical terms, the descriptive phase supports situational awareness and reduces cognitive load by clarifying environmental expectations.

2.2.2. Perspective Phase

The perspective phase addresses one of the core social challenges associated with ASD: understanding the thoughts, feelings, and intentions of others. Perspective sentences describe how other people may feel, think, or react within the given situation. They also sometimes acknowledge the feelings of the individual themselves.

These sentences are phrased carefully using probabilistic language such as may, might, or sometimes, to avoid presenting social responses as fixed or absolute. This flexibility helps prevent rigid interpretations and supports more nuanced social understanding. To develop sentences that fit this perspective phase, ask yourself, “How will the people involved in the story feel?” and describe those emotions simply and directly. An example could be: “Some students may feel happy when they sit with their friends at lunchtime.” From a pedagogical perspective, the perspective phase fosters theory of mind development and empathy, without assuming that the learner will automatically adopt these perspectives. Instead, it gently introduces alternative viewpoints in a supportive manner.

2.2.3. Directive Phase

The directive phase provides gentle guidance on possible responses or strategies the individual can use in the situation. Unlike traditional behavioral instructions, directive sentences in Social Stories are framed as options rather than commands. They often include phrases such as I can, I will try, or I might.

The role of this phase is not to enforce compliance but to empower the individual with practical strategies that align with their understanding of the situation. Directive sentences should be positive, respectful, and achievable, taking into account the individual's abilities and preferences. To design phrases that fit this directive phase, ask yourself, "What should I do?" and establish guidelines or steps to follow to resolve the situation. See the following example: "I can look for an empty seat and ask if I may sit there." Pedagogically, this phase supports self-efficacy and decision-making, allowing the individual to rehearse socially appropriate actions in a low-pressure context.

2.2.4. Control Phase

The control phase is designed to promote self-regulation and personal ownership of the Social Story. Control sentences are often written by the individual themselves or developed collaboratively with support from an adult. They may include personal reminders, coping strategies, or metaphors that help the individual remember and apply what they have learned. These sentences are highly individualized and reflect the learner's voice, making the Social Story more meaningful and memorable. To design phrases that fit this control phase, ask the child to check all the phases of the social stories. For example: "If I feel nervous, I can remember that taking deep breaths helps me feel calm." From an educational standpoint, the control phase encourages metacognition and supports the transfer of learning from the story to real-life situations.

2.2.5. Sentence Balance and Pedagogical Rationale

The balance between sentence types is a fundamental pedagogical feature of Social Stories. Gray (2004) emphasizes that Social Stories should prioritize descriptive and perspective sentences, limiting the use of directive and control sentences in order to avoid turning the narrative into a set of behavioral instructions. This principle reflects the

original purpose of Social Stories as a means of sharing social information, not enforcing compliance.

Educational research supports this approach by highlighting that individuals with ASD benefit most from interventions that promote understanding and predictability rather than rule-based behaviour management (Crozier & Tincani, 2007). Descriptive and perspective sentences provide contextual clarity and explain social variability, which can reduce ambiguity and anxiety. In contrast, an excessive number of directive sentences may lead to rigid responses that are difficult to generalize across settings.

Moreover, this sentence balance aligns with learner-centered and inclusive pedagogical models, which stress autonomy, choice, and active meaning-making. Leaf et al. (2009) argue that interventions grounded in explanation rather than instruction are more likely to foster flexible social responding and long-term skill development. By maintaining a higher proportion of informative sentences, Social Stories encourage individuals with ASD to engage cognitively with social situations and select responses that are meaningful to them. In this sense, sentence balance is not only a structural guideline but also a reflection of the ethical and educational values underpinning Social Stories, supporting dignity, autonomy, and social participation.

Figure 2.1.

Structure of an Effective Social Story

(Descriptive – Perspective – Directive – Control Model)

An effective Social Story follows a structured narrative format designed to support understanding of social situations while maintaining a supportive and respectful tone. According to the principles proposed by Carol Gray, Social Stories are typically composed of four types of sentences: descriptive, perspective, directive, and control sentences.

Descriptive sentences form the foundation of the story by explaining the context of the situation. These sentences answer questions such as *who, where, when,* and *what is happening*. Their purpose is to provide clear and objective information about the social environment.

Perspective sentences introduce the thoughts, feelings, or reactions of other people involved in the situation. These sentences help children understand that others may experience emotions or perspectives that differ from their own, supporting the development of social understanding and empathy.

Directive sentences gently suggest possible responses or strategies that the child may try in the situation. Importantly, these sentences are framed as options rather than commands, often using expressions such as *"I can try…"* or *"I might…"*. This approach maintains the supportive and non-coercive nature of Social Stories.

Control sentences provide personal strategies or reminders that help the child regulate their behaviour and emotions. These sentences may include coping strategies or simple rules that the child can remember when facing similar situations in real life.

Maintaining an appropriate balance between these sentence types is essential. Descriptive and perspective sentences should be used more frequently than directive and control sentences, ensuring that Social Stories focus primarily on understanding social situations rather than enforcing behavioural compliance.

2.3. Social Stories as Evidence-Based Practice

2.3.1. The Importance of Evidence-Based Practices in Education

The movement toward evidence-based practice (EBP) plays a crucial role in education and social services, particularly in the area of support for children and adolescents on the

autism spectrum. Educational, therapeutic, and intervention programs designed for this population should be grounded in reliable empirical evidence confirming their effectiveness. This requirement is especially important given the complexity of the developmental needs of children with ASD and the high susceptibility of their families to promises of rapid and spectacular intervention outcomes.

As emphasized by Siri and Lyons (2014), the therapeutic services market includes numerous programs labeled as "therapies," whose creators claim significant improvements in the functioning of children with autism and, in some cases, even suggest the possibility of curing ASD. The lack of scientific support for such claims may lead to the use of ineffective or even harmful interventions, generating unjustified emotional and financial costs for families. In this context, evidence-based practice serves as a protective mechanism, enabling the selection of interventions with empirically supported effectiveness.

The EBP movement in education and social services developed analogously to evidence-based medicine, emphasizing the systematic use of research findings in practical decision-making processes. As noted by McGrew and colleagues (2016), despite ongoing terminological and methodological debates, there is a broad consensus within the scientific community regarding the necessity of implementing interventions whose effectiveness has been empirically demonstrated.

At the same time, the identification of an evidence-based practice is not an end in itself but rather the first step in the process of translating research into practice (Steinbrenner et al., 2020). A key role in this process is played by the decision-making of professionals—teachers, therapists, or healthcare providers. According to the classic framework proposed by Sackett and colleagues (1996), the effective application of evidence-based practices requires the integration of three core elements: the best available empirical evidence, the practitioner's expertise and professional experience, and the individual characteristics and needs of the child.

Odom and colleagues (2013), as well as the National Professional Development Center on Autism Spectrum Disorder (2017), emphasize that evidence-based practices must be implemented flexibly, taking into account the intervention context (e.g., school or home

environment), the child's characteristics (e.g., age, level of functioning, sensory profile), and variables related to the individual delivering the intervention, such as professional training, preferences, and available resources.

In this sense, evidence-based practice does not imply the mechanical implementation of a single "best method," but rather conscious and responsible decision-making grounded in scientific knowledge. As noted by Kasari and Smith (2016), misinterpretations of earlier research reviews have often led to an oversimplified understanding of EBP as a rigid catalogue of techniques rather than a dynamic process of tailoring interventions to the individual needs of the child.

The significance of the EBP movement in education lies not only in eliminating pseudoscientific interventions but also in improving the quality of support, increasing transparency in practice, and strengthening ethical responsibility toward children with ASD and their families. In this context, precise definitions of interventions and clear determination of their status as evidence-based practices constitute a foundation for further scientific and practical considerations. At the same time, merely identifying EBPs does not guarantee their appropriate implementation in practice.

The identification of evidence-based practices represents only the initial stage of translating research findings into everyday professional work (Steinbrenner et al., 2020). In professional practice, the purpose of identifying EBPs and their influence on the use of scientific information about effective interventions for children and adolescents with autism is often misunderstood (Kasari & Smith, 2016). It is unrealistic to expect that simply identifying a set of evidence-based practices will automatically lead to changes in their implementation by professionals (Odom, 2009). Instead, intervention research and systematic reviews play a crucial role—they are necessary, though not independently sufficient, steps in the process of moving science into practice.

In the context of educating children and adolescents on the autism spectrum, Social Stories provide an illustrative example of an intervention whose status as an evidence-based practice has undergone a multi-stage and critical scientific verification process. Their development, widespread use, and gradual empirical evaluation demonstrate how the process of identifying EBPs in practice evolves—from initial popularity, through

research on effectiveness, to informed and flexible implementation in everyday educational and therapeutic activities.

2.3.2. Social Stories in the Context of Evidence-Based Practices

Within the evidence-based practice movement, particular importance is placed on the analysis of specific educational and therapeutic methods used in work with children and adolescents on the autism spectrum. One such intervention is Social Stories, which—despite their widespread use in educational and therapeutic practice—have long been the subject of debate regarding the scope and quality of empirical evidence supporting their effectiveness.

Social Stories were designed as a tool to support the understanding of social situations, norms, and expectations, as well as a method for developing adaptive behaviors and reducing problem behaviors in individuals with ASD. Their intuitive nature, ease of implementation, and potential for individualization contributed to their rapid adoption among teachers, therapists, and parents. However, in line with the principles of the EBP movement, widespread use alone cannot justify recommending a given method; rather, the existence of systematic and methodologically rigorous research confirming its effectiveness is essential (McGrew et al., 2016).

The debate surrounding the status of Social Stories as an evidence-based practice reflects broader challenges faced by special education. Early literature reviews and meta-analyses suggested that Social Stories could be considered, at best, a "promising" intervention, pointing to methodological limitations such as lack of experimental control, insufficient data on implementation fidelity, and small sample sizes (Reynhout & Carter, 2006; Kokina & Kern, 2010; Test et al., 2011). Consequently, for many years, this method occupied a position between recommended practice and an intervention requiring further empirical validation.

From an evidence-based practice perspective, the evaluation of Social Stories cannot be limited to the number of published studies alone but must also consider their methodological quality and the interpretation of their findings. Adopting the classic EBP framework proposed by Sackett and colleagues (1996), the effectiveness of this

intervention should be analyzed in relation to the specific conditions under which it is applied. In the case of Social Stories, this entails considering not only the effectiveness of the method itself but also participant characteristics, educational context, and the competencies of those implementing the intervention.

A significant breakthrough in evaluating Social Stories as an evidence-based practice was provided by the meta-analysis and in-depth descriptive analysis conducted by Olçay, Kıyaka, and Toper (2022). The authors sought to resolve a long-standing debate in the literature regarding whether Social Stories meet the criteria for evidence-based practice or should continue to be classified merely as a "promising" intervention.

In their study, rigorous quality criteria were applied based on single-case research standards proposed by Kratochwill and colleagues (2013), further expanded to include an analysis of intervention fidelity. The combination of detailed descriptive analysis with a meta-analysis using the Improvement Rate Difference (IRD) effect size index enabled a more precise and methodologically sound assessment of the effectiveness of Social Stories than in earlier reviews.

Olçay and colleagues indicate that inconsistencies in earlier findings largely stemmed from methodological differences between meta-analyses. Some studies suggested insufficient scientific evidence (Reynhout & Carter, 2006; Kokina & Kern, 2010; Sani-Bozkurt & Vuran, 2014), whereas institutions such as the National Autism Center (2009), the National Professional Development Center on Autism Spectrum Disorder (2014), and the National Clearinghouse on Autism Evidence & Practice Review Team (Steinbrenner et al., 2020; Hume et al., 2021, 2023) classified Social Stories as an evidence-based practice. The authors emphasize that these discrepancies resulted from the inclusion of studies that did not meet quality standards, failure to account for implementation fidelity, and reliance on a single effect size index, most commonly Percentage of Nonoverlapping Data (PND).

In response to these limitations, Olçay et al. (2022) applied stringent inclusion criteria based on the single-case research standards proposed by Kratochwill et al. (2013), supplemented by an analysis of intervention fidelity—previously identified as a critical limitation (Reynhout & Carter, 2006). Only studies in which Social Stories were

implemented as a standalone intervention were analyzed, allowing for a more accurate assessment of their actual effectiveness.

The analysis included a total of 32 single-case studies, of which only nine met full or conditional quality standards. Among these, six demonstrated strong intervention effects in visual analysis. Unlike earlier meta-analyses, the Improvement Rate Difference (IRD) index was used, as it is considered more stable and more closely aligned with visual analysis than PND (Parker et al., 2009). All studies classified as demonstrating strong effects achieved IRD values exceeding 70%, indicating high effectiveness of Social Stories in both increasing adaptive behaviors and reducing problem behaviors.

A key element of the analysis involved assessing whether Social Stories met the 5–3–20 criterion proposed by Kratochwill et al. (2013). Olçay and colleagues demonstrated that the intervention met all required conditions: at least five high-quality studies showing moderate or strong effects, conducted by at least three independent research teams across different geographic regions, with a total sample exceeding 20 participants. On this basis, the authors unequivocally classified Social Stories as an evidence-based practice.

In this way, Social Stories exemplify an intervention that fully aligns with the principles of the evidence-based practice movement while also illustrating its dynamic nature. The method has progressed from an intuitive and widely used educational tool, through a period of critical scientific evaluation, to achieving the status of a practice supported by current and rigorous empirical evidence. Such an approach provides a solid foundation for further analyses of the structure of Social Stories, principles of their construction, and conditions for their effective implementation, which will be discussed in subsequent chapters of this book.

At the same time, the authors emphasize that recognizing Social Stories as an evidence-based practice does not relieve researchers of the obligation to conduct further studies, particularly involving individuals with diagnoses other than ASD, across different age groups, and using more precise measurement procedures.

In conclusion, in light of the analysis by Olçay et al. (2022), Social Stories meet the key criteria of evidence-based practice: they demonstrate replicable effectiveness, are

supported by methodologically high-quality research, and meet international standards for intervention evaluation. This work constitutes an important reference point for further research and provides a strong rationale for including Social Stories among recommended support methods for children and adolescents with autism spectrum disorders.

2.4. The Process of Creating Social Stories

Creating a social story is not a random process, but requires careful planning beforehand. The promoter of the idea, Carol Gray, has offered valuable guidance in this regard (Gray, 2010 and 2015). She believes that social stories should follow a series of criteria or standards "to ensure an overall patient and supportive quality, and a format, 'voice,' content, and learning experience that is descriptive, meaningful, respectful, and physically, socially, and emotionally safe for the Story audience (a child, adolescent, or adult)" (Gray, 2015, p. 1). Here, we will focus on several conditions that should be taken into account when planning stories. We will group them into two sections, depending on whether they refer more to the beginning of the process or to its development.

2.4.1. Establishing a Clear Setting, Creating Memorable Characters, and Selecting a Unique Opening Line

Among the most important elements when beginning to plan a social story are: a) establishing a clear setting, b) creating memorable characters, and c) selecting a unique opening line. Each of these components plays a particular role in constructing meaning, emotional connection, and communicative clarity in stories. Establishing a clear setting provides the context that guides understanding; creating memorable characters allows the reader to connect emotionally; and finally, selecting a unique opening line helps to arouse interest and capture attention.

Establishing a Clear Setting

The setting is the context in which the story takes place. In a social story, the setting not only describes a physical location, but also the emotional atmosphere and social circumstances in which the interaction takes place. A clear setting helps the reader contextualize behaviors, expectations, and future actions.

According to Carol Gray, "a Social Story answers relevant 'WH' questions that describe context" (2015, p. 3). The reader needs to know the what, when, where, and why of the social event that the story narrates before they can fully understand it.

A good setting in a story should include:

- *Description of the physical location.* Where does the situation take place?

  Example: "We are in the school cafeteria, a large room with tables and chairs."

- *Time.* When does it take place?

  Example: "It's lunchtime, right after science class."

- *Previous circumstances.* What happened before?

  Example: "The students have been working in teams all morning."

- Social expectations. What rules or behaviors are typical there?

  Example: "In the cafeteria, students sit together and talk with their classmates while they eat."

The setting can be reinforced by incorporating visual and sensory elements. These elements include illustrations, photographs, simple maps, or sensory descriptions (how the place smells, what sounds can be heard, etc.). For example, a sensory description could be: "In the cafeteria, I can hear soft laughter and the sound of trays being placed on the tables. The smell of the turkey sandwich reminds me that this is my favorite break time."

Creating Memorable Characters

Characters are the heart of any story. In a social story, characters help the reader identify, empathize, and model social behaviors and responses. A well-constructed character can make a complex social situation more accessible.

A memorable character stands out in the reader's mind with a clear and distinctive identity, someone who is not confused with others and leaves their own mark. It is a character capable of arousing emotional interest that invites understanding. Their behavior is consistent with their motivations and the context in which they exist, which gives them credibility and depth. Beyond the role they play in the story, they are recognized for their unique traits, those details that make them one of a kind and allow them to be remembered after the story is over.

The components of memorable characters in social stories are:

- *Name and identifiable traits.* Characters need to have names that sound natural and traits that can be easily described. This allows readers to associate ideas, emotions, and actions with a name, facilitating narrative comprehension.

Example: "Lucas, a curious nine-year-old boy, always carried a blue backpack with star patches."

- *Clear emotions and motivations.* Characters must have emotions and motivations that guide their actions within the story. These motivations must be understandable within the social context being narrated.

  Example: "Lucas wanted to participate in the school play because he liked acting, even though he sometimes felt nervous when speaking in front of many people."

- *Development and evolution.* Even in short stories, a character can change or learn something. This development makes the story more meaningful to the reader.

  Example: "By the end of the week, Lucas no longer felt so nervous. He had practiced several times with his classmates and had received words of encouragement that gave him confidence."

Not all characters need to be protagonists. There are also secondary characters who help enrich the story and offer different social perspectives. These characters must be equally consistent and functional within the setting. A secondary character can also fulfill an emotional or educational function. An example of a supporting character description might be: "Teacher Ana, with her ever-friendly smile, encouraged students to express themselves and practice their social skills."

Selecting a Unique Opening Line

The *opening line* is possibly the most decisive fragment of the entire text of the story. Its function is to grab the reader's attention from the very beginning, set the emotional tone that will permeate the story, and clearly define the approach from which it will be told. At the same time, it should hint at what is to come, preparing the reader for the narrative journey that awaits them. Therefore, a good first line must not only be impactful, but also clear and meaningful. Carol Gray suggests that social stories should preferably use descriptive rather than directive language (Gray, 2015, p. 3). This advice also applies to opening lines.

Opening lines can fail when they forget their essential purpose. Sometimes they are too long, become complex, and end up diluting the impact they should have. On other occasions, they do not have a clear relationship with the central theme of the story, which disorients the reader from the outset. They also fail when they are loaded with irrelevant

information, data that does not add meaning or arouse curiosity. But above all, an opening line loses its power when it fails to establish that initial connection—emotional or cognitive—that invites the reader to engage with the story.

Some options to consider when establishing effective opening lines are:

- *Questions that generate curiosity*. Starting with a question can directly engage the reader and spark reflection.

Example: "Have you ever felt nervous before speaking in front of a group?"

- *Simple, clear statements.* A clear statement can focus the reader's attention without ambiguity.

Example: "Lucas was ready to learn something new about making friends at recess."

- *Brief descriptions of the situation.* Describing a specific situation can place the reader within the context of the story from the very first line.

Example: "The sun was shining on the schoolyard as students formed groups to play after class."

2.4.2. Planning the Ending in Advance, Using Consistent Language, Tone, and Style, Including a Turning Point or Climax

Unlike other types of narratives, social stories do not seek entertainment as their main objective, but rather social understanding, anticipation of events, and learning adaptive responses. To achieve this, their creation process requires, as we have seen, careful planning, where each narrative element fulfills a specific function.

Below, we will analyze three other fundamental pillars of this process that allow the story to be coherent, predictable, emotionally accessible, and pedagogically effective: a) Planning the ending in advance; b) Using consistent language, tone, and style; and c) Including a turning point or climax

Planning the Ending in Advance

In traditional narrative, the ending is usually the result of a progressive creative process. However, in social stories, the ending must be planned from the outset, as it serves a key function: to provide security, predictability, and a clear example of social resolution.

One of the main objectives of social stories is "to address certain social rules and illustrate the appropriate ways to react in different social contexts" (Sani-Bozkurt, Vuran, & Akbulut, 2017, p. 3). The story should help anticipate the resolution of a social event. Uncertainty often causes anxiety, especially in people with interaction difficulties. A planned ending acts as a "map" that guides the reader toward a predictable and understandable resolution, offering a conclusion that reduces anxiety in complex social situations.

Planning the ending in advance allows for the creation of a circular structure, where the beginning and the ending are thematically connected. This coherence strengthens the message and improves emotional understanding.
Although social stories do not usually include dramatic endings, they can take different forms depending on the intended objective:

- *Descriptive ending.* Describes what usually happens at the end of the situation, reinforcing routine and predictability.

  Example: "After the meeting, the students return to their classes."

- *Emotional ending.* Focuses on how the protagonist feels, working on emotions and encouraging self-reflection.

  Example: "I feel proud that I tried something new."

- *Learning ending.* Highlights a skill or understanding acquired, reinforcing the educational objective of the story.

  Example: "Now I know that I can ask for help when I need it."

Using Consistent Language, Tone, and Style

Linguistic consistency is essential in social stories because it facilitates cognitive processing. Carol Gray (2018) suggests that stories use clear and literal language that is descriptive rather than prescriptive, positive and respectful, and adapted to the reader's cognitive level.

The tone should also remain consistent throughout the text. Generally, the tone will be calm, neutral, empathetic, and confident. A sudden change in tone (for example, from a

reassuring tone to an authoritative one) can break narrative coherence and generate emotional resistance.

Regarding the narrator's perspective, social stories are usually written in:

- *First person,* to facilitate identification.

  Example: "I can try to take a deep breath."

- *Third person*, when a greater distance is sought.

  Example: "Carlos can try to take a deep breath."

Consistency is also important here. Changing the narrative person without justification can confuse.

Including a Turning Point or Climax

In classical narrative theory, the climax is the moment of greatest tension in the story, where the difficulty of the situation reaches its peak. Often, it involves a narrative twist or turning point that moves the story toward its final resolution.

Although social stories avoid intense drama, they can include a gentle climax, adapted to their educational purpose. Unlike traditional fiction, the climax in social stories does not seek to generate surprise, but rather understanding. It should be calm and non-threatening, clear and explicit, and directly related to the objective of the story. Thus, in social stories, the climax usually coincides with an important decision by the protagonist, an emotional change, or the application of a social skill.

Some examples of turning points may be:

- *Example 1. Story about waiting for turns*

  "When I feel like I want to speak, I remember that I can count to three and wait."

- *Example 2: Story about managing frustration*
  - "At that moment, I take a deep breath and squeeze my stress ball."

The climax sets the stage for the planned ending. Once the protagonist applies the skill or understanding at stake, the ending shows the positive consequences of the action. For

example: "After taking a deep breath, I feel calmer." This structure reinforces the cause-and-effect relationship, which is essential for social understanding.

Table 2.1. Key Elements in Creating Social Stories

Element	Function	Description	Example
Setting	Provide context	Defines physical, social, and emotional context	School cafeteria
Characters	Support identification	Enable emotional connection and modeling	Lucas, a curious boy
Opening Line	Capture attention	Introduces tone and focus of the story	"Have you ever felt nervous before speaking?"
Ending	Provide predictability	Offers resolution and reduces anxiety	"I feel proud that I tried something new."
Turning Point / Climax	Highlight key moment	Represents decision or emotional shift	"I take a deep breath."
Language, Tone, and Style	Ensure coherence	Maintains clarity, consistency, and accessibility	Calm, neutral tone

Source: Self-generated based on Gray 2010, 2015, and 2018

To conclude this section, we can say that the process of creating social stories requires careful planning that goes beyond simple writing. We have seen that some essential elements for ensuring the narrative and pedagogical effectiveness of these stories are: establishing a clear setting; creating memorable characters; selecting a unique opening line; planning the ending in advance; using consistent language, tone, and style; and including a turning point or climax. Following Jerome Bruner, narrative is not just a way of telling stories; it is a way of knowing (Goldin, 2019). In this sense, social stories become a powerful form of social knowledge.

2.5 From Traditional to Digital Social Stories

2.5.1 Benefits of Digital Social Stories for Children with ASD

Social stories in digital format can integrate images, audio, video, animation, or interactivity. They therefore offer advantages in terms of access, motivation, and control

of the pace of learning (Camilleri et al., 2024; Camilleri et al., 2022). The key benefits are summarized below:

- **Greater adaptation to change, better understanding, and reduced anxiety**

  Smith et al. (2020a) found that, according to teacher assessments and follow-up designs, digitally mediated social stories in school and realistic contexts lead to improvements in understanding the situation and reduced anxiety about upcoming changes or events.

- **Improvement in target behaviors and reduction in problem behaviors (in some profiles)**

  Hanrahan et al. (2020), in a randomized pilot trial using a digital platform, described behavioral changes that were maintained during follow-up. In a pilot study in schools, where teachers implemented digital social stories for several weeks, significant improvements were observed in indicators linked to the targeted goals, including behavior, understanding, and anxiety, with some effects maintained during follow-up (Smith et al., 2020a).

- **Increased attention and "on-task" behavior in classroom tasks (heterogeneous results)**

  The iPad presentation has been associated with increases in on-task behavior in young children with autism, although not uniformly across all participants (Vandermeer et al., 2015). Similarly, a pilot study with social stories on iPad reported behavioral improvements in the classroom, reflected, for example, in a reduction in the amount of redirection required by teachers (Bordoff-Gerken & Asaro-Saddler, 2021).

- **Improvement in social communication skills**

  When social stories are integrated into a digital video modeling format, improvements in specific social behaviors (e.g., greeting, inviting to play, responding contingently) have been observed, with generalization to different environments, materials, and people, as well as concomitant increases in communication and social engagement (Litras et al., 2010). Improvements in social skills and reductions in undesirable behaviors (or increases in desirable behaviors) have also been reported through digital social stories in single-case designs (Safi et al., 2022).

- **Increased motivation (especially with interactive formats)**

  Interactive design (making decisions within the story, immediate feedback) has been associated with perceptions of greater motivation, encouraging usability and

participation, and detecting improvements not only in target behaviors but also in some non-target skills (Sani-Bozkurt et al., 2017). In a study with a large volume of data collected through an app (SOFA), it was observed that digital social stories can be particularly effective for younger, verbal autistic children (e.g., in adult assessments of closeness to the target), and that autistic children rated the stories as more enjoyable compared to other groups (Camilleri et al., 2024).

- **"Indirect" benefits by improving the fidelity of application by parents and professionals**

  The variability of results in social stories is often related, among other aspects, to differences in how they are developed and applied. The digital nature of social stories can help improve the competence and attitudes of parents and professionals in developing social stories (Camilleri et al., 2022) and encourage teachers to implement them with high fidelity in regular school settings (Smith et al., 2020a). These factors are relevant because more consistent implementation maximizes benefits (Camilleri et al., 2022; Smith et al., 2021).

2.5.2 Design Principles of Effective Digital Social Stories

Digital social stories can provide significant benefits for children with autism, especially if they are designed appropriately, with clear objectives, and implemented in a way that takes advantage of the potentially differentiating characteristics of this system (Camilleri et al., 2024; Smith et al., 2020a).

General features that have been established as "best practices" relate to both narrative quality (what makes a social story effective) and digital quality (what the digital format contributes, mainly focused on improving comprehension, motivation, and fidelity of use).

Narrative Quality Characteristics

Narrative quality characteristics include:

- A clear objective per story, avoiding mixing several behavioral or social goals (Hanrahan et al., 2020).
- Prior collection of information and perspective from the child to frame and understand the context from their point of view (Hanrahan et al., 2020).

- Appropriate structure, consisting of title, introduction, body, and conclusion (Hanrahan et al., 2020; Pane et al., 2015).
- Complete contextualization, including answers to as many relevant questions as possible (where, when, who, what, how, and why) to reduce ambiguity and anticipate the situation (Hanrahan et al., 2020).
- Balance between sentence types and recommended ratio, prioritizing descriptive/perspective/affirmative sentences over directive ones (e.g., 2–5 of the former for every 0–1 of the latter), so that the story informs and guides without becoming a set of orders (Bucholz, 2012; Pane et al., 2015; Hanrahan et al., 2020).
- Review and refinement of the story through iteration, i.e., revising and adjusting until criteria are met (Hanrahan et al., 2020).

Individualized Adaptation

Research emphasizes that individualization is not only aesthetic, but must also influence substantive aspects such as:

- Adjustment to skills, learning style, and interests (Hanrahan et al., 2020).
- Personalized and realistic images/photos (e.g., photos of the child, the classroom, or real materials), integrated with meaning (Hanrahan et al., 2020; Pane et al., 2015).
- Consistent format (using the same template to facilitate prediction) and control of linguistic load (Pane et al., 2015).

Content Aligned with Function and Alternative Teaching (When the Goal Is to Reduce or Increase Behaviors)

When social stories are used to modify behavior, their content should be systematically linked to behavioral function and instructional alternatives.

- Linking the story to a functional hypothesis (based on functional assessment), so that the described situation and recommended actions are consistent with the function of the behavior (Pane et al., 2015).
- Including an appropriate alternative behavior (e.g., functional requesting) and checking understanding through questions (Pane et al., 2015).

Instructional Design Decisions

In digital formats, additional design considerations are necessary to ensure that technology enhances rather than distracts from learning.

- Purposeful use of multimedia, combining text with visual (static/dynamic) and audio supports to increase access and motivation, while avoiding irrelevant embellishments (Sani-Bozkurt et al., 2017; Hanrahan et al., 2020).
- Meaningful interactivity, allowing autonomous navigation, choice-making, system feedback, and trial-and-error learning in a safe environment (Sani-Bozkurt et al., 2017).
- User-friendly interface for individuals with autism, characterized by simplicity, consistency, predictability, and reduced distractions; design decisions based on needs identified with families and teachers and refined through improvement cycles (Sani-Bozkurt et al., 2017).
- Accessibility features, such as text-to-speech functions, reading modes, pace control, and tools supporting fidelity in construction and implementation (Camilleri et al., 2022; Camilleri et al., 2024).

Process Quality (How They Are Constructed and Validated)

Finally, high-quality digital social stories require systematic development and validation processes to ensure relevance and usability in real-world contexts.

- Co-design involving families, teachers, experts, and children with autism to ensure appropriateness and usability in real contexts (Sani-Bozkurt et al., 2017; Hanrahan et al., 2020).
- Content validation, especially for story libraries, through expert/user consensus (e.g., Delphi procedures) and coverage of diverse contexts (home, school, community) and emotional variations (Ghanouni et al., 2019).

2.6.Reflection Questions

1. Writing and Tone

- Reflect on the process of writing your first Social Story. Which aspects of maintaining a respectful, clear, and non-directive tone might feel most challenging, and which might feel more natural?

- Consider how different ways of phrasing sentences influence the tone of a story. How might descriptive or perspective-based sentences affect the child's understanding compared to directive statements?

2. Descriptive and Perspective Components

- Reflect on the value of describing what happens in a situation (who, where, when, and why) rather than simply telling the child what to do. How might this approach support deeper understanding of social situations?
- Consider how including the thoughts and emotions of other people might influence the child's ability to understand perspectives different from their own.

3. Structure, Planning, and Predictability

- Reflect on how the structure of a Social Story, such as a clear beginning, a predictable sequence, and a gentle turning point, may influence a child's sense of security and comprehension.
- Consider how elements such as memorable characters, familiar situations, or an engaging opening line might support attention, motivation, and emotional connection with the story.

4. Personalization and Collaboration

- Reflect on how a child's interests, experiences, and communication style might influence the design of a Social Story. How might personalisation increase engagement and relevance?
- Consider how collaboration with parents or caregivers might enrich the content and authenticity of a story while respecting ethical boundaries and privacy.

5. Digital Design Considerations

- Reflect on the role of digital features such as images, audio, animation, or interactivity. In what ways might these elements support understanding and engagement, and in what situations might they become distracting?
- Consider how digital tools might allow stories to be adapted to individual learning profiles, including pacing, visual clarity, and accessibility.

6. Pedagogical and Reflective Practice

- Reflect on the idea that Social Stories aim to support social understanding rather than simply correcting behaviour. How might this perspective influence your approach to teaching or supporting children?

- Consider how you might recognise that a Social Story is supporting a child's development. What kinds of changes in behaviour, participation, or emotional responses might suggest positive impact?

CHAPTER 3. DESIGNING DIGITAL SOCIAL STORIES: PRINCIPLES, TECHNOLOGIES, AND TOOLS

Chapter Overview

This chapter focuses on the development, design, and implementation of **digital social stories** for children with ASD. Building on the theoretical foundations and educational rationale discussed in previous chapters, it highlights how traditional social stories can be enhanced through digital technologies, while maintaining pedagogical integrity.

The chapter covers:

- The main types of digital social stories, including video-based, photo-based, illustration-based, stop-motion, 2D/3D animation, coding-based interactive stories, and AI-supported stories.
- Multimedia elements and tools that can be used to create digital social stories, from basic presentation software to advanced animation and AI-supported platforms.
- Pedagogical principles and design considerations guiding the selection and integration of multimedia components, ensuring stories are developmentally appropriate, accessible, and engaging.
- Practical implementation steps, examples, and references to online resources to support hands-on creation of digital social stories.

By the end of this chapter, readers will understand how to align technological possibilities with educational objectives and individual learner needs, enabling the creation of effective, personalized digital social stories.

Chapter Aims

Upon completing this chapter, readers will be able to:

1. **Identify and distinguish** between different types of digital social stories and their respective educational purposes (e.g., video, photo, illustration, animation, coding-based, AI-assisted).
2. **Apply pedagogical principles** when selecting multimedia elements to support comprehension, motivation, and engagement in children with ASD.

3. **Plan, design, and produce** digital social stories using a range of platforms and tools, while adapting content to individual learner profiles and contexts.
4. **Integrate interactivity and personalization** effectively, considering each child's cognitive, sensory, and communication needs.
5. **Evaluate and reflect** on the educational quality of digital social stories, ensuring alignment with social-emotional learning objectives.

3.1. Digital Social Story Types, Features, and Design Principles

Digital social stories can be created and delivered through a wide range of digital formats, allowing educators and practitioners to select approaches that best align with the cognitive, sensory, and communication needs of children with Autism Spectrum Disorder (ASD).

These stories are implemented through diverse platforms, including standalone applications, web-based systems, and tablet-based software (Boşnak & Turhan, 2020). They integrate multimedia components such as text, images, audio narration, animations, video modeling, and personalized photographs (Almutlaq & Martilla, 2018; Lau & Win, 2018; Sansosti & Powel-Smith, 2008; Smith et al., 2021). From a pedagogical perspective, each element should be selected intentionally to **support specific learning objectives** and accommodate individual learner profiles.

Key Design Principles for Digital Social Stories

1. **Child-Centered Perspective** – Stories should be written from the child's point of view, focusing on comprehension, social-emotional understanding, and coping strategies rather than simply prescribing behavior (Hanrahan et al., 2020).
2. **Clarity and Structure** – Visual and textual information should be concise, concrete, and logically sequenced to minimize cognitive load. Multimedia elements should reinforce key steps or social cues.
3. **Personalization and Relevance** – Stories should be tailored to the child's interests, developmental level, and everyday experiences. Personalization can include familiar characters, settings, or custom avatars to increase engagement (Tian Ying, Mat Sah, & Lim Abdullah, 2016).

4. **Interactive and Multi-Sensory Engagement** – When appropriate, interactivity should be designed intentionally to promote engagement and repeated practice of targeted skills. This includes touch-based navigation, response opportunities, audio feedback, or cause–effect elements, particularly for tablet-based formats (Lau & Win, 2018).
5. **Consistency and Predictability** – Digital stories should maintain a consistent style, tone, and structure. Repetition of key social steps or cues supports learning and reduces anxiety in children with ASD.
6. **Alignment with Learning Objectives** – Multimedia enhancements (animations, video, or interactive elements) should be purposeful, reinforcing the social or emotional skill targeted by the story, rather than included solely for technological appeal.
7. **Collaboration and Flexibility** – Web-based platforms should allow contributions from teachers, caregivers, or peers, facilitating shared resources and adaptive practice in inclusive educational settings (Lau & Win, 2018).

Across studies, digital social stories commonly combine text, visual supports, and audio components. Some research reports the use of animated elements integrated with structured instructional guidance (Smith et al, 2021), while others describe social stories combined with video modeling strategies (Sansosti & Powel-Smith, 2008). These examples show how digital formats can extend traditional paper-based stories, providing **dynamic, interactive, and modeling-based learning experiences**.

Personalization remains a central principle in digital story design. Many social story-specific applications provide structured environments with repetition, immediate feedback, and controlled pacing, all adapted to individual learners (Smith et al., 2021). By selecting the most appropriate multimedia elements and interactivity features, educators can **maximize engagement, comprehension, and social-emotional learning outcomes** for children with ASD.

Figure 3.1

From Traditional Social Stories to Digital Social Stories

The integration of digital technologies into educational practice has expanded the possibilities of Social Stories, transforming them from static narrative tools into dynamic and interactive learning resources. Traditional Social Stories were typically presented as printed texts accompanied by simple illustrations or photographs and were often read aloud by a teacher, therapist, or parent.

While these traditional formats remain valuable and effective, advances in digital technologies have enabled the development of Digital Social Stories (DSS) that incorporate multimedia and interactive elements. Digital formats allow stories to include audio narration, animations, interactive images, and personalized content such as photographs of the child's own classroom or voice recordings of familiar adults.

These digital features can enhance comprehension and engagement, particularly for children who benefit from visual supports and multimodal learning environments. Interactive elements may also encourage active participation, allowing children to explore the story, revisit key moments, and better understand social expectations.

Moreover, digital tools allow teachers to easily adapt and update stories to reflect changing classroom situations, making Digital Social Stories more flexible and responsive to individual learning needs.

In this way, Digital Social Stories preserve the core pedagogical principles of traditional Social Stories while extending their potential through multimedia learning, accessibility, and personalization.

3.1.1. Video-based Social Stories

One of the most widely used formats is the video-based social story. In this approach, short videos are recorded using mobile phones, tablets, or video cameras, following a previously planned scenario. The story can be filmed either as a single continuous sequence or in separate segments. When separate segments are used, they can later be combined using basic video editing software.

Video-based social stories are particularly effective because they present social situations in a concrete and realistic manner. They also enable children to observe appropriate behaviors, facial expressions, tone of voice, and relevant environmental cues directly, which may support comprehension and generalization.

Suggestions for preparing a video-based social story

1. Decide how the video will be recorded (choice of device, and whether it will be filmed in one sequence or in separate stages).
2. Plan the scenario carefully before recording.
3. Prepare the sentences in accordance with social story writing principles.
4. Rehearse the scenario with participants and record trial versions if needed.
5. Film the story and select the most suitable recordings.
6. If the story is recorded in separate segments, use video editing software to combine them into one coherent video.
7. Add background music at a low volume if considered appropriate and ensure that it does not interfere with narration or comprehension.

Example from the Internet: https://www.youtube.com/watch?v=KiZSUcnyyzw the **Channel**: https://www.youtube.com/@socialstories9001

3.1.2. Photo-based Social Stories

Another commonly used digital social story type is photo-based stories with voice narration, also referred to as photo-voice stories. In this format, relevant photographs from real life are taken or collected.

Then they are arranged sequentially in a way to create a story by using simple video or presentation software. Voice narration is added to explain the social situation, and background music may be included if appropriate.

Either video editing or presentation software can be used to arrange the photos, voice and background music. This method is relatively easy to implement and is especially useful for younger children or those who benefit from real-life visual references which are combined with auditory support.

Suggestions for the photo-based social story preparation steps

1. Decide on which topic you will create a story.
2. Plan your scenario.
3. Take the photos and collect them.
4. Prepare your sentences in line with social story writing principles aligned with each photo that you will use in your story.
5. Record your audio files.
6. Use a video editing software or a presentation software to combine the photos and audio files.
7. Add a background music at a low volume if you consider appropriate.

Example from the Internet including PDF photo-based social story templates: https://undivided.io/resources/undivideds-school-visual-stories-library-3224

3.1.3. Illustration-based Social Stories

Another widely used type of digital social story is illustration-based social stories. In this format, drawings or illustrated images are used instead of real-life photographs to represent social situations, routines, or behaviors.

These illustrations may be created by the teacher, selected from existing illustration libraries, or generated using digital drawing tools and illustration software. Once the

images are prepared, they are arranged in a meaningful sequence by using simple video editing or presentation software to form a coherent story. Voice narration is then added to explain the social situation, and background music can be included when appropriate.

Illustration-based social stories offer greater flexibility than photo-based ones, as they allow educators to simplify environments, highlight key actions or emotions, and avoid unnecessary visual details. This format can be particularly helpful for children who may feel distracted by real photographs or who respond better to symbolic and stylized visuals. Similar to photo-based stories, illustration-based social stories combine visual and auditory support, making them suitable for young children and learners who benefit from clear, structured representations of social experiences.

Suggestions for preparing an illustration-based social story

1. Decide on the topic and carefully plan the scenario.
2. Create or select the illustrations or images in a way that clearly represents each step of the situation.
3. Write short and clear sentences in line with social story writing principles and matched with each illustration.
4. After recording the narration, combine the images and audio files by using video editing or presentation software.
5. If you prefer, you may add soft background music at a low volume so that it does not distract from the narration.

Examples of illustration-based social story templates and visual story resources are widely available online. These include PDF-based visual story libraries as well as collections of animated or illustrated stories designed to support social understanding and communication. Examples of such resources include:
https://www.youtube.com/playlist?list=PLOUQCTegHBlxCsZcKlDe3TLwh3ZvQ1SXf
https://autismlittlelearners.com/autism-little-learners-social-stories/

3.1.4. Stop-motion Animation Social Stories

Stop-motion animation social stories offer a more creative but time-consuming alternative.

These stories can be created by drawing images or constructing scenes with physical objects such as toys, playdough figures, or everyday household items. To create such social stories, multiple photographs should be taken while making small movements between each frame and arranging them sequentially.

The objects, then, will appear to move when played as a video, meaning all photos should be combined by using a video editing software. Although this technique requires patience, simplified versions can effectively demonstrate basic actions, emotions, or routines, such as sitting, walking, or waiting.

Suggestions for the stop-motion animation social story preparation steps

1. Decide on which topic you will create a story.
2. Plan your scenario.
3. Take a photos after making each small movement and collect all of them.
4. Prepare your sentences in line with social story writing principles aligned with each storyboard (including a set of photos) that you will use in your story.
5. Record your audio files.
6. Use a video editing software to combine the photos and audio files.
7. Add a background music at a low volume if you consider appropriate.

Example from the Internet including a social story created with stop motion animation: https://www.youtube.com/watch?v=kyLCPeHI1Ic the channel: https://www.youtube.com/@launchpodlittlelearners6384

3.1.5. Two-Dimensional (2D) and Three-Dimensional (3D) Animated Social Stories

2D and 3D animated social stories are another important category to create digital social stories. The most preferred type of digital social stories is in this category on the online platforms.

These animations are often professionally produced, but teachers can also create simple animations with limited prior experience by using accessible digital tools and mobile applications. Some user-friendly 2D animation platforms and drag-and-drop interfaces make it possible to design characters and animated scenarios through which teachers can create stories that visually represent social rules and expectations. Animated stories are particularly helpful for young children who can engage more easily with stylized visuals than with real-life images.

Suggestions for the 2D and 3D animated social story preparation steps

1. Decide on which topic you will create a story.
2. Plan your scenario.
3. Prepare your sentences in line with social story writing principles aligned with each storyboard that you will use in your story.
4. Design your storyboards in written or drawing including story characters, emotions, backgrounds, movements, etc.
5. Record your audio files.
6. Use an animation software to create the storyboards, add the audio files and prepare the animation.
7. Add a background music in at a low volume if you consider appropriate.

Example from the Internet (including a social story created with 2D/3D animation):: https://www.youtube.com/playlist?list=PLCCP2Vzt_o61i-cUnOdsuB5jIetXKQLY9

Channel: https://www.youtube.com/@autismlearningworlds

3.1.6. Interactive Social Stories Created on Coding-based Platforms

Digital social stories may also be created through coding-based platforms such as Scratch, Scratch Junior, or code.org.

These platforms enable teachers to design **interactive** stories by using block-based coding, where characters can move, talk, and react to user actions. Although educators may need some initial practice or self-directed learning to use these tools comfortably, they provide valuable opportunities for creating engaging and personalized stories.

This approach is particularly suitable for children with ASD who are curious about technology and enjoy understanding cause–effect relationships. It should be noted that there are also other platforms where interactive social stories can be created without coding as explained in Section 3.2.

Suggestions for the interactive social story preparation steps

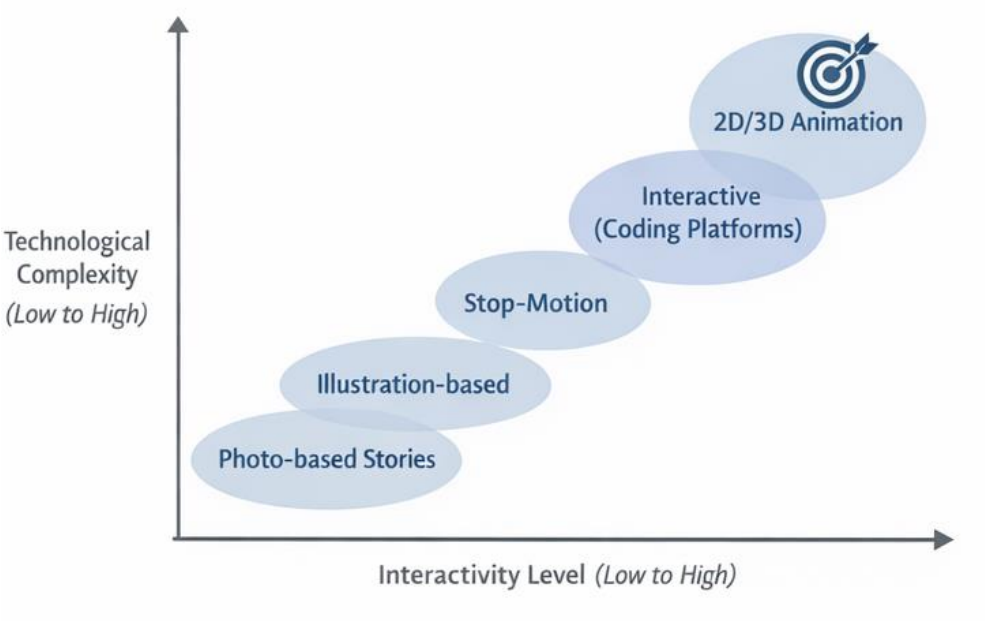
1. Decide on which topic you will create a story.
2. Plan your scenario.
3. Prepare your sentences in line with social story writing principles aligned with each storyboard that you will use in your story.
4. Decide at which points, interaction will be involved.
5. Design your storyboards in written or drawing including story characters, emotions, backgrounds, movements, etc.
6. Record your audio files. (You can include some sounds like ball hitting the ground, a ringing bell, a bird tweet, etc. to increase interactivity if necessary)
7. Use a block-based coding platform to create the storyboards through drag and drop block-based codes, add the audio files and prepare the interactive social story.

Example from the Internet including social stories created by the platform users:

https://scratch.mit.edu/search/projects?q=social%20stories

Figure 3.2

Types of Digital Social Stories and Their Interactivity Level



3.1.7. Interactive Social Stories Created by Artificial Intelligence (AI) Tools

More recently, AI-supported social story development tools have gained attention. These platforms assist educators by generating draft stories, storylines, or visual suggestions based on user input.

It can be useful, especially when teachers need assistance in how to initiate a story, prepare the content or ensure that key social messages are clearly conveyed. The generated content can usually be edited and adapted to allow teachers to ensure that the language, length, and message align with the individual needs of children with ASD.

Suggestions for the AI-supported social story preparation steps

1. Decide on which topic you will create a story.
2. Prepare a prompt for the AI tool to make sure the story that will be generated by the AI will be appropriate.
3. After the scenario and the animation or illustration-based social story is created, review the content and enter another prompt to adjust some parts if required.

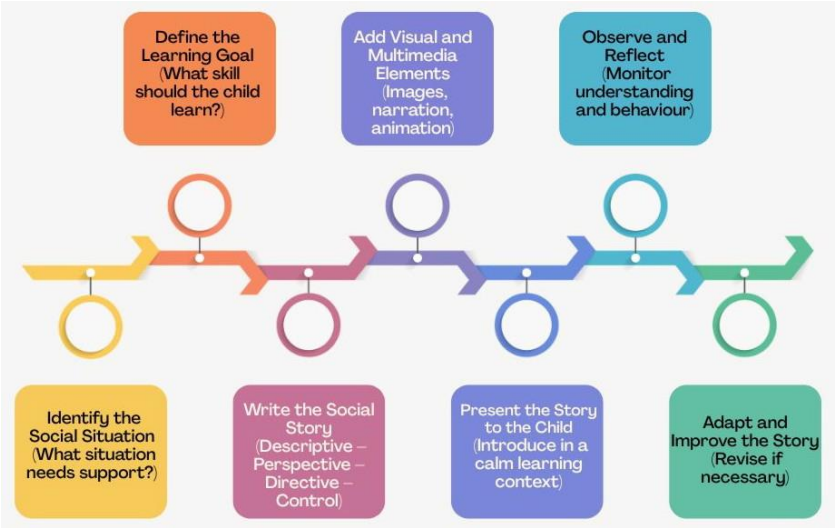
Example from the Internet including social stories created by AI (Editable versions and storyboards that can be created from scratch): https://ozzystory.com/

3.2 Appropriate Multimedia Elements: Principles and Tools

The effective design of digital social stories relies not only on the story content but also on the careful selection and integration of multimedia elements. These elements - text, images, audio, video, animation, and interactivity - can enhance comprehension, motivation, and engagement when used purposefully. The following sections describe the main types of multimedia tools, practical implementation steps, and associated pedagogical principles.

Figure 3.3

Steps for Designing a Digital Social Story



Designing an effective Digital Social Story involves a structured process that combines pedagogical planning, narrative development, and thoughtful use of digital media. The process begins with identifying a specific social situation that may be challenging for the child. This situation should reflect a real context from the child's everyday experiences in the classroom or school environment.

Once the situation has been identified, the teacher defines a clear learning goal, such as waiting for a turn, asking for help, or joining peer play. Clearly formulated goals help ensure that the story remains focused and meaningful.

The next step involves writing the narrative, following the principles of Social Story construction. This typically includes descriptive sentences explaining the situation, perspective sentences describing how others may feel, directive sentences suggesting possible responses, and control sentences that support self-regulation strategies.

After the story text is prepared, visual and multimedia elements are added to enhance comprehension and engagement. These may include photographs, illustrations, voice narration, or simple animations that help illustrate the situation in a clear and accessible way.

The story is then presented to the child in a supportive learning environment, often through shared reading or viewing with a teacher or caregiver. At this stage, the goal is to support understanding rather than to immediately change behaviour.

Finally, the teacher observes the child's responses and reflects on the effectiveness of the story. If necessary, the story may be revised or adapted to better match the child's needs or the classroom context. This structured process helps ensure that Digital Social Stories remain meaningful, individualized, and pedagogically effective tools for supporting social-emotional learning in inclusive educational settings.

3.2.1. Basic Tools

Basic tools, such as presentation software, allow educators to combine text, images, and audio in a simple, accessible way. They are particularly suitable for introducing digital social stories to children and for addressing everyday social situations.

Pedagogical Principles:

- **Simplicity:** Avoid excessive visual or auditory stimuli that could overwhelm the child.
- **Alignment with objectives:** Each slide or screen should correspond to a concrete social step or skill.
- **Consistency:** Maintain a uniform layout, style, and font across the story to support predictability.

Selected Tool: Google Slides

Step-by-step use for digital social stories

1. Open Google Slides and create a new blank presentation.
2. Decide on the social situation that you will be addressed (e.g., "Going to the Playground").
3. Create one slide per step of the social situation.
4. Insert images (photos or illustrations) that clearly represent each step.

5. Add short, clear sentences following social story writing principles.
6. Use the "Insert → Audio" option to add recorded narration if needed.
7. Keep the layout consistent and visually simple.
8. Present the story directly on a screen or export it as a PDF or video for later use.

Instructions for how to use Google Slides in detail:

https://www.youtube.com/watch?v=Y5q-ObSGQFY

Channel: https://www.youtube.com/@SimonSezIT

3.2.2. Story-Creation Platforms

Story-creation platforms are specialized tools designed to facilitate digital storytelling. They often include ready-made layouts, characters, and visual elements, enabling educators to focus on pedagogical content.

Pedagogical Principles:

- **Narrative coherence:** Platforms support logical sequencing and clear storytelling.
- **Engagement:** Visual characters and customizable layouts increase motivation.
- **Accessibility:** Easy-to-use interfaces allow educators with limited technical experience to produce effective stories.

Selected tool: Book Creator

Step-by-step use for digital social stories

1. Create a free Book Creator account and start a new book.
2. Select a simple book layout suitable for young children.
3. Add one page per social story step.
4. Insert images, drawings, or icons that illustrate the situation.
5. Type short, descriptive sentences using positive language.
6. Record audio narration directly on each page.
7. Review the story for clarity and emotional appropriateness.
8. Share the book digitally or export it as a video or PDF.

Instruction for how to use Book Creator in detail:

https://www.youtube.com/watch?v=Mlap3afudKk

Channel: https://www.youtube.com/@JenJonson

3.2.3. Video Editing Platforms

Video editing software enables the combination of photos, video clips, narration, and music. This is particularly effective for photo-based or illustration-based social stories and video modeling approaches.

Pedagogical Principles:

- **Concrete modeling:** Real-life or animated videos provide clear demonstrations of social behaviors.
- **Controlled pacing:** Slow transitions and careful sequencing reduce cognitive overload.
- **Audio-visual alignment:** Synchronize narration and visuals to reinforce comprehension.

Selected tool: Canva

Step-by-step use for digital social stories

1. Open Canva and select a “Video” or “Presentation” template.
2. Choose a clean and minimal design.
3. Upload photos, images, or short video clips related to the social scenario.
4. If appropriate, you can use the existing images or video clips on the platform library.
5. Arrange visuals in a logical sequence.
6. Add text captions using simple, direct sentences.
7. Upload or record voice narration.
8. Add soft background music if appropriate, keeping the volume low.
9. Export the final story as a video file.

Instruction for how to use Canva video editor in detail:

https://www.youtube.com/watch?v=AlrC-XaKwew

Channel: https://www.youtube.com/@PrimalVideo

3.2.4. Caricature Platforms

Caricature and comic platforms allow social stories to be presented with illustrated characters and speech/thought bubbles, enhancing the understanding of emotions and perspectives.

Pedagogical Principles:

- **Visual simplification:** Stylized characters reduce distractions.
- **Emotion teaching:** Bubbles clearly indicate thoughts and feelings.
- **Child interest:** Especially effective for children who enjoy comics or caricatures.

Example tool: Pixton

Step-by-step use for digital social stories

1. Create a Pixton account and start a new comic.
2. Design characters that resemble the child or familiar people.
3. Choose simple backgrounds related to the social situation.
4. Create one comic panel per story step.
5. Use speech or thought bubbles to explain actions and emotions.
6. Keep text brief and concrete.
7. Review visual clarity and emotional accuracy.
8. Export the comic as images or a PDF for digital use.

Instruction for how to use Pixton comic book in detail:

https://www.youtube.com/watch?v=T_dThbYBGeU

Channel: https://www.youtube.com/@pixtonedu4231

3.2.5. Animation Platforms

Animation platforms support dynamic visual storytelling with moving characters and scenes, helping children understand abstract social concepts.

Pedagogical Principles:

- **Dynamic modeling:** Animated actions clarify sequences of social behaviors.
- **Controlled cognitive load:** Slow, simple animations prevent overload.
- **Narrative integration:** Align narration/subtitles with visual actions.

Selected tool: Powtoon

Step-by-step use for digital social stories

1. Open Powtoon and choose a simple animated template.
2. Plan the story sequence before starting the animation.
3. Add characters and scenes that represent the social situation.
4. Animate actions slowly to avoid cognitive overload.
5. Insert short text explanations or subtitles.
6. Record or upload narration aligned with each scene.
7. Review pacing and visual clarity.
8. Export the animation as a video.

Instruction for how to use Powtoon Animation Platform in detail:

https://www.youtube.com/watch?v=lEQiZQi-aGY

Channel: https://www.youtube.com/@JenJonson

3.2.6. AI-Supported Story Development Platforms

AI-supported platforms generate drafts, visuals, or story suggestions based on prompts, offering inspiration for teachers while requiring careful review and adaptation.

Pedagogical Principles:

- **Content accuracy:** All AI-generated material must be evaluated for developmental appropriateness.
- **Personalization:** Modify language, images, or scenarios to match the child's needs.
- **Prompt precision:** Clear input ensures relevant and usable outputs.

Selected tool: Storywizard.ai

Step-by-step use for digital social stories

1. Enter the platform and select story generation.
2. Provide a prompt describing the social situation.
3. Review the AI-generated story draft.
4. Edit language to align with social story principles.
5. Adjust vocabulary and sentence length for the child's level.
6. Select or modify generated illustrations.

7. Export the story in digital format.

Instruction for how to use Storywizardai Platform in detail:

https://www.youtube.com/watch?v=cU4l8dtMM9w

Channel: https://www.youtube.com/@storywizardai

3.2.7. Code-Based Interactive Story Development Platforms

Block-based coding platforms (e.g., ScratchJr) enable interactive stories with movement, sound, and cause–effect sequences, fostering active learning.

Pedagogical Principles:

- **Active engagement:** Interactivity supports attention and motivation.
- **Cause–effect learning:** Coding sequences reinforce logical reasoning.
- **Hands-on personalization:** Children experience control over story outcomes.

Selected tool: ScratchJr

Step-by-step use for digital social stories

1. Open the ScratchJr application on a tablet device.
2. Create a new project and select a simple background that represents the social setting.
3. Add characters that reflect familiar people or roles from the child's daily life.
4. Use block-based coding to program basic actions such as moving, speaking, or waiting.
5. Add short recorded voice messages or text-based cues to explain each social step.
6. Arrange the code blocks to reflect the correct sequence of the social situation.
7. Test the story to ensure the actions and messages are clear and predictable.
8. Use the interactive story together with the child and revise it if needed.

ScratchJr allows teachers to present social situations in a playful and structured way. By controlling when characters move or speak, children can better understand social sequences and expectations. This platform is especially suitable for young learners who are interested in technology and benefit from hands-on interaction.

Instruction for how to use ScratchJr in detail:

https://www.youtube.com/watch?v=D-nW4jvzRr8 (General)

https://www.youtube.com/watch?v=WGhart5oFck (For social story creation)

Channels:

https://www.youtube.com/@ZonxScratch

https://www.youtube.com/@learnwithhirday7835

3.2.8 Visual Design Guidance for Digital Social Stories

When designing Digital Social Stories, teachers should carefully consider how visual and multimedia elements influence children's comprehension, attention, and emotional engagement. While digital tools offer many possibilities, excessive or overly complex visual elements may create cognitive overload, especially for children with Autism Spectrum Disorder (ASD).

For this reason, educators are encouraged to reflect on several key design questions when creating Digital Social Stories.

Story Length

Digital Social Stories should remain short, clear, and focused on a single social situation or skill. Stories that are too long may reduce attention and make it more difficult for children to understand the central message. Teachers may consider:

- Does the story focus on one specific situation?
- Are the sentences simple and easy to follow?
- Can the story be understood within a few minutes?

In many cases, 5–10 slides or scenes may be sufficient to explain a typical classroom situation.

Visual Complexity

Visual elements should support understanding rather than distract attention. Teachers may reflect on the following questions:

- Are the images clear and easy to interpret?

- Do the visuals directly relate to the situation described in the story?
- Is the number of visual elements on each slide limited?

Simple and consistent visual designs are generally more effective for children who benefit from structured and predictable learning environments.

Use of Voice Narration

Voice narration may enhance accessibility for children who benefit from auditory support or who are still developing reading skills. When using narration, teachers may consider:

- Is the narration clear and calm?
- Is the speech pace slow enough for the child to follow?
- Does the narration match the visual content?

In some cases, hearing the voice of a familiar teacher or caregiver may increase the child's sense of comfort and engagement.

Animation vs. Static Images

Both animated and static visual elements can be effective depending on the learning context. Teachers may reflect on the following considerations:

- Do animations help illustrate the situation more clearly?
- Could animation create distraction or sensory overload?
- Would static images make the story easier to follow?

In many situations, simple static images or photographs of real environments may be the most effective option, particularly for younger children or those who prefer predictable visual structures.

To ensure that Digital Social Stories remain clear, supportive, and accessible, visual and multimedia elements should always serve the pedagogical purpose of the story rather than becoming the main focus of the learning activity.

When designing Digital Social Stories, teachers may unintentionally introduce elements that make the story more difficult to understand or follow. The table below summarizes some common design mistakes and provides practical recommendations to help educators create clear, accessible, and pedagogically effective Digital Social Stories.

Table 3.1. Common Design Mistakes in Digital Social Stories and How to Avoid Them

Common Design Mistake	Why It Can Be Problematic	Recommended Practice
Stories that are too long	Long stories may reduce attention and make it difficult for children to understand the main idea.	Focus on one specific situation and keep the story short (typically 5–10 scenes).
Too many visual elements on one slide	Excessive visual information may create cognitive overload and distract from the key message.	Use simple visuals with limited elements on each slide.
Abstract or unclear images	Children with ASD may find abstract images difficult to interpret.	Use clear illustrations, photographs, or simple graphics that directly represent the situation.
Fast animations or excessive motion	Rapid visual movement may distract attention or create sensory discomfort.	Use minimal and slow animations only when they support understanding.
Mismatch between narration and visuals	When narration and images do not correspond, the child may struggle to follow the story.	Ensure that narration clearly matches what is shown on the screen.
Too many colours or decorative elements	Highly decorative layouts may make it harder for the child to focus on the main information.	Use consistent colours and simple layouts that support visual clarity.
Overly directive language	Stories that sound like commands may reduce engagement and increase resistance.	Use supportive language such as “I can try…” or “Sometimes I may…”.

3.2.9 Ethical Considerations in Using Digital Social Stories

The integration of digital tools into Social Story development offers significant opportunities for personalization, accessibility, and engagement. However, the use of digital media in educational settings also raises important ethical considerations. When creating Digital Social Stories for children with Autism Spectrum Disorder (ASD), teachers should carefully reflect on issues related to privacy, consent, and inclusive representation. Addressing these ethical aspects helps ensure that Digital Social Stories are not only pedagogically effective but also respectful of children’s rights, dignity, and individual identities.

Privacy and Data Protection

Digital Social Stories often include photographs, videos, or voice recordings from real classroom environments. When using such materials, educators must ensure that children's privacy is protected. Teachers should consider the following questions:

- Are identifiable images of children used in the story?
- Are the digital materials stored securely?
- Who has access to the digital story?

Whenever possible, teachers should avoid sharing Digital Social Stories that include identifiable student information outside the educational context in which they were created.

Informed Consent

When Digital Social Stories include photographs, videos, or voice recordings of children, it is essential to obtain informed consent from parents or legal guardians.

Consent procedures should clearly explain:

- the purpose of the Digital Social Story,
- how the materials will be used,
- where the story will be stored or shared.

In some cases, it may also be appropriate to involve the child in the decision-making process by explaining the story creation process in a developmentally appropriate way.

Inclusive Representation

Digital Social Stories should reflect diversity and inclusivity in the way characters, environments, and social situations are represented. Teachers are encouraged to ensure that stories:

- represent children with different abilities, backgrounds, and identities,
- avoid stereotypes,
- present social interactions in respectful and supportive ways.

Inclusive representation can help children feel recognized and valued within the learning environment.

Ethical Use of Digital Tools

When using digital platforms or AI-supported tools for story creation, teachers should also consider issues such as data security, platform reliability, and responsible use of technology. Educational professionals are encouraged to select tools that:

- respect data protection standards,
- are appropriate for educational use,
- allow safe storage and editing of materials.

The ethical use of digital technologies is an essential component of responsible educational practice. By considering privacy, consent, and inclusive representation, teachers can ensure that Digital Social Stories support not only social-emotional development but also ethical and respectful learning environments.

Cultural Adaptation in Visual Design

Visual elements in digital social stories — including images of people, settings, foods, clothing, classroom furniture, and greeting behaviours — are culturally embedded. When designing a DSS for children from diverse linguistic or cultural backgrounds, educators should ensure that the visual representations reflect the child's familiar environment rather than defaulting to culturally dominant defaults. Where photographic materials are used, images should be selected or produced to reflect the ethnic, cultural, and contextual diversity of the classroom population. This consideration aligns with broader principles of inclusive design and is particularly relevant in multilingual and multicultural European educational settings.

3.3. Reflection Questions

1. Design Principles and Format Selection

- Reflect on how do pedagogical goals influence the choice of a digital format (video, photo, illustration, animation, coding-based, or AI-supported)?
- Consider whiv learner characteristics (cognitive level, sensory profile, communication style, interests) should guide the selection of a specific technology?
- How can you ensure that the chosen format supports learning objectives rather than simply adding visual appeal?

2. Alignment with Social Story Principles

- How can digital social stories maintain fidelity to core social story writing principles (clarity, perspective-taking, structured language)?
- In what ways might multimedia elements strengthen comprehension, and in what ways could they create distraction?
- How can you evaluate whether a digital adaptation still preserves the educational integrity of the original method?

3. Personalization, Accessibility, and Inclusion

- How can digital tools enhance individualization while maintaining structure and predictability?
- What strategies can be used to ensure accessibility for children with different sensory or communication needs?
- What ethical considerations should be taken into account when using personal photographs, avatars, or AI-generated materials?
- How can collaboration with families support culturally and contextually appropriate story design?

4. Interactivity and Engagement

- When does interactivity support learning (e.g., attention, motivation, skill practice), and when might it increase cognitive load?
- How can cause–effect elements in coding-based platforms support understanding of social sequences?
- How would you balance engagement features with simplicity and clarity?

5. Tool Selection and Practical Implementation

- What criteria should guide the selection of a specific platform or software?
- How can educators with limited technical experience gradually develop competence in digital story creation?
- What practical challenges may arise during implementation in early childhood or inclusive settings?

6. Evaluation and Critical Reflection

- Does the use of technology automatically improve the effectiveness of a social story? Why or why not?

- How would you evaluate the impact of a digital social story on a child's social-emotional learning?
- What indicators (behavioral, emotional, engagement-based) could be used to assess effectiveness in practice?

While Chapter 3 focuses on the design and technological aspects of Digital Social Stories, the next chapter examines how these stories can be integrated into everyday classroom practice.

CHAPTER 4. INTRODUCING DIGITAL SOCIAL STORIES IN THE CLASSROOM

Chapter Overview

This chapter focuses on the practical integration of Digital Social Stories (DSS) into everyday educational practice. While previous chapters introduced the theoretical foundations of Social Stories and the principles of digital design, this chapter addresses how educators can effectively use DSS within classroom routines and inclusive learning environments.

DSS are most effective when embedded in authentic contexts and linked to clearly defined social-emotional learning goals. The chapter therefore presents strategies for selecting appropriate topics based on the developmental and social-emotional needs of children with ASD. It also explores the importance of collaboration with parents and caregivers, whose insights can support the relevance and consistency of interventions across home and school environments.

In addition, the chapter discusses practical approaches to integrating Digital Social Stories into daily classroom routines. Rather than being used as isolated activities, DSS can function as part of a broader pedagogical strategy that supports predictability, communication, and emotional regulation. Through examples, practical guidelines, and reflective prompts, educators are encouraged to consider how Digital Social Stories can become a sustainable element of inclusive teaching practice.

Chapter Aims

After completing this chapter, readers will be able to:

- Identify appropriate topics for Digital Social Stories based on children's social-emotional learning needs.
- Recognise situations in which Digital Social Stories can effectively support behaviour and social understanding.

- Understand the value of collaboration with parents and caregivers when designing and implementing Digital Social Stories.
- Integrate Digital Social Stories into everyday classroom routines and inclusive teaching strategies.
- Reflect on how Digital Social Stories can support participation, communication, and emotional regulation in children with ASD.

Key Principles for Using Digital Social Stories in educational settings

Effective use of Digital Social Stories in educational settings is guided by several core pedagogical principles:

- **Clarity of purpose** – Each story should address a clearly defined social-emotional objective.
- **Connection to real contexts** – Stories should reflect situations that occur in the child's everyday classroom experience.
- **Simplicity of design** – Visual and narrative elements should remain clear, predictable, and minimally distracting.
- **Integration into classroom routines** – Digital Social Stories are most effective when used as preparatory or supportive tools within everyday activities.
- **Consistency and repetition** – Repeated exposure helps children internalise the social meaning presented in the story.
- **Reflection and adaptation** – Teachers should monitor the child's response and adapt the story when necessary.

4.1 Selecting Topics Based on Target Social-Emotional Skill

The effectiveness of a Digital Social Story largely depends on selecting a topic that reflects the real experiences and developmental needs of the child. Social Stories should address situations that are meaningful, challenging, or confusing for the child, particularly those involving social interaction, transitions, or emotional regulation.

In early childhood classrooms, children with ASD may experience difficulties interpreting social cues, anticipating changes in routine, or understanding the perspectives

of others. Digital Social Stories can help clarify expectations and provide structured guidance for navigating these situations.

When selecting a topic, educators should first identify the **target social-emotional skill** they wish to support. This may include:

- waiting for one's turn during group activities
- asking for help when needed
- understanding classroom routines
- participating in cooperative play
- managing transitions between activities
- recognising and expressing emotions appropriately

Observations of children's behaviour in daily classroom situations can provide valuable insights into which topics may be most beneficial. Teachers may also consider recurring situations that generate stress, confusion, or frustration for a child.

An effective topic should meet several criteria:

- it reflects a real and frequently occurring situation
- it focuses on one clear social or behavioural objective
- it is relevant to the child’s daily environment
- it offers opportunities for positive behavioural modelling

By carefully selecting topics that are both meaningful and achievable, educators can ensure that Digital Social Stories support gradual learning and skill development.

The following table presents examples of common classroom situations in early childhood settings and possible Digital Social Story topics that teachers may develop to support children’s social-emotional development. Identifying appropriate topics for Digital Social Stories is a key step in supporting children's social-emotional development. In early childhood educational settings, social stories are often used to address recurring classroom situations that may be challenging for children with ASD.

Table 4.1. Examples of Digital Social Story Topics in Early Childhood Educational Settings

Classroom Situation	Target Social Skill	Example Social Story Topic	Possible Digital Elements
Transition between activities	Coping with change	"When It Is Time to Clean Up and Start a New Activity"	animation, visual timer
Waiting during group activities	Self-regulation	"Waiting for My Turn in Circle Time"	narration, simple illustrations
Joining peer play	Social initiation	"How I Can Join My Friends' Game"	photo-based story
Sharing materials	Cooperation	"Sharing Toys with Friends"	interactive images
Coping with noise	Sensory regulation	"What I Can Do When the Classroom Is Loud"	audio cues
Asking for help	Communication skills	"How I Can Ask My Teacher for Help"	voice narration
Losing a game	Emotional regulation	"It Is Okay Not to Win Every Game"	animated emotions
Following classroom rules	Understanding expectations	"Our Classroom Rules Help Everyone Learn"	visual symbols

4.1.1 Step-by-Step Guide: Creating a Digital Social Story

Designing an effective Digital Social Story requires careful planning that takes into account the child's developmental profile, the social context, and the educational goals of the story. The following step-by-step guide provides teachers with a practical framework for creating Digital Social Stories that are clear, supportive, and pedagogically meaningful.

Step 1: Identify the Social Situation

The first step is to identify a specific social situation that may be challenging for the child. This situation should be connected to the child's everyday experiences in the classroom or school environment.

Examples of common situations include:

- waiting for one's turn
- joining peer play
- coping with transitions between activities
- asking for help
- following classroom routines

Clearly defining the situation helps ensure that the story addresses a real and meaningful learning need.

Step 2: Define the Learning Goal

After identifying the situation, teachers should determine the target social-emotional skill that the story aims to support.

The learning goal should be:

- specific
- observable
- relevant to the child's daily functioning

For example:

Instead of a general goal such as *"improve social skills,"* the goal may be defined as:

"The child will wait for their turn during group activities."

Clear learning goals help guide both the story design and the evaluation of its effectiveness.

Step 3: Gather Relevant Information

Before creating the story, it is helpful to gather information about the situation and the child's experiences.

Teachers may consider:

- when the situation usually occurs
- who is involved
- what typically happens
- what the child finds difficult
- what strategies may support the child

This step ensures that the story reflects authentic classroom situations and aligns with the child's individual needs.

Step 4: Write the Social Story

The next step is to write the narrative using clear, simple, and supportive language.

Following the principles of Social Stories, the text should include:

- descriptive sentences explaining the situation
- perspective sentences describing how others may feel
- directive sentences suggesting possible responses
- control sentences supporting self-regulation

The tone of the story should be calm, reassuring, and respectful.

For example:

“Sometimes during circle time, many children want to speak. My teacher chooses one child at a time. I can wait for my turn. When I wait, everyone can listen and share their ideas.”

Step 5: Add Digital Elements

Digital Social Stories can be enhanced by incorporating multimedia elements that support comprehension and engagement.

Possible digital elements include:

- photographs of real classroom environments
- simple illustrations
- voice narration
- animations
- interactive elements

These elements can make the story more engaging and accessible, particularly for children who benefit from visual supports and multimodal learning.

Step 6: Present the Story to the Child

The story should be introduced in a calm and supportive learning environment.

Teachers may:

- read the story together with the child
- discuss the events described in the story
- ask simple reflective questions
- allow the child to explore the digital elements

At this stage, the goal is to support understanding and familiarity with the situation, rather than expecting immediate behavioural change.

Step 7: Use the Story in Real Situations

After introducing the story, teachers should provide opportunities for the child to apply the strategies described in the story.

This may include:

- reminding the child of the story before the situation occurs
- referring to visual elements from the story
- encouraging the child to try the suggested strategies

Repeated exposure to the story helps strengthen the connection between the narrative and real-life experiences.

Step 8: Observe and Reflect

Finally, teachers should observe the child's behaviour and reflect on whether the story supports the intended learning goal.

Teachers may consider:

- Did the child understand the situation better?
- Did the child attempt the target behaviour?
- Does the story need adjustments?

Based on these observations, the Digital Social Story may be revised or expanded.

4.2 Involving Parents and Caregivers

Collaboration with parents and caregivers can significantly enhance the effectiveness of Digital Social Stories. Families often have valuable insights into a child's communication style, emotional responses, and daily routines outside the classroom. Including these perspectives allows educators to design stories that are more personalised and contextually meaningful.

Parents may contribute in several ways:

- providing information about situations that are challenging at home
- suggesting familiar language or expressions used by the child
- sharing photographs or videos that can be incorporated into the story
- reinforcing the story at home through repeated viewing and discussion

Consistency between home and school environments is particularly important for children with ASD. When a Digital Social Story is used both in the classroom and at home, the child receives repeated exposure to the same narrative and behavioural expectations. This repetition can strengthen comprehension and support the generalisation of learned skills across contexts.

Communication between educators and parents may take different forms, including brief meetings, digital communication platforms, or shared learning journals. The goal is not to transfer responsibility to families but to create a collaborative partnership that supports the child's social and emotional development.

By involving parents and caregivers in the process, Digital Social Stories become part of a broader support system surrounding the child.

4.3 Integrating Digital Social Stories into Daily Practice

For Digital Social Stories to be effective, they should be integrated naturally into classroom routines rather than used only as occasional interventions. Consistent use allows children to become familiar with the story structure and apply the strategies presented in the narrative to real-life situations.

Educators can introduce Digital Social Stories at different moments of the school day, for example:

- before a challenging situation occurs (e.g., before group activities or transitions)
- during structured learning time, as part of social-emotional learning activities
- after an event, to reflect on what happened and discuss appropriate responses

Short and focused viewing sessions are usually most effective, particularly for young children. The story can be presented on a tablet, interactive board, or computer, depending on available resources. Educators may accompany the story with brief explanations or prompts to support comprehension.

In addition to viewing the story, teachers can reinforce the key message through everyday interactions. For example, when the relevant situation occurs, the teacher might remind the child of the strategy presented in the story. Over time, adult prompts should gradually decrease to encourage independent use of the learned behaviour.

Successful integration of Digital Social Stories often includes:

- repetition across multiple contexts
- consistent language and visual cues

- reinforcement of positive behaviour
- opportunities for children to practice the target skill

When used consistently, Digital Social Stories can become a natural and supportive element of classroom routines that promote inclusion and emotional well-being.

Case Example: Using a Digital Social Story to Support Turn-Taking

In a preschool classroom, the teacher observed that a five-year-old child with ASD experienced difficulty waiting for their turn during group activities. During circle time and shared games, the child frequently attempted to speak out of turn or became frustrated when another child was selected first.

To support this situation, the teacher developed a **Digital Social Story focused on turn-taking**. The story included simple images of children sitting together, short sentences describing the classroom routine, and visual cues illustrating how children wait for their turn. The narrative emphasised calm waiting, raising a hand, and speaking when invited. The Digital Social Story was presented on a tablet shortly before circle time. The teacher briefly discussed the key message of the story and encouraged the child to remember the strategy shown in the narrative.

During the following weeks, the story was used regularly before group activities. The teacher also reinforced the strategy by gently reminding the child of the story when turn-taking situations occurred. Gradually, the child began to wait longer before speaking and showed increased awareness of classroom turn-taking rules.

This example illustrates how a carefully designed DSS can support children in understanding social expectations and practicing appropriate behaviours within everyday classroom routines. The following table and integration cycle provide additional examples and practical guidance for embedding DSS consistently into teaching practice.

Table 4.2. Examples of Digital Social Story Topics and Target Skills

Classroom Situation	Target Social-Emotional Skill	Possible Story Focus
Waiting during group activities	Turn-taking and patience	"I can wait for my turn."
Transition from playtime to classroom work	Managing transitions	"When playtime ends, I move to the table."

Classroom Situation	Target Social-Emotional Skill	Possible Story Focus
Asking for help	Communication and self-advocacy	"I can ask my teacher for help."
Sharing toys with peers	Cooperation and social interaction	"We can share toys when we play."
Joining group activities	Social participation	"I can join my friends in the game."
Managing frustration	Emotional regulation	"When I feel upset, I can take a calm breath."
Following classroom routines	Understanding expectations	"This is our morning routine."
Working with a partner	Collaboration	"We can work together."

These examples illustrate how Digital Social Stories can address a wide range of social-emotional learning goals commonly encountered in early childhood classrooms.

Teacher Tip

Introduce the Digital Social Story shortly before the situation it describes. This helps children connect the narrative with real-life experiences and increases the likelihood that the strategy will be applied in practice.

4.3.1. DSS Classroom Implementation Model

A Structured Approach to Introducing Digital Social Stories in Educational Settings

The effective use of Digital Social Stories (DSS) in educational environments requires a structured process that helps teachers connect the child's needs, the social situation, and the pedagogical intervention. To support teachers in systematically introducing DSS into classroom practice, the following DSS Classroom Implementation Model is proposed. This model outlines a sequence of practical steps that guide teachers from identifying a social-emotional learning need to monitoring behavioral change and refining the intervention. The model emphasizes reflective teaching, continuous observation, and adaptation to the individual profile of the child.

DSS Classroom Implementation Model

1. Identify the target behaviour or skill
2. Define the social context
3. Design the digital social story

4. Introduce the story to the child
5. Practice through guided interaction
6. Observe behavioural change
7. Adjust and refine the story

This cyclical process ensures that Digital Social Stories are not used as isolated activities but as part of a responsive and reflective teaching strategy.

4.3.2. Step-by-Step DSS Classroom Implementation Model

1. Identify the Target Behaviour or Skill

The first step is to identify a specific social-emotional behaviour or skill that the child needs to develop. This behaviour should be observable, meaningful in the child's everyday environment, and connected to situations that frequently occur in the classroom. Examples may include:

- waiting for one's turn during group activities
- asking for help appropriately
- joining peer play
- coping with transitions between activities
- managing frustration during difficult tasks

Clearly identifying the target behaviour helps ensure that the Digital Social Story is focused and relevant. Teachers should also consider the possible underlying causes of the behaviour, such as social misunderstanding, sensory overload, anxiety, or executive functioning difficulties.

2. Define the Social Context

Once the target behaviour has been identified, the next step is to analyse the social context in which the behaviour occurs.

Teachers should consider questions such as:

- When does the situation occur?
- Where does it take place?
- Who is involved?
- What expectations are present in the situation?
- What difficulties does the child experience?

Understanding the context helps ensure that the Digital Social Story reflects real-life situations that are familiar and meaningful to the child. This step also supports the alignment of the story with the child's daily classroom experiences.

3. Design the Digital Social Story

Based on the identified behaviour and social context, the teacher develops the Digital Social Story. At this stage, the story should include:

- a clear description of the situation
- perspectives of other people involved
- possible strategies the child can use
- supportive and reassuring language

Digital elements may include:

- photographs or illustrations
- simple animations
- voice narration
- interactive elements

When designing the story, it is important to maintain clarity, simplicity, and predictability, ensuring that the story remains accessible and emotionally supportive for the child.

4. Introduce the Story to the Child

After the story has been created, it should be introduced to the child in a calm and supportive environment. The introduction may include:

- reading or watching the story together
- discussing the situation described in the story
- answering the child's questions
- encouraging the child to relate the story to their own experiences

At this stage, the goal is not to demand immediate behavioural change but to support understanding of the social situation and expectations.

5. Practice Through Guided Interaction

Following the introduction of the story, the teacher should provide opportunities for the child to practice the target behaviour in real or simulated situations. Guided practice may include:

- role-playing activities
- structured classroom situations
- modelling by the teacher or peers
- verbal prompts or visual reminders

This step helps bridge the gap between the narrative understanding of the situation and the real-life application of the behaviour.

6. Observe Behavioural Change

Observation plays a key role in evaluating the effectiveness of the Digital Social Story. Teachers should monitor:

- whether the child attempts the target behaviour
- how frequently the behaviour occurs
- whether the child requires prompts or support
- how the child reacts emotionally in the situation

Short observation notes or checklists may help document behavioural progress over time.

7. Adjust and Refine the Story

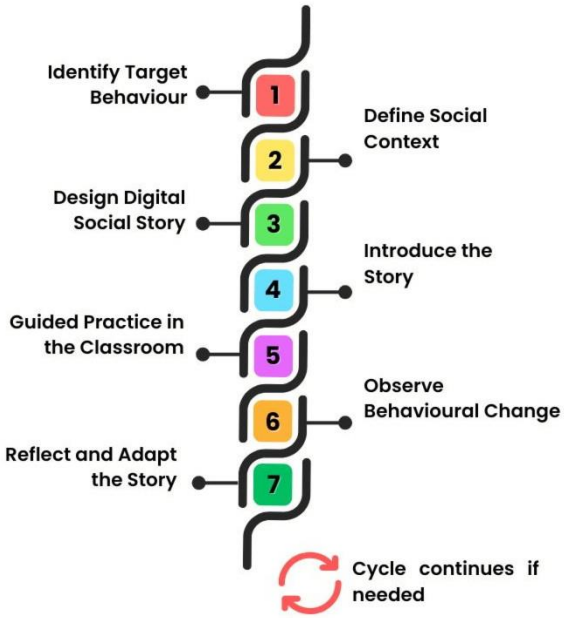
Digital Social Stories should be treated as flexible learning tools that evolve according to the child's needs. If the story does not lead to the expected change, teachers may consider:

- simplifying the story
- adding visual supports
- clarifying social expectations
- adjusting the context of the story
- increasing opportunities for guided practice

This final step reinforces the reflective nature of the model and supports continuous pedagogical improvement.

Figure 4.1.

DSS Classroom Implementation Cycle



The DSS Classroom Implementation Cycle illustrates a structured process for integrating Digital Social Stories into classroom practice. Rather than treating social stories as isolated activities, this model emphasizes a cyclical and reflective approach that supports continuous adjustment to the child's needs and classroom context.

The cycle begins with the identification of a specific target behaviour or social-emotional skill that the teacher intends to support.

This behaviour should be clearly observable and connected to situations that regularly occur in the educational environment.

The next stage involves defining the social context, including the setting, participants, and expectations present in the situation. Understanding the context helps ensure that the digital social story accurately reflects real-life experiences that the child encounters in the classroom. Based on this analysis, the teacher proceeds to design the digital social story,

incorporating clear descriptions of the situation, perspectives of others, and possible strategies the child may use.

Digital elements such as images, narration, and simple animations may enhance engagement and comprehension. Once created, the story is introduced to the child in a supportive and calm environment, often through shared reading or viewing with the teacher. This stage focuses on building understanding rather than immediately expecting behavioural change.

Following the introduction, the child engages in guided practice within classroom activities, where the teacher provides opportunities to apply the strategies presented in the story. Role-play, modelling, and visual reminders may support the child during this stage. The teacher then observes behavioural changes, documenting whether the target behaviour appears, how frequently it occurs, and whether the child requires prompts or additional support.

Figure 4.2

Digital Social Stories Implementation Model in the Classroom

Finally, the teacher engages in reflection and adaptation, revising the digital story or the implementation strategy if necessary. This reflective stage reinforces the cyclical nature of the model and ensures that Digital Social Stories remain responsive to the child's developmental needs. By following this structured cycle, educators can integrate Digital Social Stories into everyday classroom practice in a purposeful and reflective way,

supporting the social-emotional development and inclusive participation of children with Autism Spectrum Disorder.

4.3.3. Practical Classroom Scenarios

To help teachers understand how Digital Social Stories can be used in real educational contexts, the following classroom scenarios illustrate typical situations that may occur in early childhood settings. These examples demonstrate how educators may use Digital Social Stories to support the social-emotional development of children with Autism Spectrum Disorder (ASD). The scenarios are intended as practical illustrations rather than fixed procedures. Teachers are encouraged to adapt these strategies according to the individual needs of the child, the classroom environment, and the specific social learning goals.

Scenario 1 – Waiting for One's Turn

Situation

During circle time, children are encouraged to take turns speaking. A child with ASD frequently interrupts others and becomes frustrated when asked to wait.

Teacher Strategy

1. The teacher develops a short Digital Social Story titled *"Waiting for My Turn."*
2. The story explains that during circle time each child has an opportunity to speak while others listen.
3. Visual elements illustrate children raising their hands and waiting.
4. The teacher reviews the story with the child before the activity begins.
5. During the activity, the teacher gently reminds the child of the strategy presented in the story and reinforces successful waiting behaviour.

Scenario 2 – Joining Peer Play

Situation

During free play activities, a child with ASD tends to observe peers but rarely joins their games. When the child attempts to participate, misunderstandings sometimes occur.

Teacher Strategy

1. The teacher creates a Digital Social Story titled *"How I Can Join My Friends' Game."*

2. The story describes simple strategies such as asking “Can I play with you?” or waiting for a turn.
3. The story includes pictures of children sharing toys and playing together.
4. The teacher reviews the story before free play begins.
5. During playtime, the teacher encourages the child to try the phrases or actions described in the story.

Scenario 3 – Coping with Transitions Between Activities

Situation

A child with ASD becomes upset when classroom activities suddenly change, for example when it is time to stop playing and start a structured learning task.

Teacher Strategy

1. The teacher prepares a Digital Social Story titled *“When It Is Time to Change Activities.”*
2. The story explains that activities sometimes change during the school day.
3. Visual supports illustrate cleaning up toys and moving to the next activity.
4. The teacher reviews the story shortly before transition times.
5. The teacher reinforces the routine by using the same visual cues shown in the story.

These scenarios illustrate how Digital Social Stories can support children’s understanding of everyday classroom situations and help teachers translate theoretical principles into practical teaching strategies.

4.3.4. Teacher Quick Checklist

Is My Digital Social Story Effective?

Teachers can use the following checklist to review whether a Digital Social Story is clear, supportive, and appropriate for the child’s needs. The checklist may be used during story development or after implementation in the classroom.

1. Clarity of the Situation

☐ The story describes a specific and realistic situation.

☐ The setting of the situation (where and when it happens) is clearly explained.

☐ The characters involved in the situation are easy for the child to recognise.

2. Alignment with the Child's Needs

☐ The story addresses a real difficulty or learning need experienced by the child.

☐ The language used in the story matches the child's developmental level.

☐ The story considers the child's interests and experiences.

3. Structure of the Social Story

☐ The story includes descriptive sentences explaining what happens.

☐ The story includes perspective sentences describing how others may feel.

☐ The story includes supportive guidance about possible responses.

☐ The tone of the story is positive, respectful, and reassuring.

4. Use of Digital Elements

☐ Visual elements (photos, illustrations, or animations) help clarify the situation.

☐ Digital elements are simple and not visually overwhelming.

☐ Audio or narration supports the child's understanding when appropriate.

☐ The digital format is easy for the child to navigate.

5. Implementation in the Classroom

☐ The story was introduced in a calm and supportive environment.

☐ The teacher discussed the story with the child.

☐ The child had opportunities to practice the behaviour in real situations.

6. Observation and Reflection

☐ The teacher observed the child's responses after using the story.

☐ The teacher considered whether the story helped the child understand the situation better.

☐ The story can be adapted or improved if needed.

This checklist supports teachers in reflecting on the quality and effectiveness of Digital Social Stories. By reviewing the clarity of the narrative, the relevance to the child's needs, the use of multimedia elements, and the implementation process, teachers can ensure that Digital Social Stories remain meaningful and responsive tools for supporting social-emotional development in inclusive classroom settings.

4.4. Reflection Questions

1. Selecting Appropriate Topics

- Reflect on classroom situations where children may experience confusion, frustration, or difficulty during social interactions. Which of these situations might be suitable topics for a Digital Social Story?
- Consider how you usually identify the social-emotional skills that require support in your classroom. How might these observations guide the selection of a topic for a Digital Social Story?
- Think about the importance of focusing on a single behavioural objective. How might narrowing the focus of a story influence children's understanding and learning?

2. Understanding Classroom Context

- Reflect on the daily routines in your classroom. Which moments of the day may be particularly challenging for children who need additional support in understanding social expectations?
- Consider how classroom structure, transitions, or group activities influence children's behaviour and emotional responses. In what ways might Digital Social Stories help children anticipate and navigate these situations?
- Think about how visual and narrative supports might contribute to creating a more predictable and secure learning environment for children with ASD.

3. Collaboration with Parents and Caregivers

- Reflect on the potential role of parents and caregivers in the development of Digital Social Stories. How might their perspectives enrich the design and relevance of a story?
- Consider how information from families about routines, interests, or communication styles could influence the personalisation of a story.
- Think about how collaboration with families might support consistency between home and school environments. In what ways could this consistency strengthen children's understanding and use of social-emotional skills?

4. Integration into Daily Classroom Practice

- At what moments of the school day could Digital Social Stories be introduced most effectively (e.g., before activities, during transitions, or after events)?
- How can educators integrate Digital Social Stories into existing classroom routines without disrupting the flow of learning activities?
- What strategies can teachers use to gradually reduce prompts and encourage independent application of the strategies presented in the story?

5. Supporting Social-Emotional Learning

- How can Digital Social Stories help children understand social expectations, emotions, and appropriate responses in everyday interactions?
- In what ways can repetition and consistency support the internalisation of behaviours presented in the story?
- How might teachers reinforce the messages of a Digital Social Story through everyday classroom interactions?

6. Monitoring and Reflecting on Practice

- Reflect on how you usually observe and interpret changes in children's behaviour during classroom activities. How might these observations inform the evaluation of a Digital Social Story?
- Consider what kinds of changes in participation, emotional responses, or independence might suggest that a story is supporting the child's development.
- Think about how educators might adapt or redesign a Digital Social Story when it does not appear to produce the expected outcomes.
- Reflect on how ongoing reflection and observation can support the continuous improvement of teaching strategies involving Digital Social Stories.

CHAPTER 5. EVALUATING THE EFFECTIVENESS OF DIGITAL SOCIAL STORIES

Chapter Overview

Digital social stories are increasingly used as structured, technology-mediated supports for children with Autism Spectrum Disorder (ASD). They combine narrative predictability with controlled multimedia elements, allowing for personalization, repeated access, and systematic monitoring of outcomes. Unlike printed stories, digital formats enable flexible adaptation, integration of audio-visual supports, and structured data collection to evaluate impact.

However, technology alone does not guarantee effectiveness. The impact of digital social stories depends on their alignment with clear goals, narrative quality, implementation fidelity, and sensitivity to the child's developmental and sensory profile. Therefore, evaluation must go beyond subjective impressions and include structured observation, baseline comparison, and reflective analysis.

This chapter presents a multidimensional framework for evaluating digital social stories, focusing on:

- engagement and usability,
- comprehension and skill development,
- behavioral and emotional outcomes,
- implementation fidelity,
- usability and accessibility,
- structured observation and peer review tools.

The chapter also introduces practical instruments developed within the EARLY ASD project to support systematic assessment in educational settings.

Chapter Aims

By the end of this chapter, readers will be able to:

1. Understand key dimensions of effectiveness in digital social stories (engagement, comprehension, behavioral outcomes, fidelity).
2. Apply structured tools to assess baseline behavior and intervention impact.
3. Evaluate usability and accessibility features in relation to the child's profile.
4. Use observation forms to document short-term and follow-up outcomes.
5. Engage in peer-based reflective evaluation to improve digital social story design and implementation.
6. Make data-informed decisions about revising, continuing, or adapting a digital social story.

5.1 Effectiveness Dimensions

Digital social stories effectiveness is best understood through a multidimensional lens that considers engagement, comprehension, behavioral outcomes, and implementation quality, grounded in empirical evidence (Camilleri, Maras, & Brosnan, 2022).

From an engagement and accessibility perspective, digital social stories align well with common cognitive and sensory profiles associated with ASD. Visual sequencing, consistent layout, and adjustable pacing reduce uncertainty and support anticipatory understanding. Multimedia elements, such as images, narration, and limited interactivity, can enhance attention when they are directly tied to instructional goals (Seker, 2016).

Large-scale app-based research using the SOFA platform found that younger children and those with stronger verbal abilities reported higher enjoyment and comprehension, with particularly positive responses among autistic females and gender-diverse participants (Smith et al., 2023). These findings indicate that adaptive design features are central to accessibility and that engagement varies meaningfully across user groups.

Comprehension and skill acquisition constitute a second key dimension of effectiveness. Digital platforms allow structured repetition combined with active responding through quizzes, prompts, and comprehension checks (Nichols, Hupp, Jewell, & Zeigler, 2005). Pre- and post-intervention data show that such features are associated with measurable gains in understanding social expectations. Evidence from earlier SOFA-based research

suggests that older children benefit especially from embedded assessment tools, which promote reflection and reinforce learning through immediate feedback (Smith et al., 2021). This supports the view that digital social stories function not only as explanatory narratives but also as guided learning environments.

Behavioral and social outcomes provide strong support for applied impact. Single-subject and small-scale experimental studies have documented increases in targeted behaviors during digital social story interventions (Reynhout & Carter, 2007). For example, a pilot study conducted in the United Arab Emirates reported improvements in classroom-related behaviors, such as raising hands and sharing toys, among two students with ASD during the intervention phase (Safi et al., 2021). Similarly, a randomized controlled trial involving nine children found significant improvements in social behavior that were maintained at a six-week follow-up (Swaggart et al., 2021). Field-based studies further indicate reduced anxiety and improved situational understanding during real-world events when digital social stories are used as preparatory supports (Camilleri, Maras, & Brosnan, 2024).

Implementation fidelity and practitioner competence substantially influence outcomes. Digital tools can support consistent delivery by providing structured templates and guided development processes (Qi, Barton, Collier, Lin, & Montoya, 2018). Research examining the experiences of educators and parents using digitally mediated social stories found improved confidence and more positive attitudes toward their use, suggesting that these tools can enhance the quality of intervention delivery as well as learner outcomes (Swaggart et al., 1995; Karal & Wolfe, 2018). This dual effect distinguishes digital social stories from less structured traditional approaches.

Table 5.1. Effectiveness Dimensions

Dimension	Description	Quantitative Indicators	Qualitative Indicators
Engagement and Accessibility	Level of attention and usability	Duration of story engagement (minutes); number of sessions completed	Child's expressed interest; voluntary return to the story; emotional responses during viewing
Comprehension and Skill Acquisition	Understanding of social content	Correct responses to embedded comprehension prompts; pre-post knowledge scores	Child's verbal explanation of story content; spontaneous application of story vocabulary

Dimension	Description	Quantitative Indicators	Qualitative Indicators
Behavioural and Social Outcomes	Observable behaviour change	Frequency of target behaviour pre- and post-intervention; frequency of adult prompts required	Quality of social interaction; child's emotional tone; peer responses; caregiver reports
Implementation Fidelity	Consistency and quality of delivery	Adherence to implementation schedule; checklist completion rates	Educator reflections on challenges; observed contextual adaptations; family feedback

Source: Self-generated based on cited literature; qualitative indicators adapted from Camilleri, Maras, & Brosnan (2022) and Kratochwill et al. (2013).

Despite these benefits, design and access challenges remain. Poorly structured content, excessive animation, or unclear language can overwhelm users and reduce effectiveness. In addition, limited access to devices and insufficient training for caregivers and educators continue to restrict broader adoption (Safi et al., 2021). These constraints highlight the need for clear design standards, professional development, and equitable access.

Overall, current evidence suggests that digital social stories are a robust and flexible support for children with ASD when they are carefully designed, individualized, and implemented with fidelity. Their effectiveness derives not from their digital format alone, but from how technology is used to support engagement, comprehension, and meaningful behavior change.

5.2. Baseline Checklist and Evaluation Tools

The EARLY ASD project developed a series of check lists to ensure that the digital stories that were created reflect evidence-based principles of narrative design and digital accessibility before use with a child. Digital social stories are structured, individualized tools that explain social situations and expectations in ways that are clear and supportive for children with autism spectrum disorder (ASD). Their effectiveness depends on careful attention to language, structure, personalization, visuals, and measurable outcomes (Camilleri, Maras, & Brosnan, 2022).

5.2.1. Digital Social Story Checklist

The checklist's items guide developers to maintain a positive, simple narrative; match the content to the child's age, needs, and preferences; use familiar characters and realistic visuals; and select digital platforms that align with the child's sensory and motor abilities.

It also foregrounds intentional implementation by emphasizing measurable goals and accessible features such as audio narration for non-readers.

The key elements of a digital social story checklist are presented below. The checklist outlines the criteria used to review the quality and suitability of a digital social story draft before implementation (see Appendix 4.1). It focuses on both the narrative content and the digital design features, reflecting best practices for social story development.

The first group of items addresses language and tone. The checklist emphasizes maintaining a consistently positive tone and using simple, clear language throughout the story. These criteria ensure that the content is accessible and does not introduce unnecessary emotional load. Attention is also given to age appropriateness and alignment with the child's individual needs and preferences, reinforcing the importance of individualized design rather than generic storytelling.

Several items focus on the structural integrity of the story. The title is expected to clearly reflect the story's purpose, while the distribution of the four types of social story sentences is reviewed to ensure balance. The checklist also highlights the avoidance of absolute terms such as "always" or "never," which can increase anxiety, and encourages the use of a first-person perspective to support self-relevance and comprehension. Personalization is further reinforced through alignment with the child's specific challenges and daily experiences.

Another section of the checklist evaluates realism and visual clarity. The use of familiar characters, locations, and routines is assessed to promote transfer of learning to real-life situations. Visual elements are expected to be simple, free of distracting backgrounds, and organized so that each storyboard cell presents a single idea or step. The inclusion of real or relatable images is encouraged to strengthen understanding and recognition.
Digital and sensory considerations are also addressed. The checklist examines whether appropriate audio narration is included to support children who are not yet readers and whether the selected digital platform is suitable for the child's sensory and motor abilities. Identifying the platform used adds transparency and allows for reflection on tool choice in relation to the child's profile.

Finally, the checklist considers outcomes by asking whether the story supports measurable emotional, communicative, or behavioral goals. This criterion ensures that the digital social story is not only well designed but also purposeful, with clear links to observable and meaningful outcomes for the child.

5.2.2 Peer Review Form

A new evaluation tool is the peer-review form designed to support the systematic evaluation of developed digital social stories before they are used with children with autism spectrum disorder (see Appendix 4.2). Peer review serves a dual purpose in this context. First, it functions as a quality assurance mechanism, helping to identify strengths and areas for refinement in the story's content, structure, and digital design. Second, it promotes reflective practice among students and practitioners by encouraging them to assess social stories against shared, evidence-based criteria rather than personal preference.

Digital social stories are most effective when they are clear, predictable, and closely aligned with a child's developmental level, needs, and daily experiences. Even well-intentioned stories can lose their effectiveness if language is too complex, visuals are distracting, or multimedia elements overwhelm rather than support understanding. The peer-review form therefore focuses on both narrative quality and digital suitability, ensuring that stories remain supportive, accessible, and purposeful. By inviting reviewers to judge each criterion as "Yes," "Partially," or "No," the form allows for nuanced feedback and acknowledges that story development is often an iterative process.

The final reflective prompt encourages reviewers to think beyond compliance and consider how the story could be improved through revision or reorganization. In this way, the form supports continuous improvement and reinforces the principle that digital social stories should evolve in response to informed feedback and the child's changing needs.
There were several elements taken into consideration when developing the peer review. The first criterion examines whether the sentences in the story are simple, clear, and developmentally appropriate. This component ensures that language complexity matches the child's cognitive and linguistic abilities. Clear sentences reduce misunderstanding and

cognitive load, allowing the child to focus on the social meaning rather than decoding language.

The second criterion evaluates whether the story addresses a specific problem, routine, or social skill relevant to the child's needs. Social stories are most effective when they are narrowly focused. This item checks that the story has a clear purpose and responds to an identifiable situation in the child's life, rather than addressing abstract or unrelated behaviors.

The appropriateness of the title is assessed next, with particular attention to avoiding direct references to anxiety-provoking problems. A neutral or supportive title helps frame the story positively and reduces anticipatory stress before the child engages with the content.

The use of first-person perspective is reviewed to determine whether the story supports identification and empathy. Writing from the child's point of view helps personalize the narrative and strengthens the connection between the story and the child's own experiences.

Tone consistency is another key component. This criterion ensures that the story maintains a positive and supportive tone throughout, helping the child feel safe and understood. A calm and reassuring tone is especially important for children who experience anxiety in social situations.

Closely related is the avoidance of words expressing certainty, such as "always" or "never." This item checks whether the story allows flexibility and acknowledges that situations can vary. Avoiding absolute language reduces pressure and helps prevent rigid thinking.

The checklist also assesses whether the story includes a balanced distribution of the four sentence types: descriptive, perspective, directive, and control. This balance is central to social story methodology, ensuring that the story explains situations, acknowledges feelings, offers gentle guidance, and supports self-regulation without becoming prescriptive.

Visual design is addressed through two criteria. The first examines whether real or relatable images are used to enhance understanding, supporting recognition and generalization to real-world contexts. The second focuses on visual simplicity, ensuring that backgrounds and details do not distract from the main message.

Audio narration is evaluated to confirm that the story is accessible to non-readers or emerging readers. Appropriate narration supports comprehension and allows children to engage with the story independently or with reduced adult mediation. The role of multimedia is considered more broadly by assessing whether audio, video, and images enhance clarity and engagement without overwhelming the child. This component emphasizes purposeful use of digital features rather than novelty.

Another criterion examines whether the digital tool or platform is appropriate for the child's sensory and motor abilities. This includes considerations such as ease of navigation, responsiveness, and sensory intensity, which can significantly affect usability. Narrative coherence is addressed through the evaluation of story flow. A simple and intuitive sequence helps the child follow the scenario step by step, reinforcing predictability and understanding. Also, the ability to pause, replay, or review the story is also reviewed. This feature supports repetition, self-paced learning, and regulation, allowing the child to return to parts of the story as needed.

Finally, the open-ended reflective item invites reviewers to suggest changes or rearrangements they would make if they had created the story themselves. This component encourages constructive feedback and deeper engagement with the design process, reinforcing the idea that digital social stories benefit from collaboration, reflection, and ongoing refinement.

5.2.3. Usability and Accessibility Strategies

In creating the digital social story usability and accessibility index we focused on usability and accessibility as core conditions for the effective use of digital social stories with young children with autism spectrum disorder. While content accuracy and personalization are essential, a social story can only achieve its intended impact if it is

easy to use, adaptable, and compatible with the child's sensory, cognitive, and contextual needs. This checklist translates these principles into practical criteria that support consistent review and quality assurance of digital social stories before implementation.
The checklist is closely aligned with the aims of the EARLY ASD project, an Erasmus+ initiative that promotes early, evidence-based support for children with ASD through the use of digital social stories in educational settings. The project emphasizes the role of preservice teachers and educators in designing and applying digital tools that are both pedagogically sound and accessible in real classrooms. Within this framework, usability and accessibility are not treated as technical add-ons, but as integral features that determine whether a digital social story can be meaningfully embedded in daily routines, teaching activities, and early intervention practices.

By addressing aspects such as language clarity, sensory compatibility, adaptability, and routine integration, this checklist supports reflective practice among educators and caregivers. It encourages developers to consider not only whether a story is well written, but whether it can be reused, scaled, and sustained across contexts, children, and learning environments. In doing so, it contributes to the broader EARLY ASD goal of strengthening inclusive, practical, and developmentally appropriate digital supports in early education.

The structure of the criteria for the digital social story usability and accessibility consists of several components (see Appendix 4.3). The first component examines whether the story template is handy and reusable for other story creations. A clear and well-structured template allows educators to efficiently develop multiple social stories without redesigning the format each time. Reusability supports consistency across stories, reduces preparation time, and aligns with sustainable practice, especially in early childhood and inclusive education settings where time and resources are limited.

The second component focuses on the use of clear, simple, and age-appropriate language. This criterion ensures that sentence structure, vocabulary, and tone match the child's developmental level. Simple language reduces cognitive load, supports comprehension, and minimizes the risk of misinterpretation. Age appropriateness also helps maintain relevance and engagement, particularly for young children in early intervention contexts.

The third component assesses compatibility with the child's sensory profile. Children with ASD often have heightened or reduced sensory sensitivities, making features such as sudden sounds, fast transitions, or visually busy animations potentially distressing. This item ensures that auditory, visual, and interactive elements are predictable, calm, and adjustable, supporting emotional regulation and sustained attention.

The fourth component evaluates whether the story length matches the child's attention span. Digital social stories should be concise enough to maintain focus while still conveying the necessary information. Overly long stories can lead to disengagement, while stories that are too brief may lack clarity. This criterion encourages developers to balance completeness with brevity, based on individual attention capacities.

The final component considers the ease with which the story can be integrated into daily routines or teaching activities. Digital social stories are most effective when they are embedded naturally into transitions, classroom activities, or preparation for specific events. This item ensures that the story is practical to use in real settings, supports consistency, and can be revisited as part of routine learning rather than being treated as an isolated intervention.

Together, these components provide a focused framework for evaluating the usability and accessibility of digital social stories. They reinforce the principle that effective digital supports must be easy to use, adaptable, and responsive to the lived realities of children with ASD, their educators, and their learning environments.

5.3 Graphical Analysis and Observation

5.3.1 Social Story Impact Observation Form

The Social Story Impact Observation Form (see Appendix 4.4) is designed to support systematic, practice-based evaluation of a digital social story used with an individual child. While digital social stories are widely applied as preparatory and instructional supports for children with autism spectrum disorder (ASD), their effectiveness cannot be assumed. Meaningful evaluation requires structured observation that captures change over time, links behavior to specific story content, and accounts for contextual factors such as setting, emotional state, and adult support.

This observation form provides a coherent framework for documenting baseline behavior, engagement with the digital story, immediate behavioral responses, and longer-term outcomes following repeated exposure. It is intended for use by educators, therapists, or trained caregivers during real interactions with a child, rather than as a retrospective or impressionistic judgment. By separating observation into clearly defined phases, the form helps distinguish between pre-existing behavior patterns, short-term effects of story exposure, and emerging generalization or independence.

The structure of the form reflects core principles of evidence-based practice. It emphasizes observable behavior, functional goals, and consistency across sessions, while remaining flexible enough to accommodate individual differences among children with ASD. When used consistently, the form supports informed decision-making, including whether a story should be revised, continued, or replaced, and how it can be better aligned with the child's needs.

The components of this form consist of five different parts. The first part requires general information where it is established the contextual foundation for the observation. Recording the observer's name and date ensures accountability and allows observations to be compared across time or between professionals. Using the child's initials or a code protects confidentiality while maintaining continuity across records. Age and setting provide essential developmental and environmental context, as behavior and engagement may differ significantly between home, classroom, or therapy settings.

Documenting the title of the social story and the specific target behavior or skill clarifies the focus of the observation and anchors all subsequent judgments to a defined intervention goal. The second part captures the child's behavior before exposure to the digital social story. The frequency of the target behavior establishes a baseline against which later change can be measured. This may include how often a challenging behavior occurs or how consistently a desired skill is demonstrated.

Recording the child's typical emotional state helps contextualize behavior, as anxiety, fatigue, or overstimulation may influence responsiveness. Identifying triggers or problem situations highlights environmental or situational factors that the story is intended to

address. The notes section allows the observer to record additional contextual details that may affect interpretation, such as recent changes in routine or adult prompts. The third part focuses on how the child interacts with the digital social story itself. Engagement is a prerequisite for learning, and this section captures multiple indicators of attention and involvement. Observers note whether the child shows interest, such as sustained attention or willingness to remain with the story.

Following visuals or narration reflects basic comprehension and sensory accessibility. Verbal or nonverbal responses, including gestures, comments, or facial expressions, suggest active processing rather than passive exposure.

The final criterion examines whether the child connects the story content to personal experience, which is a key mechanism for transfer of learning. The Yes, Partially, or No scale allows nuanced judgment, while the notes section supports qualitative description.

In the fourth part it is examined the immediate behavioral outcomes following story exposure. Observers document whether the child demonstrates the target behavior after the story, indicating short-term effectiveness. Applying a strategy or solution shown in the story reflects functional understanding rather than rote recall. Changes in emotional regulation, such as reduced distress or increased calm, provide insight into the story's emotional impact.

The final item captures the level of adult support required, distinguishing between independent application and reliance on prompts. Together, these indicators help determine whether observed changes are meaningful and attributable to the story. Not least, the Follow-Up (After Several Sessions) addresses longer-term impact and generalization, which are critical for judging intervention value.

Changes in the frequency of the target behavior over time indicate whether progress is sustained rather than temporary. Generalization to other settings assesses whether the child can apply the learned behavior beyond the original context. Independence in behavior reflects the child's ability to self-initiate and self-regulate without adult cues. The final section invites suggestions for next steps, such as revising story content,

adjusting visuals, fading adult support, or targeting a new skill. This ensures that observation leads directly to informed instructional planning.

Together, these components form a comprehensive observation framework that links digital social story design to real-world outcomes. When used consistently, the Observation form (see Appendix 4.4) supports reflective practice, data-informed adaptation, and more effective use of digital social stories in early and ongoing ASD intervention.

5.3.2 Interpreting Observation Data and Linking Findings to Practice

Collecting structured observation data is a necessary but not sufficient condition for evidence-informed practice. The interpretive step — making meaning from what has been observed — is equally important, and often more challenging. This section provides practical guidance on how to read, interpret, and act upon the data gathered through the observation tools introduced in this chapter.

Moving from Data to Decision

The observation forms described in this handbook generate both quantitative and qualitative information. Quantitative indicators — such as the frequency of a target behaviour before and after DSS exposure — provide a useful index of change over time. However, frequency counts alone do not tell the full story. A child may reduce the number of outburst episodes during transitions, for example, while simultaneously showing increased anxiety or social withdrawal — changes that would only be visible through careful qualitative observation.

Educators are therefore encouraged to interpret frequency data *alongside* qualitative field notes, documenting not only *whether* a behaviour occurred, but *how* the child appeared during the situation: their emotional state, level of self-initiation, need for adult prompting, and the quality of the social interaction (not merely its presence or absence). This richer picture more accurately reflects the child's developing competence.

Common Patterns in Observation Data and What They Suggest

The following guidance is offered as a framework for interpreting common patterns that may emerge during DSS observation:

Table 5.2 Observations, Interpretations and Suggested Responses

Observation Pattern	Possible Interpretation	Suggested Response
Target behaviour increases only with adult prompting	The child understands the expected behaviour but has not yet internalised the strategy	Maintain the story and gradually fade prompts; introduce brief role-play practice
Target behaviour improves in the story context but not in real situations	The narrative has not yet transferred to the lived context	Present the story immediately before the relevant situation; use consistent cue language in both contexts
Child engages attentively with the story but shows no change in behaviour	The story may be addressing understanding rather than skill	Review whether the directive sentences are sufficiently concrete and actionable
Rapid improvement followed by regression	Progress may be sensitive to changes in routine, adult consistency, or sensory conditions	Review contextual factors; check for changes in classroom environment or adult mediation
Sustained improvement that generalises to other settings	The strategy has been internalised and is being applied flexibly	Consider extending the target or introducing a new DSS focused on a related skill

The Role of Qualitative Insight in Evaluation

Quantitative data capture the *what* of behavioral change; qualitative insight captures the *why* and the *how*. In the evaluation of DSS, qualitative evidence may include:

- the child's verbal comments about the story ("I know what to do now" or "I don't like this part");
- observed changes in emotional tone, facial expression, or body language during and after story presentation;
- the child's spontaneous reference to story content in real-life situations ("Like in the story!");
- parent or caregiver reports of changes at home that correspond to the DSS focus area;
- peer responses that suggest increased social inclusion or improved interaction quality.

These qualitative signals often precede measurable behavioural change, and their absence may be equally informative — suggesting that the story has not yet connected meaningfully with the child's experience. Educators are encouraged to include brief

qualitative notes alongside frequency data, using the "notes" field of the observation form to record contextual impressions, child self-reports, and environmental factors.

Linking Evaluation Findings to Instructional Decisions

Evaluation data should directly inform the next cycle of implementation. The following decision-making prompts may support this process:

- *If the child shows engagement but limited behavioural transfer:* revise the story to include more explicit, actionable directive sentences; present the story closer in time to the target situation.
- *If the child shows limited engagement with the story itself:* review the digital format (animation pace, audio quality, visual complexity) and the degree to which the story is personalised to the child's interests and experiences.
- *If the child shows improvement that plateaus:* consider whether the initial target behaviour has been sufficiently consolidated, and whether a new story addressing a related, more complex skill may be appropriate.
- *If the child shows improvement that is not maintained:* investigate whether the classroom conditions have changed (new adult, altered routine, peer group changes) and consider whether reinforcement strategies need to be strengthened or adapted.

This interpretive cycle — observe, reflect, decide, adapt — mirrors the broader reflective implementation cycle presented in Chapter 6, and should be understood as a professional practice rather than a bureaucratic reporting task. The purpose of evaluation is not to produce a judgment about whether the DSS "worked," but to generate the specific, actionable knowledge needed to continue supporting the child effectively.

Practice Note: From Numbers to Narrative — Integrating Quantitative and Qualitative Evidence

Effective evaluation of Digital Social Stories is not simply a matter of counting behaviour. Research on single-case intervention design consistently emphasises that visual analysis of data trends – attending to the direction, magnitude, and stability of change — provides a richer and more reliable picture than isolated frequency counts (Kratochwill et al., 2013; Parker et al., 2009). In practice, this means plotting target behaviours across sessions,

looking for patterns of improvement, stability, or regression, and asking whether changes in the data correspond meaningfully to changes in the child's qualitative experience.
Qualitative notes recorded alongside frequency data – including the child's emotional state, verbal comments, and the conditions present on any given day — are not supplementary to the evaluation process. They are an integral part of it. A child who increases appropriate turn-taking from one to three instances per session, while simultaneously becoming more relaxed and self-initiated in social situations, is showing a richer picture of progress than the frequency count alone would suggest. Conversely, a child who meets a frequency target while showing increased distress or reduced spontaneity may be performing the behaviour without internalising the underlying social understanding.

Educators are encouraged to bring both quantitative and qualitative data to any collaborative review — with colleagues, with families, or with support specialists — to ensure that instructional decisions are grounded in a full and contextually sensitive picture of the child's development.

5.3.3 Peer Review for Improvement

The Peer Review for Improvement (see Appendix 4.5), is designed to structure reflective, evidence-informed feedback on the use of digital social stories in preschool settings. Within early autism intervention, observation alone is insufficient. Meaningful improvement depends on systematic reflection, shared criteria, and constructive dialogue between practitioners.

This peer feedback sheet supports that process by guiding students to analyze teaching practices in a focused, professional, and ethically responsible manner. The form aligns with principles promoted in early ASD education initiatives, including the emphasis on intentional design, responsiveness to the child, and measurable outcomes. By framing peer review as a tool for improvement rather than evaluation, the annex encourages critical thinking, collaborative learning, and professional growth. It also reflects the EARLY-ASD project's focus on preparing future educators to use digital social stories thoughtfully, linking pedagogical decisions to observable child responses and longer-term behavioral regulation.

The structure of the peer feedback sheet ensures that reviewers attend to both strengths and limitations of a preschool experiment. It balances recognition of effective practice with targeted suggestions for refinement, helping students learn how to assess digital interventions not only on technical quality but on their real impact on children's engagement, understanding, and behavior.

The first section identifies the reviewer and establishes accountability for the feedback provided. Including the reviewer's name reinforces professionalism and encourages thoughtful, respectful commentary. It also allows the recipient to seek clarification or follow-up discussion, supporting peer dialogue and shared learning.

The strengths section prompts reviewers to identify two to three positive aspects of the digital social story teaching practice. This component directs attention to what is working well, which is essential for reinforcing effective strategies. Reviewers are encouraged to consider how the digital tool was used, the quality of interactive storytelling, and the child's level of interest and responsiveness during the activity. Observations may also include evidence of improved behavior regulation after the story and, where possible, indications that the target behavior persisted beyond the immediate session. Focusing on strengths helps normalize reflective practice and prevents feedback from becoming deficit-oriented.

The third section, the areas for improvement, invites reviewers to identify two to three areas where the teaching practice could be strengthened. The emphasis is on being specific and constructive, rather than critical or vague. Reviewers might comment on aspects such as pacing, clarity of language, alignment between the story and the child's needs, or the way the digital platform was managed. By isolating concrete areas for improvement, this section supports actionable reflection and helps peers understand how adjustments in design or delivery could enhance outcomes.

The final section translates reflection into action. Reviewers are asked to propose at least one clear, practical suggestion that the peer can implement. This may involve modifying the story structure, adjusting visual or audio elements, increasing opportunities for interaction, or refining the target behavior goal. This component is central to the annex's

purpose, as it moves beyond analysis toward improvement. Well-formulated suggestions demonstrate professional judgment and contribute directly to the development of more effective digital social story practices.

All in all, these components create a coherent framework for peer review that supports learning, accountability, and continuous improvement in early ASD interventions using digital social stories.

5.4. Reflection Questions

1. Engagement and Comprehension

- How can you tell if a child is actively engaged with a digital social story?
- What strategies help assess whether the story content is understood and applied by the child?
- How does repetition and embedded feedback influence comprehension and skill acquisition?

2. Behavioural and Social Outcomes

- Which observable behaviours or social responses indicate the story is having an effect? How would you distinguish a meaningful change from a temporary or context-specific response?
- How can you distinguish short-term reactions from lasting behaviour change? What observation strategies might help you track change over several weeks rather than relying on single-session impressions?
- What role does adult support play in facilitating meaningful behavioural outcomes? At what point might adult prompting begin to mask the child's independent progress?
- What might it mean if a child shows improved behaviour in structured situations but not in unstructured ones? How would you adjust your approach?
- In addition to frequency counts of target behaviours, what qualitative signals — such as changes in the child's emotional tone, self-initiated use of strategies, or spontaneous reference to story content — might indicate that the DSS is having a meaningful impact?

- How might parent or caregiver observations at home complement your classroom observation data? What collaborative information-sharing structures could support this?

3. Implementation Fidelity and Usability

- How can educators ensure that the digital story is delivered consistently and as intended?
- What design or platform features influence usability and accessibility for different children?
- How can observation and peer feedback help refine story delivery and content?

4. Reflection and Improvement

- When should a story be revised or adapted based on observations?
- How can structured peer review and reflective practice improve the effectiveness of digital social stories?
- What ethical or practical considerations arise when implementing and evaluating digital interventions?

5. Critical Perspective on Technology

- Does the use of technology automatically increase effectiveness? Why or why not?
- What conditions must be met for digital tools to genuinely support social-emotional learning?
- How can educators balance innovation with pedagogical rigor?

CHAPTER 6. APPLYING DIGITAL SOCIAL STORIES IN PRACTICE: MODELS AND REFLECTIVE DEVELOPMENT

Chapter Overview

This chapter bridges theory, evaluation, and classroom practice. While Chapters 1–5 cover foundations, design principles, technologies, assessment, and practical strategies for classroom use of Digital Social Stories (DSS), this chapter focuses on DSS reflective implementation in early childhood and inclusive settings, and professional learning.

It presents a cyclical implementation model emphasizing planning, design, introduction, monitoring, reflection, and adaptation. DSS are positioned as part of a broader inclusive pedagogical framework rather than standalone activities.

Key features include:

- systematic classroom integration,
- case-based learning,
- monitoring learner progress,
- structured reflection,
- professional adaptation and continuous development.

The chapter is organized around a cyclical implementation model that structures planning, classroom use, monitoring, reflection, and adaptation.

The chapter aligns with the EARLY-ASD project framework, supporting both preservice teacher education and micro-credential pathways, and connects practical tools with prior theoretical and evaluation chapters.

Chapter Aims

By the end of this chapter, readers will be able to:

1. Implement Digital Social Stories in real educational contexts using a structured, cyclical process.
2. Integrate DSS into daily classroom routines and inclusive teaching strategies.

3. Apply case-based templates to support professional reasoning and pedagogical decisions.
4. Monitor learner progress using structured observation tools.
5. Engage in structured reflection to improve implementation and adapt stories.
6. Identify and respond to common implementation challenges effectively.
7. Understand how professional reflection and collaboration enhance DSS use over time.

6.1. Digital Social Story Implementation Cycle

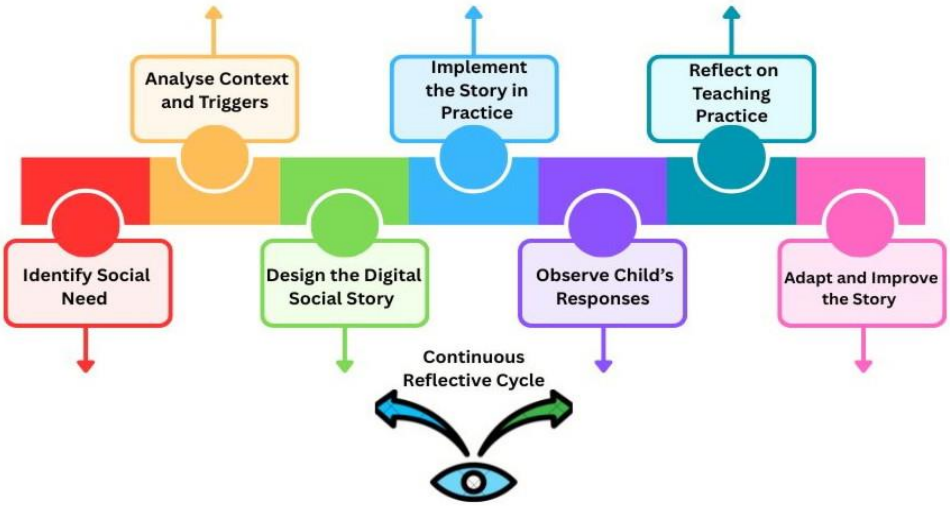
The effective use of Digital Social Stories should not be conceptualized as a linear procedure but rather as a cyclical and iterative process. Accordingly, implementation should not be limited to presenting a single story within the classroom context; instead, it should be approached as a recursive pedagogical process encompassing the stages of planning, implementation, observation, reflection, and adaptation. Such an approach not only enhances the effectiveness of Social Stories as an intervention but also strengthens teachers' professional judgement and evidence-informed decision-making.

Digital Social Story Implementation Cycle

1. **Plan:** Identify the target social-emotional skill and define the situational context in which the skill is expected to occur.
2. **Design:** Structure the story in alignment with the child's developmental, linguistic, and sensory characteristics.
3. **Introduce:** Present the story at an appropriate moment within a predictable routine or structured instructional context.
4. **Implement:** Support the application of the target skill within the natural classroom environment and provide modelling when necessary.
5. **Monitor:** Observe the child's engagement, level of comprehension, and changes in the target behaviour.
6. **Reflect:** Analyse the implementation process by considering what was effective, what challenges emerged, and which pedagogical decisions proved most appropriate.
7. **Adapt:** Revise the story, its mode of presentation, visual elements, timing, or the level of adult support based on the observations obtained.

This cyclical model aligns with contemporary literature suggesting that Social Stories tend to be more effective in early childhood contexts when they are linked to concrete, clearly defined goals and embedded within authentic learning situations. Moreover, research highlights that social narratives do not function uniformly across all children; therefore, systematic monitoring and contextual adaptation are essential components of effective implementation. The following sections operationalize this cyclical model in classroom planning, case-based learning, integration, monitoring, and reflection.

Figure 6.1. Digital Social Story Reflective Implementation Cycle



The implementation of Digital Social Stories (DSS) in educational practice should be understood as a reflective and adaptive process rather than a one-time instructional intervention.

The Digital Social Story Reflective Implementation Cycle provides a structured framework that supports teachers in systematically planning, implementing, and evaluating the use of digital social stories in real classroom contexts.

The cycle begins with identifying a social-emotional need observed in the child's behaviour or interaction with peers and adults. Teachers may notice difficulties related to waiting, sharing, understanding social rules, coping with change, or managing emotional reactions. In the second stage, teachers analyse the context and potential triggers of the

behaviour. This includes examining environmental conditions, social expectations, sensory factors, and communication demands present in the situation.

Understanding these contextual variables helps educators design more relevant and supportive interventions. Based on this analysis, teachers proceed to design the Digital Social Story, ensuring that the narrative clearly describes the situation, acknowledges the perspectives of others, and presents possible coping strategies in a supportive and accessible format.

The next step involves implementing the story in practice, typically through shared reading, digital presentation, or guided discussion with the child. Teachers may also integrate the story into daily routines or use it before situations that may be challenging for the child.

After implementation, educators observe the child's responses, focusing on behavioural changes, emotional reactions, and the child's level of engagement with the story. Observation is followed by reflection on teaching practice, where teachers evaluate whether the story effectively supports the child's understanding and behaviour. This stage encourages educators to consider whether adjustments to the story or the learning environment may be necessary.

Finally, the story may be adapted and improved based on these observations and reflections. The cycle then repeats, supporting continuous pedagogical improvement and individualized learning support. This reflective cycle highlights that Digital Social Stories function most effectively when integrated into ongoing observation, reflection, and adaptation within inclusive educational environments.

6.2. Planning the Use of Digital Social Stories

Effective implementation begins with intentional and pedagogically grounded planning. Digital Social Stories should always be aligned with clearly defined social and emotional learning objectives and based on an understanding of the child's developmental profile.
Planning involves:

- identifying a specific target skill or behaviour,

- analysing the learner's strengths, needs, and contextual factors,
- ensuring developmental appropriateness and clarity of content,
- aligning the story with classroom routines and educational goals,
- considering ethical principles, accessibility, and inclusivity.

Systematic planning ensures coherence between objectives, narrative structure, and classroom practice. It increases the likelihood that the Digital Social Story will function as a meaningful educational support rather than an isolated activity.

6.3. Implementation Strategies in Early Childhood Settings

Implementation refers to the structured use of Digital Social Stories within daily educational practice. In early childhood contexts, stories may be introduced during transitions, structured activities, group interactions, or individual support sessions.

Key principles of effective implementation include:

- consistency in presentation and language,
- predictable integration into routines,
- supportive adult mediation when necessary,
- reinforcement of positive social understanding,
- sensitivity to the child's emotional responses.

Digital Social Stories should form part of a broader inclusive pedagogical framework. Their effectiveness increases when they are embedded within a stable, supportive, and developmentally responsive classroom environment.

6.3.1 Common Implementation Challenges and Possible Solutions

The effectiveness of Digital Social Stories depends not only on the content of the story itself but also on implementation fidelity and contextual appropriateness. Some challenges encountered during implementation do not necessarily indicate that the method is ineffective.

In many cases, the difficulty arises from factors such as the timing of the story, the mode of presentation, the sensory load of the digital format, or a weak connection between the story and the target behaviour. In this context, several common challenges and possible solutions can be identified:

- **The child shows little interest in the story:** The story may be too long, visually overloaded, or insufficiently connected to the child's interests. In such cases, the story should be shortened and redesigned using visuals that are more engaging and meaningful for the child.
- **The story appears to be understood but does not translate into behaviour:** The connection between the narrative and the real-life situation may be weak. The story should therefore be presented immediately before the target situation and supported with brief adult prompts within the natural context.
- **The child can apply the strategy only with adult prompts:** This may indicate that independent use of the strategy has not yet developed. In such cases, shorter repetitions and a gradual fading of prompts should be planned to support the development of independence.
- **The digital presentation overstimulates the child:** Rapid transitions, unexpected sounds, or highly animated screens may increase sensory load. Simpler, slower, and more predictable digital designs should therefore be preferred.
- **The skill appears only in a single context:** Generalization may be limited. The same story should be systematically reused across multiple contexts, such as at home, in the play area, during small-group activities, or in individual work settings.

In educational interventions, implementation fidelity—that is, the extent to which an intervention is delivered as originally designed—represents a critical variable when interpreting outcomes. Similarly, Social Stories tend to be more effective when they are not used as isolated tools but are integrated into everyday routines and supported by complementary strategies within authentic learning situations.

6.4. Case-Based Learning and Practical Templates

This section provides structured case-based examples that support systematic documentation and reflective professional thinking. Together, these cases represent a range of implementation contexts, including preschool and early childhood classrooms, mainstream primary and secondary settings, and specialist early intervention environments. The cases also illustrate a diversity of ASD profiles, from minimally verbal children with significant sensory processing needs to verbally fluent children with

camouflaged presentations and co-occurring anxiety. This diversity is intentional: it reflects the heterogeneity of the autism spectrum and resists any single-profile assumption that may otherwise limit the applicability of the DSS approach.

Each case is presented using a consistent structure that includes context of implementation, ASD profile, social-emotional goal, key design features, implementation strategy, observation, and reflection. Using structured templates encourages analytical reasoning and supports the development of professional judgement. Case-based learning strengthens the connection between theory and practice by promoting contextual analysis and intentional decision-making. Readers are encouraged to identify the specific design and implementation decisions in each case that are most relevant to their own professional contexts, and to use the reflection questions at the close of this chapter as a prompt for transfer.

6.4.1 Case Example: Supporting the Skill of Waiting for One's Turn

Context:

A five-year-old child diagnosed with Autism Spectrum Disorder (ASD) experiences difficulty waiting for their turn during group activities. In particular, during shared table activities, the child tends to reach for materials before their turn, interrupt peers while they are speaking, or withdraw from the activity altogether.

Target Skill:

To develop the ability to wait for one's turn during short group activities and to use an appropriate verbal expression while waiting.

Purpose of the Digital Social Story:

The Digital Social Story aims to help the child understand when waiting behavior is expected, recognize that others also need a turn, and learn what actions can be taken while waiting. The story communicates this information through clear, visually supported, and reassuring language.

Design Features:

- Short sentences and simple visual elements were used.
- The story consists of six scenes/pages.
- Each scene communicates a single key message.

- The final scene presents two actionable strategies, such as:
  "While I am waiting, I can keep my hands on my knees," and
  "When it is my turn, I can start speaking."

Implementation:

The story was presented on a tablet immediately before the group activity with the teacher's guidance. Subsequently, the teacher connected the narrative to the real classroom context by using the prompt *"Now it is time to wait for our turn."*

Observation:

During the first week, the child demonstrated waiting behavior only with adult reminders. In the second week, the child independently waited for their turn during two activities. By the third week, the child began to partially apply the same strategy in the play corner.

Reflection:

The Social Story proved more effective when combined with appropriate timing, explicit cues, and brief adult support rather than being used as a standalone intervention. Therefore, Social Stories should be integrated into classroom routines and used as a preparatory tool prior to relevant activities rather than as isolated instructional materials. Case-based learning supports preservice teachers in bridging the gap between theoretical knowledge and practical application while fostering context-sensitive pedagogical reasoning. Research on teacher education indicates that case-based approaches are particularly effective for developing decision-making skills and situational judgement in complex educational contexts.

6.4.2 Case Example: Joining Peer Play

Situation

During free play time, a child with Autism Spectrum Disorder (ASD) often watches peers playing but rarely joins the activity. When the child attempts to enter the play situation, misunderstandings may occur, and peers may not know how to respond. As a result, the child may withdraw or become frustrated.

Social-Emotional Goal

The goal of the intervention is to support the child in learning how to initiate interaction with peers and join ongoing play activities in a socially appropriate way.

Digital Social Story Focus

A Digital Social Story titled *"How I Can Join My Friends' Game"* is created. The story explains that children sometimes play together and that it is possible to ask to join the activity. It introduces simple strategies such as saying "Can I play with you?" or waiting for a suitable moment to enter the game.

The story includes photographs or illustrations of children playing together, emphasizing cooperation, turn-taking, and positive peer interaction.

Implementation Strategy

The teacher introduces the Digital Social Story before free play begins. The story is reviewed with the child in a calm and supportive setting. During playtime, the teacher observes the child's attempts to approach peers and gently prompts the strategies presented in the story when necessary.

Observation and Reflection

The teacher observes whether the child attempts to approach peers, ask to join the game, or stay engaged in play for a longer period. Observations are recorded to evaluate progress and determine whether the Digital Social Story needs to be adapted or reinforced.

6.4.3 Case Example: Asking for Help

Situation

A child with ASD sometimes becomes frustrated when encountering difficulties during classroom tasks. Instead of asking for help, the child may stop working, withdraw from the activity, or show signs of distress.

Social-Emotional Goal

The aim is to help the child develop a clear and accessible strategy for requesting assistance when needed.

Digital Social Story Focus

A Digital Social Story titled *"How I Can Ask for Help"* explains that sometimes tasks can be difficult and that teachers and classmates can provide support. The story introduces simple phrases such as "Can you help me?" or "I need help with this."

Visual elements illustrate a child raising their hand or approaching the teacher.

Implementation Strategy

The teacher presents the Digital Social Story before learning activities that may require assistance. During classroom tasks, the teacher encourages the child to use the strategies

presented in the story and provides positive reinforcement when the child successfully requests help.

Observation and Reflection

The teacher observes whether the child begins to request assistance more frequently and whether frustration during challenging tasks decreases. Adjustments to the story may be made to better reflect the child's experiences.

6.4.4 Case Example: Coping with Noise in the Classroom

Situation

In busy classroom environments, noise levels may increase during group work, transitions, or free play. A child with ASD may experience sensory overload in these situations and respond by covering their ears, withdrawing, or becoming distressed.

Social-Emotional Goal

The goal is to support the child in recognizing and managing sensory discomfort related to noise.

Digital Social Story Focus

A Digital Social Story titled *"What I Can Do When the Classroom Is Loud"* explains that classrooms can sometimes become noisy and that this can feel uncomfortable. The story introduces strategies such as moving to a quiet corner, using headphones, or asking the teacher for a short break.

Visual supports illustrate the strategies available to the child.

Implementation Strategy

The teacher introduces the Digital Social Story during a calm moment in the day. Before situations likely to involve increased noise levels, the teacher reminds the child of the strategies described in the story.

Observation and Reflection

The teacher observes whether the child begins to use coping strategies independently or with minimal prompting. Observations help determine whether the strategies effectively support the child's regulation.

6.4.5 Case Example: Coping with Changes in Classroom Routine

Situation

Children with ASD may experience stress when daily routines change unexpectedly. For example, a planned activity may be cancelled, a substitute teacher may be present, or the class schedule may change.

Social-Emotional Goal

The goal is to support the child in understanding that changes sometimes occur and to develop strategies for adapting to them.

Digital Social Story Focus

A Digital Social Story titled *"Sometimes Our Plans Change"* explains that schedules may occasionally change at school. The story reassures the child that teachers will explain the changes and help students understand what will happen next.

The story also introduces coping strategies such as asking questions or checking a visual schedule.

Implementation Strategy

The teacher introduces the Digital Social Story when discussing classroom routines and revisits the story when upcoming changes are expected. The story helps prepare the child for flexibility in daily activities.

Observation and Reflection

The teacher observes the child's reactions to routine changes and evaluates whether the story helps reduce anxiety and improve adaptation to new situations.

6.4.6 Case Example: Navigating Lunch Break Social Rules (Age 8–9, Primary School)

Context:

An eight-year-old boy with Autism Spectrum Disorder attends a mainstream primary school in his third year. His language and cognitive abilities are age-appropriate; however, he experiences significant difficulty interpreting unspoken social rules during unstructured times of the day, particularly during the lunch break. He often stands at the edge of peer groups, attempts to join conversations at unexpected moments, or responds to jokes with confusion, which leads to social misunderstandings and occasional peer conflict.

His teacher notes that the child's challenges are less visible during structured lessons, where rules are clear and adult-mediated. The most significant difficulties emerge in semi-structured or unstructured environments where implicit social expectations govern interaction.

ASD Profile:

The child demonstrates strong verbal and academic skills, meeting or exceeding grade-level expectations in literacy and mathematics. Nevertheless, difficulties with pragmatic language use, social inference, and perspective-taking are prominent. This profile — sometimes described in the literature as reflecting high cognitive ability alongside uneven social-communication development — underscores the importance of not conflating academic competence with social readiness (Haigh et al., 2018; Lai et al., 2014). Interventions that target observable social situations rather than abstract social "rules" are therefore more likely to be effective.

Social-Emotional Goal:

To support the child in understanding how to initiate and maintain a brief peer conversation during lunch break, including recognising conversational turn-taking, responding to humour with appropriate cues, and exiting a conversation politely.

Digital Social Story Focus:

A Digital Social Story titled *"Talking with My Friends at Lunchtime"* is created using photographs of the school canteen or playground, depicting realistic peer interactions. The story introduces the concept that conversations have a beginning, a middle, and an end — and that people often take turns speaking. It also gently explains that jokes and teasing between friends are usually friendly, and provides two simple strategies: pausing before responding, and asking "Are you joking?" if unsure.

The story uses a split-screen digital format: one panel shows the social scene, the other presents the child's perspective via a simple thought-bubble illustration. This format supports the development of perspective-taking and social inference without requiring abstract explanation (Ghanouni et al., 2019).

Implementation Strategy:

The Digital Social Story is introduced by the school counsellor in a one-to-one session, then revisited briefly by the class teacher before lunch. A short printed cue card (a condensed visual summary of the two strategies) is provided for the child to keep in their pocket. The teacher and counsellor coordinate their approach to ensure consistency of language and prompts across the day.

Observation and Reflection:

Over three weeks, the teacher records brief field notes following lunch breaks. Initial observations document the child's continued preference for peripheral positioning but gradual attempts to use the pause strategy. By the third week, the child successfully uses the phrase "Are you joking?" in one peer interaction, prompting laughter and a positive peer response. The teacher reflects that integrating the story into a brief daily ritual — a two-sentence reminder before lunch — appears more effective than occasional, isolated story presentations.

Key Insight for Practice:

This case illustrates that DSS can be effective beyond the preschool years, provided the narrative, visual complexity, and vocabulary are appropriately calibrated to the child's developmental stage and cognitive profile. For older primary-age children, more nuanced social scenarios — including ambiguous peer interactions — may be productively addressed through DSS when combined with brief adult coaching and portable visual supports.

6.4.7 Case Example: Managing Unexpected Changes in a Secondary School Setting (Age 12–13, Early Adolescence)

Context:

A twelve-year-old girl with a confirmed ASD diagnosis attends a mainstream lower-secondary school. She is academically capable and well-liked by teachers, but experiences intense anxiety in response to unannounced schedule changes, substitute teachers, or alterations to her seating arrangement. On such occasions, she may become tearful, leave the classroom without permission, or refuse to engage with the lesson for the remainder of the period. These responses are often misunderstood by peers and, occasionally, by teaching staff unfamiliar with her profile.

Her parents report similar reactions at home when plans change unexpectedly. The school's inclusion coordinator, in consultation with the family and school psychologist, identifies a structured narrative intervention as a potentially useful tool for building flexible coping strategies.

ASD Profile:

The child presents with what the research literature describes as a "camouflaged" profile: she has developed sophisticated social masking strategies that can lead adults to

underestimate the cognitive and emotional effort required to maintain social participation (Cook et al., 2021; Hull et al., 2017). Anxiety is a prominent co-occurring feature, with heightened sensitivity to unpredictability representing a key vulnerability (Kerns et al., 2014). This profile is particularly important for teachers to recognise, as its less visible nature can result in delayed or absent support.

Social-Emotional Goal:

To support the child in developing an internal coping framework for managing unexpected changes, including self-regulation strategies she can use independently without requiring visible adult intervention.

Digital Social Story Focus:

A Digital Social Story titled *"When Things Are Different Today"* is co-developed with the child, ensuring that the language, scenarios, and strategies reflect her own preferences and experiences. The story acknowledges that unexpected changes can feel uncomfortable or even frightening, and validates this experience before introducing three self-selected coping strategies: (1) checking a visual schedule on her phone, (2) using a brief breathing technique, and (3) writing a short note to herself that reads *"This will pass. I can manage this."*

The story is presented in a format the child chose: a simple, text-forward slideshow without heavy animation, reflecting her sensory preference for predictable, visually calm content.

Implementation Strategy:

The story is introduced in a dedicated session with the school psychologist and revisited with the inclusion coordinator once per week. A digital version is stored on the child's school tablet, enabling discreet access during transitions. Teaching staff are briefed — via a brief written summary — on the existence of the story and the coping strategies it presents, so that they can provide consistent, non-intrusive reminders.

Observation and Reflection:

Over a six-week period, the inclusion coordinator notes a gradual reduction in classroom exit episodes (from an average of three per fortnight to one). The child self-reports increased confidence in managing unexpected events. Importantly, she identifies the act of co-creating the story as itself therapeutic: "I felt like my feelings made sense." This qualitative response highlights the value of participatory design — involving the child as an active collaborator rather than a passive recipient of the intervention.

Key Insight for Practice:

For adolescents with ASD, particularly those with camouflaged profiles and co-occurring anxiety, the effectiveness of DSS may be enhanced by: (a) collaborative story development that centres the child's voice and preferences; (b) discreet, self-directed access to the story rather than adult-mediated presentation; and (c) whole-school coordination to ensure staff consistency. This case also demonstrates the relevance of DSS beyond early childhood, challenging a common assumption that social narratives are exclusively suitable for young or lower-functioning children.

6.4.8 Case Example: Requesting a Break in a Special Education Classroom (Age 6–7, Minimally Verbal Profile)

Context:

A six-year-old child with Autism Spectrum Disorder attends a specialist early intervention class within a primary school. The child has a minimally verbal profile, communicating primarily through a combination of vocalisations, gesture, and an Augmentative and Alternative Communication (AAC) device. She has strong receptive understanding of simple visual instructions but limited expressive language. Her special education teacher identifies a priority need: supporting the child in communicating the need for a sensory break before reaching a state of dysregulation.

ASD Profile:

The child's profile reflects significant variability across developmental domains — a pattern well-documented in the broader ASD literature (Lord et al., 2018). Her receptive language substantially exceeds her expressive capacity, and sensory processing differences are prominent, particularly in relation to auditory and tactile stimuli. This discrepancy underscores the importance of designing DSS that do not require verbal responses and that are closely integrated with existing communication systems (AAC).

Social-Emotional Goal:

To support the child in using her AAC device to initiate a "break" request before becoming overwhelmed, reducing the frequency of dysregulation episodes during group activities.

Digital Social Story Focus:

A Digital Social Story titled *"I Can Ask for a Break"* is developed using the child's actual photographs and familiar visual symbols consistent with her AAC vocabulary. The story is very brief (four scenes) and uses no text beyond single-word labels that mirror the AAC symbols. Scene 1 shows the classroom; Scene 2 shows a child looking and feeling

overwhelmed (using a simple visual emotion cue compatible with the child's existing emotion recognition programme); Scene 3 shows the child pressing the "break" symbol on the AAC device; Scene 4 shows the child in the calm corner, with the caption *"I did it."*

Audio narration is included at a calm, slow pace, with a brief pause between scenes to allow processing time.

Implementation Strategy:

The story is presented daily for two weeks, always at the same point in the morning routine, to establish predictability. The special education teacher and the classroom assistant coordinate to ensure that when the child uses the "break" symbol — whether prompted by the story or spontaneously — the response is immediate and consistent. This consistency is essential for reinforcing the communicative function of the request.

Observation and Reflection:

Baseline data (collected over two weeks prior to the intervention) document an average of 2.3 dysregulation episodes per day. During the intervention phase, this decreases to an average of 0.8 per day. The child begins to use the break symbol spontaneously by the end of the second week. The teacher reflects that the story's alignment with the child's existing AAC vocabulary was critical: *"The story worked because it didn't introduce anything new — it just showed her what she already knew, in a reassuring order."*

This observation is consistent with research emphasising that for minimally verbal children, the integration of DSS with existing communication supports substantially increases effectiveness (Karal & Wolfe, 2018).

Key Insight for Practice:

DSS can be meaningfully adapted for minimally verbal children when design decisions prioritise: (a) minimal text with single-word or symbol-based labels; (b) alignment with existing AAC vocabulary and symbols; (c) very brief narratives (four to six scenes); (d) calm, slow audio narration with processing pauses; and (e) consistent adult response to ensure communicative reinforcement. This case illustrates that the reach of DSS extends well beyond the verbal-dominant profiles that dominate the research literature.

6.5. Integrating Digital Social Stories with Inclusive Teaching Practices

Digital Social Stories are most effective when integrated into a comprehensive inclusive teaching approach. Rather than functioning independently, they should complement other pedagogical strategies and support continuity across learning environments.

Integration may include:

- collaboration with families and caregivers,
- coordination with other educators and support professionals,
- alignment with curriculum goals and classroom routines,
- combination with visual supports, modelling, and guided practice,
- reinforcement of skills across settings.

Such integration enhances consistency, supports generalisation of learning, and contributes to sustainable educational impact.

6.5.1 Principles of Digital Pedagogical Design

Digital Social Stories should not be viewed merely as "stories presented on a screen." The value of digital technology lies in its capacity to enhance pedagogical objectives rather than simply replicate printed materials in digital form. For this reason, the selection and design of digital tools should be guided by considerations such as accessibility, attention span, sensory regulation, learner engagement, and opportunities for meaningful repetition.

In practice, this implies that digital Social Stories should employ concise visual scenes, single-message pages, clear and calm narration, and controlled transitions between screens. Design elements should remain predictable and minimally stimulating in order to avoid unnecessary sensory load. In addition, simple interaction features that allow the child to progress through the story independently can support autonomy and reinforce engagement with the narrative.

Within this framework, the Universal Design for Learning (UDL) approach provides a useful pedagogical foundation. UDL conceptualizes learners as purposeful and reflective individuals who actively engage with learning resources and apply knowledge in meaningful contexts. Consequently, Digital Social Stories should be designed according to the principles of multiple means of representation, multiple means of engagement, and multiple means of action and expression, thereby increasing accessibility and participation for diverse learners.

Recent reviews of digital tools that support executive functioning further suggest that clear instructional goals, brief and structured learning activities, and the possibility of recording and monitoring learning outcomes can be particularly beneficial for students with special educational needs. When designed according to these principles, digital environments can provide additional scaffolding for planning, attention, and self-regulation, thereby strengthening the educational potential of Digital Social Stories in inclusive learning contexts. In addition, Digital Social Stories can support differentiated instruction in inclusive classrooms. By adjusting narrative length, visual complexity, pacing, and interaction features, teachers can tailor stories to the individual needs, communication profiles, and sensory preferences of learners with ASD.

6.5.2 Cross-Cultural Adaptation of Digital Social Stories in European Contexts

The EARLY-ASD handbook has been developed through a transnational partnership spanning Poland, Romania, Spain, and Turkey — each country representing distinct educational systems, cultural expectations, and social norms that shape how children with ASD are understood and supported. This diversity is a strength: it reflects the pan-European relevance of the DSS approach. However, it also raises an important professional obligation — the need to adapt digital social stories to the specific cultural, linguistic, and institutional context in which they will be used.

Cross-cultural adaptation is not merely a matter of translation. A social story that describes classroom behaviour in one national context may encode assumptions about social norms, adult-child relationships, school architecture, or daily routines that are unfamiliar or misleading in another setting (Almutlaq & Martella, 2018; Safi et al., 2021). The following considerations are relevant for educators working across European and multicultural contexts.

Social Norms and Behavioural Expectations

The behaviours that a DSS aims to support are not culturally neutral. For example, eye contact during conversation, the appropriate distance between speakers, the use of formal versus informal address with adults, and the expected ways of expressing disagreement or requesting assistance vary meaningfully across European cultures. In some educational

contexts, direct verbal assertion (e.g., "I need help") is actively encouraged; in others, indirect signalling or non-verbal cues are more normative. Educators should review the directive and perspective sentences in any social story to ensure that the expectations they encode are consistent with the cultural norms of the child's home and school environment. *Practical example:* In Turkish early childhood settings, the use of formal address with teachers (hoca) is an important social expectation. A DSS designed for a Turkish child should ensure that the language of requests and interaction depicted in the story reflects this register. Conversely, a DSS developed in a Spanish or Romanian context may place greater emphasis on peer collaboration and group participation, which may be given a different social weight than in more individualistic contexts.

Family Structures and Home–School Collaboration

Chapter 4.2 of this handbook addresses the involvement of parents and caregivers in the DSS process. In the European context, family configurations are diverse: many children are raised in multigenerational households, bilingual or multilingual families, or by caregivers whose primary language is not the language of instruction. When designing a DSS for a child from a migrant or minority-language family, educators should consider:

- whether the story can be made available in the family's home language alongside the school language;
- whether the visual elements reflect family structures that are familiar and recognisable to the child;
- whether the social expectations depicted in the story are consistent with those valued at home, or whether a brief family consultation could resolve potential discrepancies.

Practical example: A story about "how I greet my teacher in the morning" may need to reflect different greeting norms depending on whether the child's family background emphasises formal or informal adult–child interaction. Families may be valuable collaborators in identifying culturally meaningful alternatives.

Diverse Learning Environments Across Europe

The physical and institutional contexts in which DSS are used vary substantially across EARLY-ASD partner countries and the broader European landscape. Early childhood education may take place in full-day preschool settings, half-day kindergartens, integrated nursery schools, or home-based provision. Primary school transition ages and curriculum

expectations differ. The presence and training of support staff (specialist teachers, shadow teachers, teaching assistants, school psychologists) is not uniform across systems.

Educators are therefore encouraged to contextualise the implementation models described in this handbook according to their specific national and institutional setting. The DSS Classroom Implementation Model (see Section 4.3.1) and the Reflective Implementation Cycle (see Section 6.1) are designed to be flexible frameworks rather than fixed procedures, precisely because the contexts in which they will be applied are diverse.

A Framework for Cross-Cultural Story Review

Before implementing a DSS across cultural or linguistic contexts, educators may find it useful to apply a brief cross-cultural review, addressing the following questions:

- Do the social scenarios depicted in the story reflect situations familiar to the child in *this* cultural and institutional context?
- Are the behavioural expectations encoded in the directive sentences consistent with the norms of both the school and the home environment?
- Are the characters, settings, and visual elements recognisable and culturally appropriate?
- Has the family been consulted about the story's content and cultural fit?
- Is there a need to produce the story in more than one language, or with dual-language annotations?
- Are there any cultural beliefs or practices relevant to the child's experience of ASD that should be reflected in or respected by the story?

This brief review process can help ensure that digital social stories serve as genuinely inclusive and culturally responsive tools, rather than importing assumptions that may not serve the child's actual social environment.

6.6. Monitoring Progress and Observing Change

Monitoring is an essential component of professional practice. It allows educators to evaluate whether the Digital Social Story supports the intended social-emotional objectives.

Monitoring may involve:

- structured observation of behaviour and engagement,

- use of simple checklists aligned with learning goals,
- documentation of learner responses,
- comparison of pre- and post-implementation observations,
- reflective notes on changes in understanding or behaviour.

Systematic observation supports evidence-informed decision-making and enables adjustments in design or implementation when necessary.

6.7. Structured Reflection and Professional Growth

Reflective practice is central to competence development in inclusive education. After implementing a Digital Social Story, educators are encouraged to engage in structured reflection in order to evaluate their pedagogical decisions and outcomes.

Reflection may address:

- clarity and relevance of objectives,
- effectiveness of narrative structure and multimedia elements,
- learner engagement and comprehension,
- integration within classroom routines,
- potential areas for improvement or adaptation.

Through reflection, practical experience becomes professional knowledge. This process strengthens analytical thinking, supports continuous improvement, and promotes pedagogical autonomy.

Table 6.1. Structured Reflection Form

Reflection Question	**Notes**
What was the target social-emotional skill?	
Was the story clearly aligned with this objective?	
How did the child respond to the story?	
Which multimedia elements (audio, visuals, pacing) were supportive?	
Was the story appropriately integrated into the classroom routine?	
What challenges emerged during the implementation?	
What level of adult support was required?	
Was a short-term change in the target behaviour observed?	

What should be modified in the next implementation?	

Structured reflection does not automatically transform experience into learning. For reflection to contribute to professional development, teachers need to engage in evidence-informed thinking guided by specific questions. Therefore, the reflection process should not rely solely on general impressions but should instead be structured around key dimensions such as the instructional objective, pedagogical decisions, the child's response, the classroom context, and potential needs for adaptation.

Tools such as structured reflection forms can help preservice teachers transform intuitive pedagogical impressions into explicit professional knowledge. In teacher education, it has long been emphasized that reflective practice becomes more effective when it is supported by clearly defined frameworks and guided questions that direct attention to critical aspects of teaching and learning processes.

6.8. Continuing Development and Adaptation

Digital Social Stories should be understood as adaptable and evolving pedagogical tools. Their long-term effectiveness depends on ongoing professional learning, contextual responsiveness, and iterative refinement.

Continuing development may include:

- revising stories based on learner progress,
- adapting content to new educational contexts,
- exploring responsible and pedagogically justified digital enhancements,
- engaging in professional dialogue and collaboration,
- integrating feedback from practice into future design decisions.

This adaptive perspective ensures sustainability and supports continuous innovation in inclusive education.

6.9. Reflection Questions

1. Implementation as a Process

- Reflect on the process of implementing a Digital Social Story in an educational setting. In what ways might this process involve ongoing adjustment and adaptation rather than a single intervention?

- Consider how planning, observation, and reflection interact during implementation. How might these elements influence the effectiveness of a Digital Social Story?
- Think about the role of professional reflection in educational practice. How can reflective thinking support improvements in the implementation of Digital Social Stories?

2. Planning and Goal Alignment

- Reflect on how a Digital Social Story can be connected to a clearly defined social-emotional objective. How might this clarity influence the effectiveness of the intervention?
- Consider the importance of linking the story to familiar classroom routines and everyday experiences. How might this connection support children's understanding and engagement?
- Think about how children's developmental characteristics and learning needs influence planning decisions when designing and implementing a Digital Social Story.How can you ensure that a Digital Social Story is clearly aligned with a specific social-emotional objective?

3. Classroom Integration

- Reflect on your own teaching context. At which moments within daily classroom routines might the introduction of a Digital Social Story be most meaningful?
- Consider how Digital Social Stories might become part of inclusive classroom practice rather than occasional interventions. What conditions in the classroom environment might support this integration?
- Think about the role of adult guidance during implementation. How might educators balance support with opportunities for children to act independently? When is the best moment to introduce a Digital Social Story within a daily routine?

4. Implementation Challenges

- Reflect on possible challenges that may arise during implementation, such as limited engagement or difficulty applying the behaviour presented in the story. How might educators respond to such situations?

- Consider how Digital Social Stories might be adapted if the expected behavioural change does not occur. What elements of the story or implementation process could be reconsidered?
- Think about how digital formats may influence children's sensory experiences. How might educators design stories that remain engaging while avoiding sensory overload?
- Reflect on how the skills presented in a story could be supported across different contexts, helping children apply them beyond the original learning situation.

5. Monitoring and Evaluation

- Reflect on how teachers observe and interpret children's responses during classroom activities. How might such observations help determine whether a Digital Social Story is effective?
- Consider how structured observation tools or templates might support systematic reflection on children's progress and learning.
- Think about situations in which a Digital Social Story might need to be revised or adapted. What kinds of classroom observations could inform such decisions?

6. Professional Reflection and Growth

- Reflect on how analysing real classroom cases can support the development of professional judgement in inclusive education.
- Consider what insights educators may gain from designing, implementing, and analysing a Digital Social Story. How might this experience influence future teaching practice?
- Think about the role of structured reflection in professional learning. In what ways can reflective practice contribute to the continuous improvement of teaching strategies?
- Reflect on how collaboration with colleagues and families might strengthen the implementation of Digital Social Stories in educational settings.

CONCLUSION

This academic handbook presents a coherent and comprehensive framework for teacher education in the design, implementation, and evaluation of Digital Social Stories (DSS) in working with children with Autism Spectrum Disorder (ASD). It integrates theoretical, methodological, and practical perspectives with reflection on teachers' professional development, thereby creating a structured framework for the development of competencies essential for inclusive and digitally supported education.

The structure of the handbook reflects a logical learning pathway encompassing the understanding of the socio-emotional functioning of children with ASD, the acquisition of the theoretical foundations of social stories, their design and implementation, as well as monitoring, evaluation, and professional reflection. In this way, the publication supports a gradual transition from knowledge acquisition to conscious, responsible, and reflective pedagogical practice.

A key assumption of the publication is the coherent integration of knowledge from child development, instructional methodologies, digital design, and assessment tools. This ensures continuity between theoretical foundations and their practical application in educational settings. The handbook supports the development of both pedagogical competencies and the skills necessary for the informed, critical, and ethical use of digital tools in working with learners.

Digital Social Stories (DSS) constitute a central element of the presented approach. They do not merely represent a technological extension of traditional teaching methods, but rather a tool that supports the understanding of social situations, the development of communication, and the active participation of children with ASD in educational life. Their effectiveness results from the combination of individualisation, predictability, and the potential of multimedia, which enhances the accessibility of learning materials and increases learner engagement, while also fostering autonomy and a sense of safety.

The publication has been prepared as an academic and didactic resource supporting various forms of higher education and professional development for teachers, including programmes based on learning outcomes and a competence-based approach. In this way,

it contributes to the broader preparation of future teachers to work in diverse and dynamic educational environments, in line with the principles of inclusive education and reflective professional practice.

The publication was developed within the Erasmus+ project EARLY-ASD (2024-1-PL01-KA220-HED-000246304) as a result of international academic cooperation. Joint efforts enabled the integration of complementary research and pedagogical perspectives, as well as the incorporation of diverse educational traditions. As a result, the publication has gained a multidimensional character, embedded in varied educational contexts and responding to the needs of contemporary teacher education.

Within the EARLY-ASD project, three key pillars were emphasised: evidence-based practice, reflective professional development, and inclusive education supported by digital technologies. This publication represents their practical implementation in the field of teacher education and professional development, integrating theory, practice, and professional reflection into a coherent whole.

In the future, the presented framework may be further developed and enriched with additional practical experiences, teachers' reflections, and emerging technological solutions. Sustaining dialogue between theory, educational practice, and international cooperation will enable the continued evolution of Digital Social Stories as a tool supporting high-quality inclusive education that responds to the diverse needs of learners.

Digital Social Stories therefore remain not only a teaching tool, but also an approach that supports the development of social understanding, participation, and agency among children with ASD. Their value lies in the combination of individualisation, predictability, and the potential of digital technologies, which enable the creation of accessible, engaging, and meaningful learning experiences.

Ultimately, the aim of this publication is not only to support the development of teachers' professional competencies, but also to create educational conditions in which every child with ASD can experience understanding, participation, and a sense of agency. It is hoped that the presented solutions will inspire teachers, special educators, and academic staff to

use Digital Social Stories in a creative, informed, and responsible way in their everyday educational practice.

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APPENDICES

Appendix 1 – Model Digital Social Stories

1. Title

Purpose: Provide a clear and concise title indicating the focus of the Digital Social Story.

Example: *Waiting for One's Turn*

2. Context

Purpose: Describe the classroom or situational context in which the Digital Social Story will be used.

Example:

- Early childhood classroom, group of 5-year-old children.
- Child with Autism Spectrum Disorder (ASD) experiences difficulties waiting for their turn during group activities, such as table tasks or play sessions.

3. Target Social-Emotional Skill

Purpose: Define the specific social-emotional skill or behavior the Digital Social Story aims to support.

Example:

- Develop the ability to wait for one's turn and use appropriate verbal expressions while waiting.

4. Story Design

Purpose: Outline the structure of the Digital Social Story, including scenes, visuals, text, and strategies.

Scene	Visual	Text	Strategy
1	Children sitting at the table	"It's time for our group activity."	Introduce the situation
2	Child looking at a peer	"Every child has a turn."	Teach turn-taking principle
3	Child waiting patiently	"Now I wait for my turn."	Model waiting behavior
4	Child with hands on lap	"My hands are calm on my lap."	Promote self-regulation
5	Child speaking when it's their turn	"When it is my turn, I can speak."	Practice verbal expression
6	Child participates successfully	"I waited and now I can join the activity!"	Positive reinforcement

Notes:

- Keep sentences short and visuals simple.
- Each scene communicates one clear, actionable message.

- End with positive reinforcement and achievable strategies.
- Use digital features (audio narration, simple transitions, interactive navigation) to enhance engagement.

5. Implementation Notes

Purpose: Guide teachers on presenting and supporting the Digital Social Story in practice.

- **Presentation:** Use a tablet or interactive screen immediately before the target activity.
- **Adult Support:** Provide brief prompts or cues as needed; gradually reduce support to foster independence.
- **Frequency:** Present 2–3 times per week across different contexts.
- **Adaptation:** Adjust visuals, narration, or prompts based on the child's response.
- **Digital Considerations:** Minimize sensory overload by using calm visuals, clear narration, and predictable screen transitions.

6. Observation & Reflection

Purpose: Evaluate engagement, comprehension, and behavior; inform adjustments to the Digital Social Story.

Dimension	Notes
Engagement	Was the child attentive and interested?
Understanding	Did the child understand the rules of turn-taking?
Behavior	Did the child apply the strategy independently?
Adult Support	What level of guidance was needed?
Next Steps	What modifications or additional practice are required?

Teacher Tips:

- Present the story immediately before the activity for maximum relevance.
- Gradually reduce adult prompts to encourage independence.
- Use the story across multiple contexts to support generalization.
- Celebrate successes to reinforce positive behavior.

7. Key Guidelines

1. Use short sentences and simple visuals.
2. Connect the Digital Social Story directly to real-life classroom routines.
3. Include clear, actionable strategies for the child to practice.
4. Monitor engagement and adjust content as needed.
5. Repeat and reinforce the story across contexts for consistent learning.

6. Utilize digital features thoughtfully to enhance interaction and maintain focus.

Appendix 2 – Pilot Core Course Description (28h)

28-Hour Pilot Micro-Credential Course

Title: Digital Social Stories for Supporting the Social and Emotional Development of Children with Autism Spectrum Disorder (ASD)

Developed within EARLY-ASD Project

Project Number: 2024-1-PL01-KA220-HED-000246304

Type and Scope:

- Type: Project-based pilot micro-credential learning initiative
- Workload: 28 hours
- ECTS: 1 ECTS (indicative workload-based equivalence)
- EQF Level: 6 (aligned with institutional reference framework)
- Mode of Delivery: Blended Learning
- Assessment: Competence-based evaluation
- Outcome: Successful completion

Qualification Details:

- ECTS credit: 1 (indicative workload-based equivalence)
- EQF level: 6
- Type of learning: Non-formal, continuing higher education (project-based micro-credential)
- Credential type: Project-based micro-credential learning experience

ECTS value is provided as an indicative reference to workload equivalence and does not constitute formal credit recognition.

Purpose

This course is a non-formal, project-based micro-credential learning initiative developed within the EARLY-ASD Erasmus+ project. It is grounded in the EARLY-ASD Handbook and complements the 60-hour Higher Education Curriculum on Digital Social Stories for supporting children with Autism Spectrum Disorder (ASD).

The course supports participants in developing practical competencies in designing a Digital Social Story (DDS) as an evidence-informed educational approach supporting

social and emotional development in children with Autism Spectrum Disorder (ASD). It functions as a structured pilot learning experience within the EARLY-ASD project framework.

Course Organisation

Total course workload: 28 hours, including:

- 12 hours of contact sessions (synchronous / blended learning format)
- 16 hours of independent study and practical activities

Independent work includes the completion of two assessed assignments:

- Assignment 1: Case Study
- Assignment 2: Success Story

Participants use educational materials available on the EARLY-ASD platform (https://earlyasd.eu/web/), including the course guidebook.

Completion of both assignments is required to pass the course and confirms the achievement of the intended learning outcomes. The independent learning component is directly linked to the final course completion requirements.

Structure

The course follows a progressive, competence-based learning pathway:

1. Understanding children with ASD
2. Understanding Social Stories
3. Designing Digital Social Stories
4. Classroom implementation
5. Monitoring and evaluation
6. Reflective practice and professional development

Learning Outcomes

The learning outcomes are defined at EQF level 6 and reflect knowledge, skills, and responsibility required for the design, implementation, and evaluation of Digital Social Stories in inclusive educational contexts.

Learning Outcomes

The learning outcomes are defined at EQF level 6 and describe what the participant is expected to know, understand, and be able to do after completing the course.

Knowledge

- The participant explains key principles and evidence-informed foundations of Social Stories in inclusive education.
- The participant describes key features of social and emotional development in children with Autism Spectrum Disorder (ASD).
- The partcipant recognise key design principles for developing effective Digital Social Stories, including narrative structure, visual support, and learner-centred adaptation.

Skills

- The participant analyses the needs and contextual factors of a learner in relation to social-emotional difficulties.
- The participant designs and implements a Digital Social Story aligned with social-emotional learning objectives.
- The participant integrates appropriate multimedia elements to support inclusive learning.
- The participant plans basic strategies for implementation and evaluation of DSS in classroom practice.

Responsibility and Autonomy

- The participant reflects on, evaluates, and adapts Digital Social Stories based on learner outcomes and contextual needs.
- The participant applies ethical principles in digital and inclusive educational practice.

Assessment Overview

Completion of the course is based on a competence-based evaluation of practice-oriented learning outcomes.

Participants are required to complete two graded assignments within the EARLY-ASD Erasmus+ project framework (Project No. 2024-1-PL01-KA220-HED-000246304):

• Assignment 1: Case Study

• Assignment 2: Success Story

Both assignments assess the participant's ability to apply Digital Social Stories (DSS) in supporting the social and emotional development of children with Autism Spectrum Disorder (ASD).

Participants may work on real-life or simulated educational or therapeutic cases.

Case Study (Assignment 1)

The assignment includes:

• analysis of the educational context (setting, child profile, difficulties)

• description of DSS-based intervention (implementation, delivery method, purpose)

• reflection on outcomes (observed or expected behavioural, emotional, or social changes)

Success Story (Assignment 2)

The assignment includes:

• description of initial situation and identified needs

• presentation of DSS intervention (topic, content, delivery mode)

• analysis of outcomes and observed improvements

• explanation of effectiveness (e.g., visual support, simplicity, repetition, predictability, personalization)

Participants are encouraged to use educational materials available on the EARLY-ASD platform (https://earlyasd.eu/web/), including the course guidebook and model DSS examples.

Both assignments may be based on the same case, provided that the Success Story clearly demonstrates the positive impact of the intervention.

Completion of both assignments is required to successfully complete the course and confirms the achievement of the intended learning outcomes.

Certification

Participants who successfully complete the course receive a project-based micro-credential certificate issued within the EARLY-ASD project framework and endorsed by the University of Warsaw as the Lead Partner Institution.

Completion is based on:
– active participation in course activities
– completion of two independent learning tasks: Case Study and Success Story
The certificate is issued upon completion of all course requirements.

Appendix 3 – Micro-Credential Certificate Template

Co-funded by the European Union

EARLY-ASD

CERTIFICATE OF COMPLETION

This is to certify that

[Full Name of Participant]

has successfully completed the higher education micro-credential:

Digital Social Stories for Supporting the Social and Emotional Development of Children with Autism Spectrum Disorder (ASD)

28-Hour Pilot Micro-Credential Course

delivered within the framework of the EARLY-ASD Project

held in [City], [Country], on [Dates]

Qualification Details

- Total workload: 28 hours
- ECTS credit: 1 (indicative workload-based equivalence)
- EQF level: 6 (in accordance with institutional reference framework)
- Type of learning: Non-formal continuing higher education (project-based micro-credential)
- Type of credential: Project-based micro-credential learning experience

Completion of this micro-credential is based on the achievement of defined learning outcomes specified in the course documentation.

Issued within the EARLY-ASD Project Consortium framework

Lead Partner Institution: University of Warsaw

Prof. Joanna Madalińska-Michalak

Project Coordinator

Signed on behalf of the EARLY-ASD Project Consortium

Date: _____

Certificate ID: EARLYASD-DSS-2026-PL-001

Appendix 4 – Chapter 5 Evaluation Tools

Appendix 4.1 – Digital Social Story Checklist

Checklist for the digital social story draft			
	Yes	Partially	No
I/We kept the positive tone in all sentences.			
I/We kept the language simple in all sentences I wrote.			
The story content is suitable for the child's age.			
The story content is suitable for the child's needs.			
The story content is suitable for the child's preferences.			
The title of the story refers to the story's purpose.			
I/We distributed 4 types of sentences in the story in balance.			
I/We avoided using words that express certainty (always-never, etc.) to reduce anxiety.			
I/We preferred using first-person perspective mostly in the story.			
I/We presonalised the story in line with the child's challenges, needs and preferences.			
The characters I used resemble the real characters, locations and routines the child knows.			
The visuals I used simple and free from distracting backgrounds.			
Each storyboard cell clearly includes one idea or step in the scenario.			
We used real or relatable images where possible to enhance understanding.			
My story includes appropriate audio narration to support non-reader children.			
I/We used the platform …….. to create my story	Platform name:		
The digital tool/platform I/we used is appropriate for the child's sensory and motor abilities.			
The story supports measurable emotional, communicative, or behavioral goals.			

Appendix 4.2 – Peer Review Form for Developed Digital Social Stories

Name of the reviewer student:			
	Yes	Partially	No
The sentences in the story are simple and clear and developmentally appropriate.			
The story addresses a specific problem, routine, or social skill relevant to the child's needs.			
The title of the story is appropriate (Not directly addressing the anxiety-creating problem)			
The story mostly uses the first-person perspective to support identification and empathy.			
The story tone is consistently positive and supportive, reducing anxiety and making the child feel safe.			
Words expressing certainty (e.g., "always," "never") are avoided.			
The story includes a balanced distribution of the four sentence types: Descriptive, Perspective, Directive, Control			
Real or relatable images are used where possible to enhance understanding.			
Visuals used are simple, with minimal or no distracting backgrounds.			
The story includes appropriate audio narration to support non-readers.			
Multimedia elements (audio, video, images) enhance clarity and engagement without overwhelming the child.			
The digital tool/platform used is appropriate for the child's sensory and motor abilities.			
Flow of the story is simple and intuitive.			
The story can be paused, replayed, or reviewed as needed.			
If I/We created this story I/We would change/rearrange ……..			

Checklist for the reviewed digital social story's usability and accessibility			
	Yes	Partially	No
The story template is handy and can be copied and used for other story creations.			
The story uses clear, simple, and age-appropriate language.			
The story is compatible with the child's sensory profile (e.g., no sudden sounds, no fast transitions).			
The story length matches the child's attention span.			
The story can be easily integrated into daily routines or teaching activities.			

Appendix 4.3 – Usability and Accessibility Index

Checklist for the reviewed digital social story's usability and accessibility			
	Yes	Partially	No
The story template is handy and can be copied and used for other story creations.			
The story uses clear, simple, and age-appropriate language.			
The story is compatible with the child's sensory profile (e.g., no sudden sounds, no fast transitions).			
The story length matches the child's attention span.			
The story can be easily integrated into daily routines or teaching activities.			

Appendix 4.4 – Social Story Impact Observation Form

Observation Form - Evaluating the Effectiveness of a Digital Social Story (Experiment with a child)

General Information

Observer's Name	
Date of Observation	
Child's Initials or Code	
Age	
Setting	
Title of the Social Story	
Target Behaviour(s)/Skill(s)	

Part A – Pre-story behavior (baseline)

Frequency of target behaviour before story	
Child's typical emotional state	
Triggers or problem situations observed	
Other relevant notes	

Part B – Engagement with the Story

Criteria	Yes	Partially	No	Notes
Child shows interest/attention to the story				
Child follows the visuals or narration				
Child responds verbally/nonverbally during the story				
Child relates the story content to personal experience				

Part C – Post-Story Behavior (Short-Term Response)

Criteria	Yes	Partially	No	Notes
Demonstrates the target behaviour after story				
Applies the strategy or solution shown in the story				
Emotional state appears more regulated				
Needs adult support to recall/apply story content				

Part D – Follow-Up (If Applicable, After Several Sessions)

Change in frequency of target behaviour	
Generalization to other settings	
Independence in behaviour	
Suggestions for next steps	

Appendix 4.5 – Peer Review for Improvement

Peer Feedback Sheet

This form is designed to help students provide constructive feedback on the preschool experiment by their peers.

General Information

Reviewer's Name	

Strengths

List 2–3 strengths of the digital social story teaching practice in the selected preschool. Consider the use of the digital tool effectively, interactive storytelling, child's responsiveness and interest in the story, post-story behaviour regulation/change and if possible, long-term permanence of the target behaviour.

1.

2.

3.

Areas for Improvement

List 2–3 areas where the teaching practice could be improved. Be specific and constructive.

1.

2.

3.

Specific Suggestions

Write at least one specific suggestion to help your classmate improve their work.

Suggestion:

Appendix 5 – Guidelines for Using Reflection Questions

This appendix provides structured reflection prompts designed to support pre-service teachers, early childhood educators, and practitioners in connecting theory, design, and practice when using Digital Social Stories (DSS) with children with Autism Spectrum Disorder (ASD). These questions are not intended as test items but as tools for critical thinking, professional reasoning, and evidence-informed decision-making.

1. Understanding Behavior and Context

- Which behaviors of children with ASD might be misinterpreted, and what alternative explanations could account for them?
- How do environmental factors (noise, layout, peer interactions) influence children's social-emotional responses?
- At what moments of the day or during which activities might children experience stress or uncertainty?
- How do adult communication style and instructional strategies affect engagement and learning readiness?

2. Social Story Design and Tone

- Which aspects of writing a Social Story are most challenging in maintaining a clear, respectful, and non-directive tone?
- How does using descriptive or perspective-based language influence comprehension and empathy development?
- Why is it valuable to include thoughts and emotions of others in a story?
- How can the child's own perspective, interests, and family collaboration enhance personalization and relevance?

3. Digital Design Considerations

- Which digital features (multimedia, interactivity, accessibility) enhance understanding without overwhelming the child?

- How can pacing, multimedia selection, and interactivity be tailored to individual learning profiles?
- What ethical considerations should guide the use of personal photographs, avatars, or AI-generated content?

4. Topic Selection and Classroom Relevance

- How can classroom observations identify situations suitable for DSS interventions?
- What criteria should guide the selection of target social-emotional skills for a story?
- How can DSS be aligned with real-life classroom routines and developmental needs?
- In what ways can collaboration with parents and caregivers enhance relevance and generalization across contexts?

5. Implementation and Integration

- When and how should a DSS be introduced within daily classroom routines?
- How can stories be embedded in ongoing teaching practices rather than used as isolated activities?
- What strategies encourage independent application and gradual reduction of adult prompts?
- How can repetition, consistency, and reinforcement strengthen learning and social-emotional skill development?

6. Monitoring, Reflection, and Adaptation

- How can educators observe whether a DSS is supporting the targeted behavior or social-emotional objective?
- What indicators (behavioral, emotional, engagement-based) suggest effectiveness?
- How should stories or teaching strategies be adapted if the desired outcomes are not achieved?

- How does structured reflection on classroom experiences inform future design and implementation decisions?
- How can collaboration with families and colleagues strengthen reflective practice and professional growth?

Practical Use

- Use these questions at each stage of DSS planning, implementation, and evaluation.
- Encourage learners to document insights and action plans based on their reflections.
- Integrate questions into course activities, case studies, or professional development workshops to strengthen applied competence.
- Questions can be revisited after real classroom implementation to guide iterative improvement and evidence-informed practice.

Appendix 6 – Micro-Credential Implementation and Quality Assurance Framework

1. Nature of the Learning Activity

The EARLY-ASD 28-hour course is a project-based micro-credential learning initiative implemented within an Erasmus+ KA220 project framework. It is a non-formal, continuing higher education learning experience and does not constitute a formal qualification or accredited study programme.

2. Learning Design and Structure

The course is structured around:

- 28 total learning hours
    - 12 hours contact learning (blended/synchronous sessions)
    - 16 hours independent practice-based learning

Independent learning includes engagement with digital materials, development of a Digital Social Story (DSS), and reflective self-assessment activities aligned with the course tasks.

3. Learning Output and Assessment

Completion is based on a competence-based assessment model consisting of:

- a practice-based learning output: a Digital Social Story (DDS)
- reflective tasks (Case Study and Success Story)

The DSS functions as a practice-based artefact demonstrating applied understanding of Social Stories methodology, while the reflective tasks support critical analysis and professional judgement.

4. ECTS and EQF Reference

- EQF Level 6 (institutional reference framework)
- 1 ECTS (indicative workload-based equivalence)

ECTS is used solely as a reference for workload equivalence and does not represent formal credit recognition.

5. Certification Model

Upon successful completion, participants receive a project-based micro-credential certificate:

- issued within the EARLY-ASD Project Consortium framework
- signed by the Project Coordinator on behalf of the consortium
- Certificate ID format: EARLYASD-DSS-YYYY-CC-NNN (country code + sequential number per issuing partner).

The certificate confirms achievement of defined learning outcomes in a non-formal learning context.

6. Quality Assurance and Consistency

All partner institutions implement the course according to this framework to ensure:

- consistency of workload and structure
- alignment of learning outcomes and assessment approach
- uniform certification standards
- comparability across partner institutions

This ensures coherence, transparency, and quality assurance across the EARLY-ASD consortium.

Appendix 7 – Worksheets for Participants' Tasks (Pilot Course)

Within the pilot basic course, participants complete two practice- and reflection-oriented assignments:

Task 1: Case Study

Preparation of a description of an educational or therapeutic situation in which a Digital Social Story (DSS) was used or planned to be used. The description includes the context of the situation, the course of the intervention, and the observed or anticipated outcomes.

Task 2: Success Story

A description of a good practice example in which the use of DSS led to positive educational or therapeutic outcomes. It includes the characteristics of the social story used, the way it was implemented, and the observed effects on the child's functioning.

- Participants use the handbook and teaching materials available on the EARLY-ASD platform.
- Completion of both tasks is a requirement for passing the pilot course and confirms the achievement of the intended learning outcomes.

Appendix 7.1 – Worksheet: Case Study

Case Study

1. Situation – context

☐ Where did the situation take place? (school / preschool / therapy / other)
☐ Child's age: _____
☐ Description of the child's functioning (communication, behavior, needs):

_____
_____

☐ What difficulties were present? (tick or describe)
☐ emotions
☐ peer relationships
☐ changes and new situations
☐ rules and social norms
☐ other: _____

Situation description:

_____
_____
_____
_____

2. Intervention – use of DSS

☐ Was the DSS used in a real or hypothetical way?
☐ real
☐ hypothetical (planned)

☐ When was the DSS presented?
☐ before the situation
☐ during
☐ after
☐ other: _____

☐ How was the DSS presented?
☐ tablet
☐ computer
☐ printed version
☐ conversation + pictures
☐ other: _____

☐ What was the purpose of the DSS?

Intervention description:

3. Outcome

☐ What changed in the child?
☐ behavior
☐ emotions
☐ communication
☐ relationships with others

Description of outcome (or expected outcome):

Appendix 7.2 – Worksheet: Success Story

Success Story

1. Initial situation

☐ What was the situation like at the beginning?

☐ What difficulties did the child have?

2. Intervention – DSS

☐ Title / topic of the social story:

☐ Form of DSS:
☐ digital (tablet / computer)
☐ pictures + text
☐ video
☐ other: _____

☐ When and where was the DSS used?

☐ How did the child use the DSS?
☐ independently
☐ with a teacher
☐ with a therapist
☐ with a parent

Intervention description:

3. Outcome – change

☐ What improved?
☐ emotions
☐ behavior
☐ social relationships
☐ communication

Description of outcomes:

4. Why did it work?

☐ visual support / pictures
☐ simple language
☐ repetition
☐ predictability
☐ personalization
☐ other: _____

Justification: