2023

# Special Educators' Experiences with Professional Development and Implementation Support in Using Digital Social Stories for Students with Autism

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
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Abstract

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Project Study Submitted in Partial Fulfillment

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## Abstract

Students with autism need social skills to succeed academically, which can be fostered with the use of digital social stories (DSSs). While many special educators are expected to use DSSs to teach social skills because of increased elementary autism diagnoses, a significant number of DSS users are unprepared. The problem addressed in this qualitative project study was that special educators were not receiving adequate professional development and implementation support to use DSSs to teach autism-related social skills. The purpose of this research was to explore the special educators' experiences with professional development and implementation support. The concerns-based adoption model and Magana's T3 framework were used as conceptual frameworks, and the research questions were created to explore special educators' professional development and implementation support experiences with DSSs. This study used a basic, qualitative design to select 11 participants and collect interview data. A comprehensive two-cycle coding process was used for data analysis. The findings revealed five themes: a lack of professional development, school–wide support, district support, limited digital tools and resources, and unpreparedness to use DSSs. A professional development plan addressed these themes. A scaffolded 5-week online course on curating and developing DSSs was created. This study will contribute to positive social change for special educators using DSSs to teach appropriate social skills to students with autism and affect the local community by helping students promote self-awareness, better understand and follow the rules and routines, gain a sense of others' perspectives, and identify critical social cues.

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# Dedication

This project study is dedicated to all the special educators using DSSs to teach appropriate social skills to their students with autism. It is a challenging task, especially when there is a lack of support, tools, and resources. However, please continue to do God's work. There is a rainbow at the end of the storm! I also dedicate this to my family—my three children, Messiah, Marjaani, and Micah, who have been encouraging, patient, and full of hugs and kisses. Even though they are too young to understand a doctorate, they have inspired me to accomplish the most complex scholastic task I have attempted. I dedicated so much time to research, writing, interviewing, and editing, but they inspired me to keep pushing and never give up. Now we can enjoy some ice cream, have fun in the sun, and go on vacation. Finally, I dedicate this project study to my grandmother, Ruby Toronka, who has always been there to support my scholastic accomplishments. She has never missed an award ceremony or graduation. She is always by my side to uplift me with positive affirmations.

# Acknowledgments

I would like to express gratitude for the amazing work of my committee, which included Dr. Jennifer Courduff, Dr. Heng–Yu Ku, and Dr. Shereeza Mohammed. I am thankful for their guidance, support, and encouragement during my project study journey at Walden University. My committee chairperson, Dr. Courduff, provided weekly encouragement and pushed me to set my own pace. Setting my own pace allowed me to work harder to make it to the finish line. She stayed the course and exuberated the same level of energy that I had to help me finish this project. My methodologist, Dr. Ku, was meticulous in his feedback, which helped me become a strong researcher and writer. Finally, my URR, Dr. Mohammed, guided me as I navigated through my project study.

Moreover, I would like to thank the Department of Educational Technology & Design for the knowledge, skills, and disposition needed to complete this project. I learned so much about myself as an agent of change due to my professors. Specifically, I would like to thank Dr. Darci J. Harland for her support and encouragement at the beginning of my prospectus journey. I was always greeted, via Zoom, with a big smile and lots of resources to help me finalize my research topic.

Additionally, thank you to my grandmother, Ruby Toronka. She is the only person in my life who has believed in me and pushed me to be a better person. She recognized my gifts and talents at an early age and has been right as my biggest cheerleader!

Finally, I would like to thank God for a second chance at life. I rededicated my life to Christ after suffering a hemorrhagic stroke in 2014. Since then, I have been

abundantly blessed with all that my heart desires: becoming a mom to three precious children, finding my dream job, and having the strength to finish my doctorate degree.

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# Section 1: The Problem

Autism spectrum disorder (ASD) is classified in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM–IV) as a neurodevelopmental disease characterized by abnormalities in social communication and other cognitive and physical activities (American Psychiatric Association, 2013). According to Zablotsky et al. (2019), data from the National Health Interview Survey revealed that the percentage of ASD diagnoses for children ages 3–17 years increased from 1.1% (2009–2011) to 2.5% (2015–2017) in the United States. In 2018, one in four children was diagnosed with ASD (Autism and Developmental Disabilities Monitoring Network of the Centers for Disease Control and Prevention, 2021). Out of those statistics, specific groups of children were more likely to be diagnosed with ASD. Groups included boys compared to girls; children of non–Hispanic White and non–Hispanic Black races compared to Hispanic children or other races; children in rural areas compared to urban areas; and children with public health insurance compared to private insurance.

Students with autism cannot build age–appropriate peer relationships; demonstrate restrictions in sharing interests, successes, and pleasures with others; and have limited social–emotional actions (Habib, 2018). These characteristics highlight critical deficits in social readiness in students with autism. In 1991, Carol Gray coined the term *social stories* to educate and improve social skills for students with autism. Typically, social stories allow students with autism to react to queries or describe their understanding of a situation (Gray, 2015). Digital social stories (DSSs) combine traditional social stories with the efficiency of information and communication

technologies (see Appendix B). They have opened new avenues for assisting students with autism, particularly in social skills (Stathopoulou et al., 2020). These include video and audio production, interactive software, and computer graphics. Over the past decade, Francese (2021), Ghanouni (2019), and Liu et al. (2021) studied the effectiveness of DSSs in teaching social skills to students with autism. To effectively use DSSs to teach appropriate social skills to students with autism in the inclusive classroom, special educators require adequate professional development and implementation support. Barriers, such as a lack of professional development or support, prevent the appropriate integration of technology (Ottenbreit–Leftwich, 2018).

In the current project study, I explored elementary special educators' experiences with professional development and implementation support in using DSSs with students with autism in a school district in the southeastern United States. In Section 1, I introduced the local problem, discussed the study's rationale, provided definitions of terms, explained the significance of the study, and provided research questions that guided the study.

## The Local Problem

The local problem at a school district in the southeastern United States was that elementary special educators were experiencing inadequate professional development and implementation support in using DSSs with students with autism. In May 2020, special educators at an elementary school, Belmont Hill Elementary School (BHES, a pseudonym), in the study district attended one 2–hour professional development session to implement DSSs in their instruction to teach appropriate social skills to students with

autism. The preschool special education teacher noted that special educators at BHES continued using DSSs for the 2020–2021 school year without adequate professional development and implementation support. Thus, there were a consistently high number of behavior infractions for students with autism at BHES. The problem that was addressed through this study was that special educators were not receiving adequate professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

According to the school's lead special education teacher, special educators must receive adequate professional development and support for implementing DSSs in their classrooms effectively. However, they were not, and data from the school indicated that behavior referrals for students with autism increased in 2022. Thus, there were a significant gap in practice concerning the lack of adequate professional development and implementation support of DSSs at BHES. As a result, the gap in practice was special educators were insufficiently prepared to use DSSs with students with autism. This research identified areas where adequate professional development and support were needed to implement DSSs effectively.

## Rationale

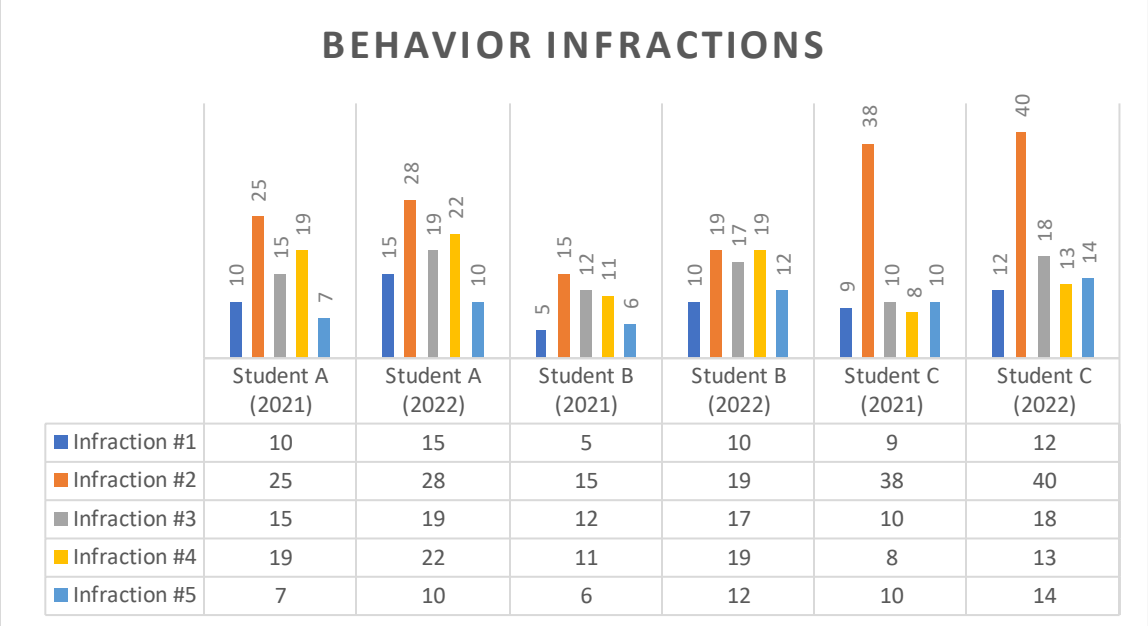
In this basic qualitative project study, I explored elementary special educators' experiences with professional development and implementation support in using DSSs with students with autism. In May 2020, special educators at BHES attended one 2–hour professional development session to implement DSSs. During the session, one librarian stated, "We were shown how to identify inappropriate social skills for students with

autism and other special need." A third–grade special educator further stated that they were shown how to create DSSs using technology. She stated that they were shown five to seven different DSSs during the professional development session. Then, they were shown how to integrate DSSs and assessed the effectiveness of using DSSs.

However, special educators have not received adequate professional development or implementation support to use DSSs effectively since May 2020. The preschool special education teacher at BHES reported that her students with autism had shown increased inappropriate social skills since implementing DSSs into her instruction in September 2021. She noted the behavior infractions documented in her classroom. Behavior infractions included (a) not walking calmly in the classroom, (b) being off task during independent work, (c) refusing to follow simple two–step commands or directions, (d) not listening during instruction, and (e) not playing nicely with friends. Furthermore, the preschool special education teacher noted that behavior infractions increased in February 2022 as seen in Figure 1. Figure 2 describes the total number of behavior infractions for three preschool students with autism.

**Figure 1**

*Comparison of Increase in Behavior Infractions*

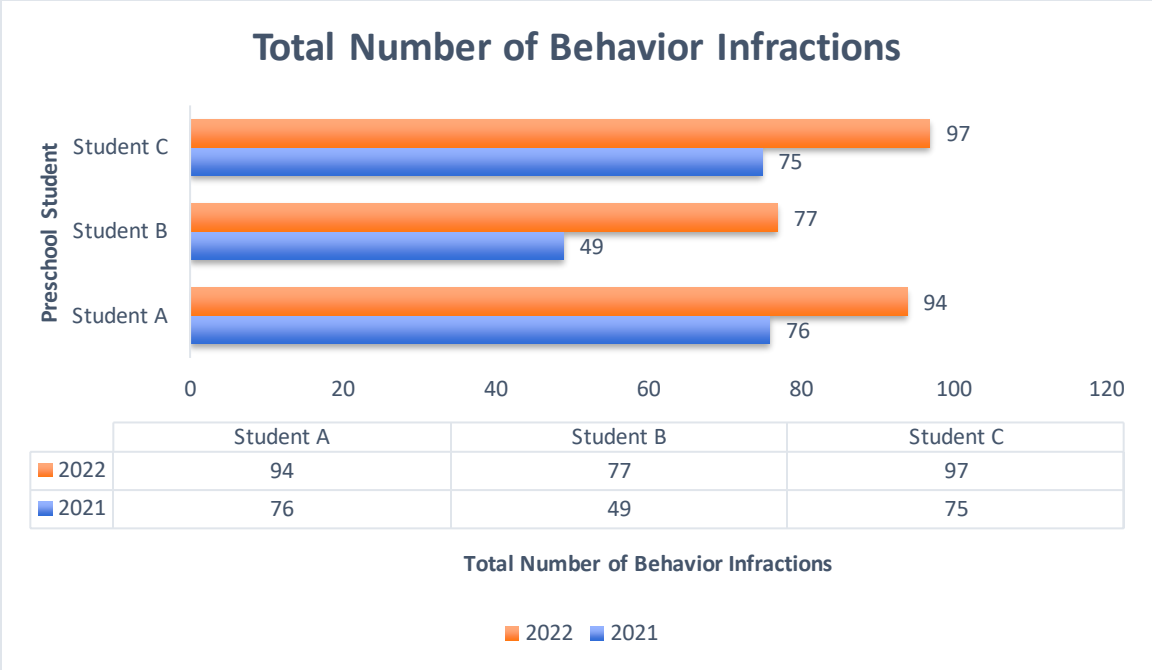



| | Student A (2021) | Student A (2022) | Student B (2021) | Student B (2022) | Student C (2021) | Student C (2022) |
|---|---|---|---|---|---|---|
| Infraction #1 | 10 | 15 | 5 | 10 | 9 | 12 |
| Infraction #2 | 25 | 28 | 15 | 19 | 38 | 40 |
| Infraction #3 | 15 | 19 | 12 | 17 | 10 | 18 |
| Infraction #4 | 19 | 22 | 11 | 19 | 8 | 13 |
| Infraction #5 | 7 | 10 | 6 | 12 | 10 | 14 |

*Note*. Figure 1 shows the behavior infractions documented in the preschool special education classroom. Behavior infractions included: (a) not walking calmly in the classroom, (b) being off task during independent work, (c) refusing to follow simple two–step commands or directions, (d) not listening during instruction, and (e) not playing nicely with friends.

**Figure 2**

*Total Number of Infractions for Three Preschool Students*




*Note.* Figure 2 shows a visual representation of the total number of behavior infractions for three preschool students with autism. The data represent the total number of behavior infractions in 2021 and 2022.

Ongoing professional development and implementation support are key factors in effectively integrating technology, such as DSSs, to teach appropriate social skills to students with autism. Professional development and implementation support are equally underrepresented when examining the local sites' school improvement plan. Anderson and Putman (2020) examined the viewpoints of elementary special education teachers regarding technology integration in the classroom. Their findings revealed the teachers' perspectives on the importance of technology in special education classes, including providing differentiation, presenting diverse topic representations, increasing motivation

and engagement, facilitating formative assessment, and promoting life skills. Additionally, time management, access to technology, teacher beliefs, professional development, and technical support represented further obstacles (Francom, 2020).

In consideration of the problem, the purpose of this qualitative project study was to explore special educators' experiences with professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

## Definition of Terms

*Assistive technology (AT)*: Mechanical, electronic, computer–based, nonelectronic, or non–computer–based instructional materials, strategies, or services that individuals with disabilities can use to learn, gain access to resources, develop workplace competence and success, or enhance their quality of life (Rao et al., 2021).

*The Assistive Technology Act of 1998*: The Assistive Technology Act of 1998, which was reauthorized that year, featured an extension of technology beyond its use for functional educational needs. The expansion guaranteed that students with special needs had better access to the mainstream curriculum regardless of their educational setting (Gargiulo et al., 2018).

*Augmented reality (AR)*: An emerging technology that can assist students in acquiring knowledge by collaborating with computer–generated entities in the real world. AR can engage and motivate students in a controlled school environment. It enables students to visualize physical objects, enhancing realism rather than replacing them (Agarwal & Thakur, 2014).

*Autism spectrum disorder (ASD)*: ASD is classified in the DSM–IV as a neurodevelopmental disease characterized by abnormalities in social communication and other cognitive and physical activities (American Psychiatric Association, 2013).

*Concerns–based adoption model (CBAM)*: The CBAM is a theory that helps leaders and researchers understand, lead, and track the complicated process of change in education (Hall & Hord, 2001).

*Digital social stories (DSSs)*: DSSs combine traditional social stories with the efficiency of information and communication technologies and have opened new avenues for assisting students with autism, particularly in social skills (Stathopoulou et al., 2020).

*High–tech*: High technology consists of complex assistive technology devices that utilize power sources and are difficult to use (Khazanchi & Khazanchi, 2022).

*Implementation support*: Individuals and organizations engaging with consultants, coaches, technical assistance providers, and others whose primary role is to facilitate the establishment, maintenance, and expansion of research–supported inventions to benefit their defined target groups (Albers et al., 2022).

*Inclusive classroom*: In an inclusive classroom, students with and without disabilities learn together in a general education setting (Khazanchi & Khazanchi, 2022).

*Innovation*: Any resource, instrument, concept, or practice that an individual has never utilized (Rogers, 1995, 2003).

*Levels of use (LoU)*: When learning to utilize an innovation, individuals progress through eight levels. There are various degrees of usage, ranging from nonuse to renewal (Hall et al., 1977).

*Low–tech:* Low technology refers to simple assistive technology devices that do not require an external power source (Khazanchi & Khazanchi, 2022).

*Mid–tech*: Mid–technology refers to an assistive technology device that is powered by an external source and is easy to operate (Khazanchi & Khazanchi, 2022).

*Professional development*: A process of ongoing and professional learning and growth in which educators willingly participate, progressively acquiring confidence, autonomy, additional knowledge, and skills to enhance their practices to solve the learning problems of students (Avalos 2011; Bautista & Ortega–Ruiz, 2015; Mizell 2010).

*Social skills*: The ability to communicate and connect with other people, both vocally and non–verbally, through gestures, body language, and personal appearance (Chamberlain et al., 2007; Cotugno, 2009; Reichow & Volkmar, 2010; Schneider & Goldstein, 2010).

*Stages of concern (SoC)*: The seven stages of concern that individuals experience when adopting an innovative technology (Hall et al., 1975).

*T3 framework*: Magana's T3 framework is a method that uses modern teaching and learning tools, such as educational technology, to improve teaching practices. The T3 framework organizes educational technology tools and how they affect learning into three domains: *translational* technology use, *transformational* technology use, and *transcendent* technology use (Magana, 2017).

## Significance of the Study

In this qualitative study, I addressed the problem of inadequate professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. The results of this study might be used to inform the study district's professional development coordinator about gaps in professional development and implementation support. A deep understanding of inadequate professional development and implementation support may help inform changes that need to be made to the curriculum documents, standards, and additional support that can be provided to special educators.

Based on the findings, the project study may create a professional development program to improve the use of evidence–based practices (such as DSSs) and technology integration, with the likelihood that special educators will effectively implement DSSs to teach appropriate social skills to students with autism. Additionally, the professional development program may lead to increased collaboration among special educators, resulting in the effective use of DSSs in instruction and decreased behavior referrals for students with autism.

## Research Questions

The research questions (RQs) were related to the study's problem and purpose. The RQs were also aligned with the conceptual framework. The two interrelated RQs provided the foundation for exploring the special educators' experiences with professional development and implementation support in using DSSs with students with autism at BHES. The RQs were as follows:

RQ1: What are the special educators' experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES?

RQ2: What are the special educators' experiences with implementation support in using DSSs to teach appropriate social skills to students with autism at BHES?

## Review of the Literature

### Conceptual Framework

The concerns–based adoption model (CBAM) and Magana's T3 framework provided the conceptual framework for this study (Hall et al., 1973, 1975; Magana, 2017, 2018). The CBAM may be used to investigate innovative programs and help educational leaders and researchers understand, lead, and monitor change in education (Hall et al., 1973, 1975). The model was examined, specifically focusing on the three constructs: stages of concern (SoC), levels of use (LoU), and innovation configurations (IC). The T3 framework provides schools with the structure, strategies, and tools necessary to implement transcendent technology into their classrooms and daily lessons (Magana, 2017, 2018). The model was examined, specifically focusing on the three constructs: translational technology use, transformational technology use, and transcendent technology use.

#### *Concerns–Based Adoption Model (CBAM)*

The CBAM is a model that helps educational leaders understand, lead, and track the complicated process of change in education. In this model, educators are considered

agents of change in education (Hall & Hord, 1987, 2001). According to Ely (1999), Fullan (1993), and Kotter (1996), Hall & Hord's research provided a historical framework that numerous influential change theorists have since applied to education. Change can only be realized through the collaboration of educational leaders, educators, and other stakeholders. However, initial questions focus on the individual: How will I be impacted? When these questions are answered, further task–oriented questions emerge: How do I do it? How can I effectively utilize these materials? How should I organize myself? Why does it take so long? Finally, when self–related– and task–related concerns are resolved, the individual may concentrate on the impact of the change: Is this change effective for students? Is there something even more effective?

The CBAM effectively implements a new program more than giving staff members materials, resources, and professional development. The CBAM provides tools and strategies that allow educational leaders to evaluate staff concerns and a program used to offer the required support to everyone to ensure their success. There are three constructs for assessing and guiding this model. The constructs are SoC, LoU, and IC.

The constructs of the CBAM were designed to assess and guide the effective implementation of a new program. The CBAM consists of three constructs: the SoC, which is a gauge of staff's perceptions and emotions regarding innovation; the LoU, which is an evaluation of the extent to which the innovation is being implemented; and the IC, which is an explanation of what the innovation means. In an educational setting, the adoption process can be effectively represented by all its constituent parts, each of which has a distinct function, but the whole is stronger than the sum of its parts. The

CBAM and its constituent parts will each be dissected to show the connections to this research. Table 1 shows the three constructs for assessing and guiding the CBAM.

**Table 1**

*The Concerns–Based Adoption Model*

| Constructs | Description |
|---|---|
| Stages of concern | The stages of concern approach, which consists of a questionnaire, a brief interview, and open–ended written statements, help educational leaders to determine the attitudes and beliefs of staff regarding a new program or effort. With this information, educational leaders may address the specific issues of individuals. |
| Levels of use | Levels of use are interview attempts to characterize the behaviors of users and nonusers about the innovation to determine the innovation's levels of usage. |
| Innovation configurations | Educators and researchers would collaborate to develop the innovative configurations to define the innovation. It is the establishment of mutual understanding. Its objective is to define the possible operational forms of innovation. Different users will implement the innovation in diverse ways. |

*Note.* The table describes each construct in the CBAM.

**Stages of Concern (SoC).** SoC addresses the affective domain of change. For a new program to be successful, it is essential to address the concerns of the individuals tasked with implementing it. Change can cause various reactions in staff members, ranging from tension and anxiety to cynicism and burnout. School and district leaders can recognize staff concerns and provide targeted support to assist them in coping with their challenges and remaining focused on the task using the SoC approach. Seven stages of

concern related to innovation include 0: unconcerned; 1: informational; 2: personal; 3: management; 4: consequence; 5: collaboration; and 6: refocusing.

The SoC process consists of a questionnaire, a brief interview, and open–ended written statements. It allows school and district leaders to determine how staff feel about a new program or effort by identifying their attitudes and views. With this information, educational leaders can act to address the specific issues of individuals. Through this project study, I sought to use the SoC to address the special educators' experiences with professional development and implementation support in using DSSs with students with autism, including the use of a brief interview.

The SoCs are as follows:

- SoC questionnaire: The 35–item questionnaire asks staff to rate how much they agree with different statements about an innovation, such as how they will be able to manage everything that a new program requires. With this evaluation method, educational leaders can examine the concerns of many staff at different sites. The questionnaire is available in print and online.
- Brief interviews: Brief interviews are short, one–on–one talks with staff about how they feel, what they think, and how their reactions to a new program are.
- Open–ended written statements: When given at a staff meeting, open–ended written statements ask staff to write about what worries them about a new idea. With this method, school and district leaders can learn more about how their staff feels.

Fuller's hierarchy of concerns theory serves as the foundation for the CBAM. As a result of her research, Fuller determined that concerns about teaching could be classified into four distinct categories: impact, task, self, and unrelated (Hall & Hord, 1987). In their study, Reeves and Kazelskis (1985) investigated the concerns of preservice and in–service teachers using Fuller's hierarchy of concerns theory. Impact concerns were the highest for both preservice and veteran teachers. There were no differences between the self, task, and unrelated concerns of veteran teachers. Table 2 describes the SoC and includes a typical statement for each concern.

**Table 2**

*Seven Stages of Concern and a Typical Statement for Each Concern*

| Stage of concern | Description | Typical statement |
|---|---|---|
| 0: Unconcerned | The innovation does not appear to have much concern or involvement from those present. | *I heard about it, but I am preoccupied now.* |
| 1: Informational | There is evidence of a general awareness of innovation as well as a desire to know more specifics about it. This individual is not concerned about themselves or themselves in connection with the innovation. In this selfless approach, the individual is interested in the fundamental components of innovation, such as its general qualities, impacts, and prerequisites for use. | *This new program is intriguing, and I would like to learn more about it.* |
| 2: Personal | The individual is unsure of the invention's requirements, their inadequacy to meet those requirements, and their role in the innovation. This involves a review of their job regarding the organization's compensation system, decision–making, and assessment of potential conflicts with current structures or personal commitments. The financial or social repercussions of the program for oneself and others may also be considered. | *I am worried about the upcoming adjustments to my routines.* |
| 3: Management | The processes and responsibilities linked with making use of innovation are the primary focus of attention, along with making the most efficient use of information and resources. The requirements placed on effectiveness, organization, administration, and the management of schedules and times are of the utmost significance. | *I am worried about the amount of time required to prepare to teach with this new program.* |
| 4: Consequence | The effect that the innovation has on the students who fall within the individual's immediate area of influence is the primary focus of attention. The evaluation of student outcomes, including their performance and competencies, and the modifications required to increase student outcomes are the primary focuses here. | *How will my students be impacted by this new program?* |
| 5: Collaboration | The coordination and collaboration with various parties about the application of the innovation are the primary focus currently. | *I anticipate discussing this topic with other educators.* |
| 6: Refocusing | The examination of more universal benefits that can be derived from innovation is currently the primary focus. This may involve the potential for significant changes or the substitution of a more effective alternative. The individual has definite thoughts regarding alternatives to the shape of the innovation that is being suggested or that already exists. | *I have some suggestions about something that could be improved.* |

Participants can move quickly or slowly through the SoC process. Progression depends on whether concerns about innovation are addressed by educator leaders, coaches, or mentors. If participants' issues are not addressed, they will remain at the awareness or informational level throughout the training. If the participant's worries are resolved, they will progress along the continuum toward complete adoption of the innovation.

**Levels of Use (LoU).** The second construct used in the CBAM is LoU. LoU are interview attempts to characterize the behaviors of users and nonusers about the innovation to determine the innovation's levels of usage. The emphasis is not on how individuals feel about the innovation, but on what they do in response to it (Hall & Loucks, 1977). Based on research by Hall et al. (1975), the CBAM is a multilevel process that outlines the behaviors educators do when they gain familiarity with and proficiency with a practice or embrace a change. Nonuse, orientation, and preparation, the three lowest levels in the hierarchical sequence, come within the world of the nonuser. The hierarchy's top five levels are mechanical use, routine use, refinement, integration, and renewal. Table 3 describes the eight LoU and a typical statement for each level. Like the SoC, the stages illustrate a continuous development from the nonuse of innovation through expertise, experience, and searching for methods to modify an existing innovation.

**Table 3**

*Eight Levels of Use and a Typical Statement for Each Level*

| Level | Description | Typical statement |
|---|---|---|
| 0: Nonuse | The user does not know about the innovation, is not involved, and is not trying. | *I have heard about it, but I have too many other obligations now.* |
| 1: Orientation | The user has recently sought or is seeking information about the innovation and/or its value orientation and expectations on the user and user system. | *I am examining materials relating to the innovation and am contemplating its potential future application.* |
| 2: Preparation | The user prepares to try the innovation. | *I participated in the workshop and set aside time each week to study the materials.* |
| 3: Mechanical use | The user prioritizes short–term, day–to–day use of the innovation over reflection. User needs trump client needs when changing use. The user learns the innovation step by step, sometimes resulting in disconnected and shallow learning. | *Every day, I spend much of my time organizing materials and ensuring that everything runs as smoothly as possible.* |
| 4: Routine use | Innovation use has been maintained, and changes are rarely made. Innovation use and its effects are not being considered. | *This year has gone well. Next year, there will be a few modifications, but I will continue to use it in the same manner as this year.* |
| 5: Refinement | The user changes how they use the innovation to benefit the local clientele. Variations reflect the client's short–term and long–term effects. | *I have developed a more detailed assessment instrument to obtain more specific feedback from students to determine where I need to modify my use of the innovation.* |
| 6: Integration | The user is collaborating with other employees to impact clients in a mutual field of influence by using innovation. | *Not everyone possesses the skills necessary to maximize the program's impact on student learning, but I joined a Professional Learning Team to collaborate with other sixth–grade educators.* |
| 7: Renewal | The user reassesses the innovation's quality of use, seeks major changes to maximize client impact, investigates new field advances, and sets new goals for themselves and the system. | *I am still interested in the program and modifying it for future use. I have been reading, conversing with other educators, and even conducting a little research to determine whether a different approach would be more beneficial for the students.* |

**Innovation Configurations (ICs).** ICs are the final construct in the CBAM. Typically, educators and researchers would collaborate to develop innovative configurations to define the innovation. It is the establishment of mutual understanding. Its objective is to define the possible operational forms of innovation. Different users will implement the innovation in diverse ways. According to Hall and Hord (2001), it is necessary to define or configure the innovation.

An innovation configuration map (ICM) is the principal deliverable of an innovation configuration analysis. Additionally, the ICM demonstrates various implementation options for innovation. It comprises elements of innovation and their variants. Typically, an innovation configuration map will have eight to 15 components, and each component will have several versions (typically two to six). The number of components will vary based on the innovation's complexity and the required level of detail (Hall & Hord, 2001). For example, an ICM for an innovative technology program such as DSSs could contain materials used, educator behaviors, and student activities, detailing the optimal, acceptable, and less desired implementation variations.

There is an increasing number of studies that use the CBAM as a method to examine the expanding role of technology in teaching and learning due to the ongoing expansion of technology in education. The low degree of integration has led to an emphasis on educators' concerns over technology implementation in classrooms.

**Connection to the Project Study.** Implementing a new program requires change, which is a long–term process. In this project study, I used the CBAM model to explore the special educators' experiences with professional development and implementation

support when using DSSs to teach students with autism. To understand how to achieve implementation, it is necessary to examine educators' motivation to use technology and the support, including professional development, needed to do so (Habib et al., 2021; Panagiotidis et al., 2018; Puspitarini & Hanif, 2019; Stockwell & Reinders, 2019; Zamir & Thomas, 2019). Thus, using the CBAM model also allowed me to assess each special educator's motivation and needs to implement DSSs in their teaching and learning effectively. As a result, DSSs are implemented with fidelity without major changes or modifications.

This project study measured two key elements of the CBAM (Hall & Hord, 2001), which were behavioral and affective. The behavioral element focused on the special educators' actual level of use of the DSSs. The LoU was measured using the technology integration standards configuration matrix. The affective element focused on the special educators' feelings about the implementation of DSSs, which included questions from the SoC questionnaire. Finally, a temporal element was included to measure the time that special educators had taught in a technology–rich environment using DSSs to teach students with autism. The three–element approach to exploring special educators' experiences with professional development and implementation support using DSSs to teach students with autism strengthened this project study.

### *T3 Framework*

In 2017, Sonny Magana published the T3 framework to provide schools with the structure, strategies, and tools necessary to implement transcendent technology into their classrooms and daily lessons. It is a method that uses modern teaching and learning tools,

such as educational technology, to improve teaching practices. The T3 framework organizes educational technology tools and how they affect learning into three domains: T1: translational technology use, T2: transformational technology use, and T3: transcendent technology use (Magana, 2017). Magana and Marzano (2014) asserted that the combined effect of technology use and efficient implementation of reliable instructional strategies was greater than that of either variable alone. As shown in Table 4, the combined conceptual framework comprises three stages of Magana's T3 framework.

**Table 4**

*Magna's T3 Framework*

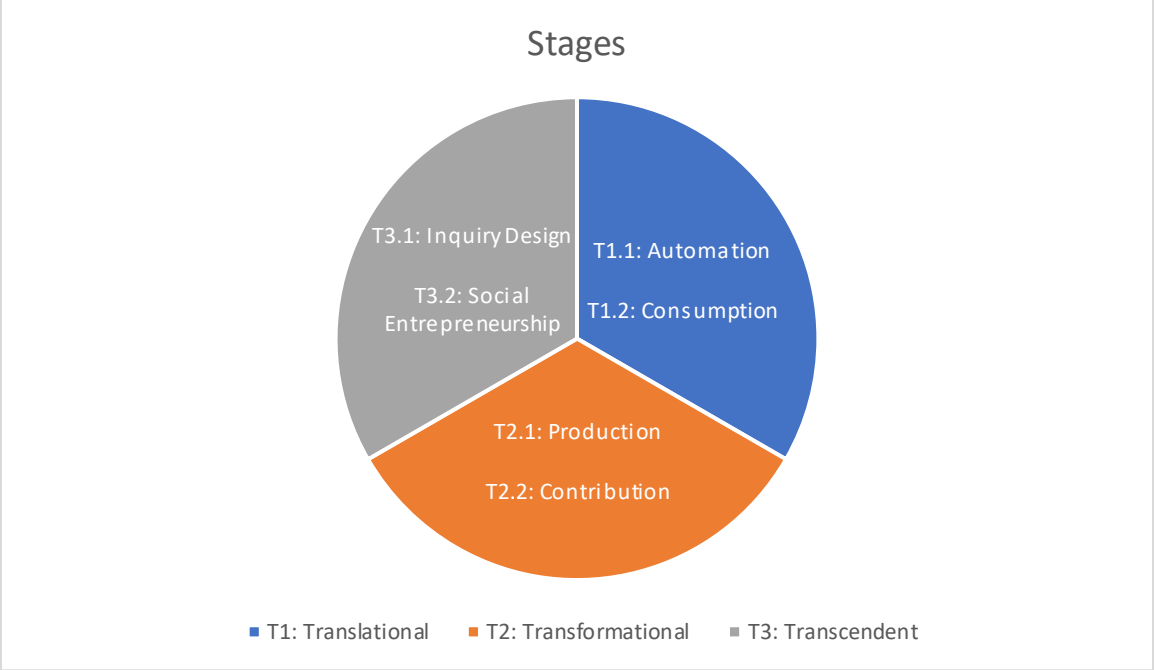
| Stages | Description |
|---|---|
| T1: Translational technology use | The purpose of this domain reflects the most prevalent uses of digital tools in schools. Translating analog tasks to their digital equivalents is beneficial for increased efficiency, accuracy, and time savings. |
| T2: Transformational technology use | The purpose of transformational technology use is to strengthen students' learning expertise in ways that would not be possible without technology, enabling them to attain increased knowledge and proficiency. |
| T3: Transcendent technology use | The purpose of transcendent technology use is to prepare learners for future proficiency in learning. Contentious issues important to students are the primary focus of the educational technology learning experience. |

*Note.* The table describes the stages of Magana's T3 framework, which includes T1: translational technology use; T2: transformational technology use; and T3: transcendent technology use.

The constructs of the T3 framework identify crucial shifts in how classroom teachers can use their existing educational technologies to improve the visibility of students' thinking and learning to their teachers, themselves, and classmates (Magana, 2017). The following constructs of the T3 framework organize the application of technology in education into three hierarchical domains: translational, transformational, and transcendent (Magana, 2017). Integration of technology, which can revolutionize and transcend learning environments for young students, is essential to the delivery of modern education (Ly–Hoang et al., 2022). Figure 3 shows the stages of educational technology use.

**Figure 3**

*Stages of Educational Technology Use*



**T1: Translational Technology Use.** The first construct of the conceptual framework used in this study, the T3 framework, is T1: translational technology use. Magana (2017) defines translation as "the act of transferring or bearing something or some tasks across two different temporal modalities" (p. 27). The purpose of this construct reflects the most prevalent uses of digital tools in schools. Translating analog tasks to their digital equivalents is beneficial for increased efficiency, accuracy, and time savings. This domain contains two elements, which are automation (T1.1) and consumption (T1.2).

Automation occurs when the teacher or student uses technology to automate learning tasks. As shown in Table 5, teachers can ask themselves the following clarifying questions to determine whether the technology in their classrooms represents the automation stage. Consumption occurs when the teacher or student accesses and consumes digital content, knowledge, and information from online sources or other electronic media. Applying translational technology skills in classrooms can enhance students' interactions with acquiring surface–level knowledge. These include multisensory content and information environments, content–specific gaming environments, automated assessment, and polling tools, and video tutorial sites. Translational technology skills provide students with access to a vast array of content knowledge that they can easily consume using tablets, laptops, or smartphones (Magana, 2017). As shown in Table 6, teachers can ask the following guiding questions to determine whether the technology used in their classrooms represents the consumption stage.

**Table 5**

*T1.1: Automation—Guiding Questions for Translational Technology Use*

| Guiding question | Response | | Value indicator |
|---|---|---|---|
| 1. Does technology use result in time savings? | Yes | No | Efficiency |
| 2. Does the technology use result in fewer task–related errors? | Yes | No | Accuracy |
| 3. Does technology use increase the number of tasks completed in each amount of time? | Yes | No | Quantity |
| 4. Does the use of technology improve the attributes of the task's product? | Yes | No | Quality |

*Note.* The table identifies the guiding questions for the automation stage of translational technology use (Magana, 2017, p. 29).

**Table 6**

*T1.2: Consumption—Guiding Questions for Translational Technology Use*

| Guiding question | Response | | Value indicator |
|---|---|---|---|
| 1. Do students use digital tools to consume content–related knowledge and information? | Yes | No | Access |
| 2. Do students use digital tools to consume interactive content–related resources? | Yes | No | Access |
| 3. Does student use of technology for information consumption result in time savings? | Yes | No | Efficiency |

*Note.* The table identifies the guiding questions for the consumption stage of translational technology use (Magana, 2017, p. 33).

**T2: Transformational Technology Use.** The second construct of the T3 framework is T2: transformational technology use. Magana (2017) defines transformation as "to make a thorough or dramatic change in substance, form, or character" (p. 38). The purpose of transformational technology use is to strengthen students' learning expertise in ways that would not be possible without technology, enabling them to attain increased knowledge and proficiency. Production (T2.1) and contribution (T2.2) are the two elements of the transformative stage of technology use.

The production element strategies guide students in using technologies to produce proficiency goals that assist them in monitoring, tracking, and visualizing their effort, progress, and emotions throughout their learning journeys. In addition, the digital thinking and learning products students produce serve as scaffolds to assist students in storing and retrieving information from long–term memory more effectively by developing metacognitive strategies.

The strategies in the contribution element scaffold students' use of digital tools to design, create, share, and curate digital tutorials to teach others. By creating digital tutorials as opposed to merely consuming them, students are fundamentally transformed. Students become interdependent contributory learners who produce archivable and accessible digital tutorials that aid in the consolidation of their knowledge by making their thinking and learning visible to their teachers and peers.

Applying transformational technology skills in classrooms can enable special educators to unlock students' boundless learning potential and accomplish significant educational goals by placing them at the center of classroom experiences and elevating

their attitude to a new and superior condition to their previous learning experience. Table 7 shows the guiding questions for T2.1: Production, and Table 8 shows the guiding questions for T2.2: Contribution.

**Table 7**

*T2.1: Production—Guiding Questions for Transformational Technology Use*

| Guiding question | Response | | Value indicator |
|---|---|---|---|
| 1. Do students use digital technologies to produce, review, archive, and update personal proficiency goals? | Yes | No | Creating and communicating proficiency goals |
| 2. Do students use digital technologies to continuously track and visualize their growth toward their proficiency goals? | Yes | No | Monitoring and visualizing growth |
| 3. Do students use technology tools to produce, archive, and review authentic knowledge artifacts that represent what students know and can do while making their thinking explicit? | Yes | No | Multiple means of representing knowledge and thinking |

*Note*. The table identifies the guiding questions for the production stage of transformational technology use (Magana, 2017, p. 43).

**Table 8**

*T2.2: Contribution—Guiding Questions for Transformational Technology Use*

| Guiding question | Response | | Value indicator |
|---|---|---|---|
| 1. Do students use digital tools to contribute to and track their observance of classroom promises and commitments? | Yes | No | Contribution to the classroom environment |
| 2. Do students use digital tools to produce authentic tutorials designed to contribute to others' learning? | Yes | No | Contribution to the learning community |
| 3. Do students use digital tools to curate their authentic learning tutorials? | Yes | No | Contribution to the learning community |

*Note*. The table identifies the guiding questions for the contribution stage of transformational technology use (Magana, 2017, p. 54).

**T3: Transcendent Technology Use.** The third construct of the T3 framework is T3 transcendent technology use. Magana (2017) defines transcendent as "to climb or to surmount" (p. 63). The purpose of transcendent technology use is to prepare learners for future proficiency in learning. Contentious issues important to students are the primary focus of the educational technology learning experience. Applying transcendent technology skills encourages students to ask thought–provoking and open–minded questions and helps them move beyond the expected learning experience. Thus, transcendent technology use includes two stages: T3.1: inquiry design and T3.2: social entrepreneurship.

Beginning with student passion, transcendent technology use culminates with students designing original lines of inquiry, transferring newly acquired and consolidated

knowledge, and using social entrepreneurship strategies to solve wicked problems that matter to them. Table 9 shows the guiding questions for T3.1: Inquiry Design, and Table 10 shows the guiding questions for T3.2: Social Entrepreneurship.

**Table 9**

*T3.1: Inquiry Design—Guiding Questions for Transcendent Technology Use*

| Guiding question | Response | | Value indicator |
|---|---|---|---|
| 1. Do students use technology to investigate a wicked real–life problem that matters to them? | Yes | No | Identifying relevant problems that ignite students' curiosity and passion |
| 2. Do students use technology to design an original line of inquiry focused on generating a robust solution to the problem? | Yes | No | Creative ideation and investigation by posing the question "What if?" |
| 3. Do students use technology to communicate, defend, and iterate their unique knowledge contribution to solve the problem? | Yes | No | Contributive iteration toward a more robust solution |

*Note.* The table shows guiding questions that can help educators evaluate how transcendent technology use is being implemented that represents the inquiry design stage (Magana, 2017, p. 69).

**Table 10**

*T3.2: Social Entrepreneurship—Guiding Questions for Transcendent Technology Use*

| Guiding questions | Response | | Value indicator |
|---|---|---|---|
| 1. Do students imagine, design, and create new digital tools or platforms as solutions to wicked problems that matter? | Yes | No | Ideation of original solutions through the rigorous struggle with wicked, ill–structured problems |
| 2. Do students beta test, iterate, and generate robust versions of their digital solutions to wicked problems that matter? | Yes | No | Developing iterative resolutions aimed toward generating a more robust solution |
| 3. Do students use digital tools to scale the implementation of their robust digital solutions to wicked problems that matter? | Yes | No | Implementing and scaling more robust solutions |

*Note.* The table shows guiding questions that can help educators evaluate how transcendent technology use is being implemented that represents the social entrepreneurship stage (Magana, 2017, p. 78).

Using the T3 framework as the conceptual framework for this study was an excellent choice for several reasons. First, the framework was justified because it was consistent with the study's purpose. The purpose of this qualitative project study was to explore special educators' experiences with professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. The conceptual framework described the structure, strategies, and tools for integrating transcendent technological applications into schools, classrooms, and daily lessons. It allowed me to identify discrepancies between what students are being asked to produce in the classroom and how teachers use digital technologies.

As a result, the T3 framework may increase the impact of digital technologies to unlock students' limitless capacities for self–regulation, self–determination, and contributive learning. Also, it may transform the low technology use in the study district by providing a blueprint with clear objectives and just adequate mileposts to permit creativity to flourish instead of rigid, prescriptive compliance.

Furthermore, the T3 framework was an excellent choice for the conceptual framework because the effectiveness of technology integration to enhance instruction in K–12 classrooms has been used to structure similar studies for over a decade. For example, Turvey and Pachler (2020) examined design principles that can support increasing the pedagogical provenance of educational technology research. Their study's findings were mixed, as significant gaps and weaknesses were reduced early, particularly in practice. The difficulty of this study left many areas open for additional investigation and demonstrated the importance of further research on technology–supported learning (Turkey & Pachler, 2020), which is a need in the study district.

In other research studies, the T3 framework was used as the foundation of their research to promote and support science online learning in early childhood, and found the model helped students with special needs process information faster by first figuring out how they learn best (Almarode et al., 2021; Ly–Hoang et al., 2022).

**Connection to the Project Study.** The T3 framework was used to examine the phenomenon, organize, and evaluate the data collected for this project study. The three constructs of the T3 framework were used to establish the foundation for the RQs on special educators' experiences with professional development and implementation

support in using DSSs to teach appropriate social skills to students with autism. The T3 framework provided a way to measure how much a student has learned and how well they are using technology. This measurement is considered both kinesthetic and tactile learning in virtual settings.

Magana's T3 framework helped answer the RQs by allowing the individuals who participated in the study to recognize how digital technology helps with learning. If school leaders recognize that technology use is at level T1, they can provide special educators with professional development and implementation support that helps them perform at level T2. Researchers suggested that the T3 framework influences technology integration in the classroom by resolving the level of measurement, which showed that students are learning digital fluency (Magana, 2017, 2018). Finally, the T3 framework's measurement encouraged creative technology integration that can lead to lifelong learning for students with autism.

The two models, CBAM and T3 framework discussed in this section shared a common assumption that knowledge development was individual and social. It occurred along a spectrum. In each model, learning was the initial step in knowledge development, and it took place in small steps. Participants moved through a spectrum that included implementation, evaluation, explication, and refinement until they could apply the knowledge in individual and distinctive ways.

Hall and Hord's (1987, 2001) model focused on the procedural component of learning and how it is intricately connected to adoption, adaptation, and transformation. The approach started with the acquisition of fundamental knowledge and abilities. As a

learner's confidence in an innovation increase, they start implementing the newly acquired knowledge into their personal and professional performance. The two domains that best represented this project study were SoC and LoU.

The SoC described how participants felt about acquiring new knowledge and skills before, during, and after an innovation or new tool has been introduced. Also, these stages provided insights into professional development. First, they emphasized the significance of meeting people where they are and answered their questions when they ask them. Often, participants' concerns were not addressed. They were uncomfortable implementing new materials and instructional strategies. Next, this model emphasized the significance of focusing on implementation for several years. It takes at least three years for early problems to be resolved and for subsequent issues to surface. Participants' self–concerns must be addressed before preparing to participate in training. Lastly, due to the numerous demands placed on educators, it is frequently the case that once their practice becomes normal, they lack the time and space to assess whether and how learners are progressing. This established organizational priorities and generated interest and concern for specific student learning goals. The LoU described how often the participant uses the innovation or new tool.

Magana's (2017, 2018) T3 model outlined three stages that guide effective teaching and learning with technology and provided a hierarchy of value for technology use. First, the translational uses of technology are defined as performing old tasks in new ways by translating conventional tasks into digital ones. For example, special educators

might use low–tech digital tools, such as picture cards, visual boards, sensory balls, and noise–canceling earphones.

Next, the transformational uses of technology promote performing new tasks in new ways. Transformational uses of technology require substantial disruptions or changes like the task, the role of the person performing the work, or the effect of the task on those who perceive the object of the effort. Some examples are using mid–tech digital tools, such as speech–generating apps, battery–operated sensory toys, and DSSs.

Finally, the transcendent uses of technology provide the highest value to teaching and learning. The transcendent uses of technology exceed the traditional implementation process of technology in classrooms. This domain provides an opportunity for new processes by transcending instructional and learning tasks with new and emerging technologies. Both the task and agent (the educator of the learner) change because of the transcendent uses of technology. For example, high–tech digital tools, such as augmentative reality and robots, have been designed to increase social skills in students with autism.

When merged, the ideas of Hall, Hord, and Magana are complementary in that they frame how individuals think about innovative technology use in education. Current research in technology implementation into professional practice confirms the efficacy of complementary overlap (Alt, 2018; Avidor–Ungar & Forkosh–Baruch, 2018; Iatsyshyn et al., 2020; Konopko et al., 2019; Nelson et al., 2019; Numonjonov, 2020; Powell & Bodur, 2019). With the support of current literature, the combination of these models provides a conceptual framework that innovations, such as technology, require change

but can be effectively implemented in schools when school leaders (or change facilitators) continuously assess participants' motivations and needs after the innovation adoption. Figure 4 provides a summary of the conceptual framework's essential elements.

**Figure 4**

*Summary of Hall and Hord and Magana's Models*

| CBAM (Levels of Use) | CBAM (Stages of Concern) | T3 Framework | Description |
|---|---|---|---|
| Stage 0: Awareness | Level 0: Non-Use | T1: Translational Technology Use<br>T1.1: Automation | Individual lacks knowledge, skills, or shows no interest in the innovation. |
| Stage 1: Informational | Level 1: Orientation | T1.2: Consumption | Individual is aware of the innovation, how to use it, and its significance. |
| Stage 2: Personal | Level 2: Preparation | T2: Transformational Technology Use<br>T2.1: Production | Individual collects information in a number of ways, including by questioning current users, examining printed or digital manuals, and watching others utilizing the innovation. |
| Stage 3: Management/ Stage 4: Consequence | Level 3: Mechanical | T2.2: Contribution | Individuals connect by creating and sharing resources, exchanging ideas, troubleshooting, and problem-solving. |
| Stage 5: Collaboration | Level 4: Routine/ Level 5: Refinement | T3: Transcendent Technology Use<br>T3.1: Inquiry Design | Individual assesses the effectiveness of implementation by collecting and analyzing data; creates opportunities to further improve the implementation of the innovation |
| Stage 6: Refocusing | Level 6: Integration/ Level 7: Renewal | T3.2: Social Entrepreneurship | Innovation becomes completely integrated into the individual's professional practice. |

## Current Research in Special Education Technology Integration

In this section, I illustrated the importance of effective technology integration in special education. I also provided an overview of technology integration at the school level and the barriers to effective technology integration in special education. Finally, I

discussed the impact that ineffective technology integration has on teaching and learning for students with special education needs.

### *The Use of Technology in Special Education*

Educational technology uses digital tools and resources to aid teaching and learning. This includes using computers to provide instructional information with multimedia features such as interactive graphics, videos, animations, simulations, and computer games (Cagitlay et al., 2019). According to Alawajee et al. (2022) and Cagitlay et al. (2019), special educators believe that using educational technologies in their classrooms has a greater impact on their educational advancements and improves job satisfaction. Educational technologies support special educators while teaching social skills and new concepts to students with special needs. At the same time, educational technologies help students transfer knowledge and skills to new contexts.

In special education, digital tools and resources used to support students are called assistive technologies (AT). ATs are mechanical, electronic, computer–based, nonelectronic, or noncomputer–based instructional materials, strategies, or services that individuals with disabilities can use to learn, gain access to resources, develop workplace competence and success, or enhance their quality of life (Rao et al., 2021). The Assistive Technology Act of 1998, reauthorized that year, featured an extension of technology beyond its use for functional educational needs. The expansion guaranteed that students with special education needs had better access to the mainstream curriculum regardless of their educational setting (Gargiulo et al., 2018). Thus, the expansion categorized assistive

technologies into three groups: high–tech, mid–tech, and low–tech (Moreno, 2020). Table 11 provides examples of high–tech, mid–tech, and low–tech assistive technologies.

**Table 11**

*Examples of High–Tech, Mid–Tech, and Low–Tech Assistive Technologies*

| High–tech examples | Mid–tech examples (least common form of technology) | Low–tech examples (most common form of technology) |
|---|---|---|
| ● Augmented reality<br>● Electronic tablets (I.e., iPads, iPods, Kindle, Samsung tablets)<br>● Computers<br>● Chromebooks<br>● Electric wheelchair<br>● Portable word processor<br>● Speech–to–text software and devices<br>● Text–to–speech software and devices<br>● Augmentative and alternative communication (AAC) devices<br>● Smart board | ● Screen magnifier<br>● Wheelchairs<br>● Audiobook<br>● Calculator<br>● Braille translation software<br>● Word prediction software<br>● Adapted seating (i.e., seat cushions, bouncy balls, and chairs with seat belts) | ● Graphic organizers<br>● Visual schedules<br>● Pencil grips<br>● Highlighters<br>● Post–it notes<br>● Adaptive paper (i.e., graphic paper, construction paper, and special spacing)<br>● Adapted pencils<br>● Slanted boards<br>● Manipulatives |

*Note*. Examples of high–tech, mid–tech, and low–tech assistive technologies.

Current technology provides significant opportunities for teaching and learning in special education. For example, augmented reality (AR) technology is high–tech assistive technology. There are several benefits to using AR technology with students with special education needs. First, AR is an emerging technology that can assist students in acquiring knowledge by collaborating with computer–generated entities in the real world. It engages students in a controlled school environment, enables them to visualize physical objects, and enhances realism rather than replacing them (Baragash et al, 2020, 2022; Cakir & Korkmaz, 2019; Tkachuk, 2018). Next, AR technology provides students with a

lifelike experience through 3D hallucinations of various objects, enabling them to visualize things. Using AR as the instructional method, a special educator can demonstrate to students the 3D/4D interpretation of entities instead of the conventional classroom method. Finally, AR technology can assist students in achieving subject awareness and retaining that knowledge through smartphone communication (Baragash et al., 2020; 2022; Geroimenko, 2020; Коломоєць, 2018; Köse & Güner–Yildiz, 2018; Tkachuk et al., 2018).

### *Effective Technology Integration at the School Level*

Effective technology integration is the use of technology tools and resources to help with classroom operations and school management. Technology resources include computers, smartphones, tablets, software applications, digital tools, social media and blogging platforms, and the Internet, etc. According to the International Society for Technology in Education (ISTE) Standards for Educators (2022), educators create, adapt, and personalize learning experiences that support independent learning and accommodate learner diversity and requirements using technology. Thus, effective technology integration occurs when technology is consistent and clear, easily accessible for educators and their students, supports the curriculum's aims, and assists students in efficiently achieving those academic goals. Technology should become an essential facet of classroom operations — as accessible as other teaching resources.

In the classroom, students should be able to select technology tools and devices that help them access information, analyze and synthesize the information, and deliver the knowledge professionally. According to Kojayan et al. (2021), technology has a

positive impact on the academic, social, and emotional development of students. Technology enables accessibility by differentiating the same knowledge, and it has been demonstrated to increase student engagement by exposing them to material through multisensory techniques.

Specifically, technology integration should include the use of ATs for students with special education needs. The need for ATs should be identified and stated in a collaboratively developed Individualized Educational Plan (IEP). The IEP should incorporate technology resources into daily instruction. The selection and reevaluation of ATs should be based on evidence–based practices, such as collecting ongoing assessment data. These technology tools and resources should be implemented to eliminate obstacles to a student's participation and performance (Boot et al., 2018). Students, educators, families, and other support personnel should receive scaffolded mentoring on using technology tools and resources.

However, there is an increasing need to provide special educators with numerous opportunities to gain experience implementing technology in their classrooms. Special educators must comprehend the pedagogical functions of technology integration strategies (Harrell & Bynum, 2019). Factors such as inadequate infrastructure, technology, technological tools, and professional development influence effective technology integration in PK–12 classrooms. In their study about teacher readiness for technological innovations, Bliss and Wanless (2018) noted that the decision to adopt an innovation is frequently made at the leadership or organizational level without input from

teachers and support staff. Moreover, Petko et al. (2018) determined that successful technology integration depends on the school's preparedness, leadership, etc.

Finally, Hodges & Cullens (2020) examined teacher preparedness for technological innovations and its relationship to leadership decisions, such as involving teachers in the innovation's planning and the training provided for the innovation. Findings revealed that involving teachers in the planning of innovative technology initiatives may foster more positive perceptions of the initiative's feasibility, buy–in, and staff support. In addition, training related to new initiatives may result in improved teacher perceptions of staff support for the initiatives.

If special educators are trained to implement technology in their classrooms effectively, they will be in a stronger position to use technology effectively and to encourage student learning. Frequently, educators who are responsible for integrating technology into their curriculum lack technological expertise and are left to devise effective solutions on their own (Harrell & Bynum, 2019). An educator's use of technology integration is positively connected with professional development that is facilitated in the classroom and focused on enhancing student learning. Educators should receive adequate technological support in classroom environments where technology will be utilized. Research findings suggest that educational systems should adopt a technology framework, provide support, and follow up during implementation (Nelson et al., 2019; Ottenbreit–Leftwich, 2018).

## Review of the Broader Problem

The scope of my research explored special educators' experiences with professional development and implementation support to effectively use DSSs to teach appropriate social skills to students with autism. The literature review foundation was a synthesis of peer–reviewed research articles. These peer–reviewed articles focused on professional development, implementation support, and its application to educational topics, such as technology integration and social challenges for students with autism. I also discussed how researchers in the field tried to solve the problem and what their strengths and weaknesses were. I searched Education Source, Academic Search Complete, SAGE, ERIC, Taylor and Francis Online, and Google Scholar for empirical research studies in peer–reviewed journal publications. The following search terms were utilized: *autism spectrum disorder, digital social stories, social skills, technology integration, professional development, implementation support, CBAM, and Magana's T3 Framework.* In addition to empirical research, I examined practitioner journals to gain a deeper grasp of the research topic. The literature I compiled contributed to the research cited in the conceptual framework and review of the broader problem.

### *Autism Presents Social Challenges*

Students with autism demonstrate numerous social challenges, including a lack of empathy, difficulty with social communication, difficulties with joint attention, and impairments in ordinary interactions such as cooperating, assisting, and sharing (Bukowski et al., 2018; Girli & Dogmaz, 2018; Silveira–Zaldivar & Curtis, 2019). Some of the most profound social deficits in students with autism are initiating and responding

to a conversation; changing their routine; understanding how other people may feel or think; and responding appropriately in a social situation. A lack of social skills presents a challenge for students with autism which hinders social interaction with peers and those in their environment. As students with autism reach school age and adulthood, their deficits in social behaviors may become more pronounced, distinctive, and severe (Jordan et al., 2019; Klebanoff, 2018; Lauderdale–Littin & Brennan, 2018).

In addition to social challenges, students with autism experience academic and behavioral challenges. Research showed that social skills are connected to loneliness, behavioral challenges, and academic success (de Stewart et al., 2022; Yazdi–Ugav et al., 2022; Zweers et al., 2021). According to Yazdi–Ugav et al. (2022), students with special education needs scored lower than their peers on academic achievement and scored higher on loneliness due to their inability to interact with others. Burke (2020) revealed that students with autism have social challenges that negatively impact their social experiences and often appear to be behavioral challenges in the inclusive classroom.

Moreover, improving social functionality is one of the most important intervention strategies for students with autism due to the significance of social skills in one's daily life (Hart Bennett, 2018; Tersi and Matsouka, 2020; Watkins et al., 2019). Participation in peer play activities can benefit early elementary students with autism and other developmental difficulties, according to research. In her research, Hart Bennett (2018), revealed that systematic interventions that improve social skills are required for students with disabilities to benefit from the interactions that occur during play and to continue making developmental gains in play skills. Hart Barnett (2018) presented three

intervention strategies to help elementary special educators. Strategies included scripts, video modeling, and choice in classroom activities. These activities provided an atmosphere in which play skills can be developed and utilized in natural settings. Thus, promoting students' engagement in play and increasing the possibility of positive peer interactions.

Furthermore, Tersi and Matsouka (2020) examined the impact of a structured, play–based activity program on the social skill development of preschool–aged children (ages 4–6) during kindergarten recess. Out of the 40 participants, 20 of children were assigned to the control group and the remaining 20 children were assigned to the experimental group, which received a four–week activities intervention (2 days a week). The Preschool and Kindergarten Behavior Scale was used to collect data on the children's social skills (i.e., cooperation, interaction, and independence) and behavior problems (externalizing and internalizing) from their teachers before and after the interventional program. The results indicated that both groups demonstrated significant improvement in the social behaviors investigated (Tersi & Matsouka, 2020).

To conclude, Watkins et al. (2019) assessed whether a bundle of interest–based, structured play activities in which adults taught, modeled, and answered children's questions would lead to more social interactions with peers who were developing normally. A multiple baseline design with a built–in reversal was used with four participants to show how the intervention affected how people talked to each other during structured play sessions. As a result, all participants' initiating, responding, and interactive engagement increased.

### *Impact of Social Difficulties on Inclusive Education*

Failure to recognize social cues or the ability to interact with others (specifically, their peers) can increase social difficulties for students with autism in inclusive education (Qu, 2022; Woodcock & Woolfson, 2019; Van Mieghem, 2020). Social cues include gesturing (i.e., nodding, waving hello, waving goodbye), communicating, sharing, cooperating in groups, engaging verbally or nonverbally, group–based problem–solving, and taking turns with peers. According to Park et al. (2020), a lack of social skills can increase victimization, such as school bullying and isolation (Pellicano et al., 2018) for students with autism.

Overall, the small body of research showed that educators should provide opportunities for students to improve these social skills, which show them how to navigate in their classroom and beyond (Habib et al., 2018; Safi et al., 2021). Thus, providing opportunities for social skill development decreases social difficulties. This includes school bullying, dropout, isolation, behavior infractions, administrative referrals, in–school and out–of–school suspensions, and chronic absentee (Anderson, 2020). According to Anderson (2020), as social demands become more complex over time, females with autism run the risk of developing symptoms and encountering significant difficulties with socialization and communication.

Compared to their peers, students with special needs have fewer friends and less cohesive friendships (de Stewart et al., 2019; Marlina & Kusumastuti, 2019; Wang et al., 2019). Karal and Wolfe (2018) noted that decreasing a student's chance of rejection by their peers positively impacts their overall education experience. Moreover, a study by

Silveira–Zaldivar and Curtis (2019) revealed that typical peers tend to spend time with other typical peers. While a student with autism continues to face some level of isolation.

### *Using Digital Social Stories to Improve Social Skills*

One of the interventions used to improve social skills in students with autism is social stories. Social stories were created to educate and improve the social skills of students with autism (Gray, 2010). Social stories are often told from the reader's perspective, as they are tailored to the intended audience. Social stories include a title, introduction, body, conclusion, and accompanying statements and illustrations.

According to Riga et al. (2020), social stories aid students in acquiring communication skills. The study's findings revealed the positive outcomes of incorporating story–telling methods into the learning and teaching process for students with autism. They often exhibit severe deficits in social and communication skills. social stories have been used successfully to teach social skills to students with autism. There are several reasons why social stories are effective. Social stories are visual, cost–effective, personalized to attract the student's attention, easy to create and apply in the inclusive classroom, and can be used repeatedly with a student (Almutlaq & Martella, 2018; Karal & Wolfe, 2018; Qi, 2018; Riga et al., 2020).

DSSs are a form of narrative storytelling created using various technological instruments. These include video and audio production, interactive software, and computer graphics. DSSs are more convenient for educators to use anytime and anywhere (Almumen & Almuhareb, 2020; Chandra & Aruna, 2021; Li et al., 2021). They are also more engaging for students with autism (Boşnak & Turhan, 2020; Francese, 2021;

Ghanouni, 2019; Hatzenbuhler, 2019; Rai & Bharati, 2018). Safi et al. (2021) investigated the efficacy of DSSs in improving social skills among students with autism. The findings revealed that after receiving the 'treatment,' participants changed their desired behavior. The students responded positively to the intervention on multiple levels.

According to other studies, the efficacy of DSSs as supplementary interventions for students with autism revealed that DSSs effectively reduced inappropriate behavior (Stathopoulou et al., 2020). Chandra and Aruna (2021) investigated using four digitalized social narratives: Wearing masks, hand washing, and dos and don'ts for using social media, such as What's App, to convey required concepts and skills. The findings revealed that thematically organized interventional graphics were used to reveal statistically significant differences in all four critical factors. Chandra and Aruna (2021) believed that DSSs provide opportunities not only for students with autism but all students with special education needs if made available in an accessible format.

***Professional Development***

Special educators require ongoing professional development to effectively work with students with special education needs in the inclusion classroom. Inclusion is the provision of educational opportunities for all students, and its implementation involves an ongoing process of removing barriers to participation (Corral–Granados, 2022; Egert et al., 2018). In recent decades, the significance of high–quality instruction and professional development designed to promote student learning outcomes has increased significantly for teachers in the United States, who face increased pressures from high–stakes testing,

accountability, and the standards movement, while being tasked with the achievement of increasingly diverse student populations (Powell & Bodur, 2019).

According to Hartshorne et al. (2020), special educators could not effectively integrate technology into their educational settings during the COVID–19 pandemic due to a lack of professional development. This impacted their attitudes and beliefs about teaching students with special needs (Avramidis et al., 2019). Thus, professional development plays a crucial role in preparing educators to work with students with special education needs by providing formal instruction combined with individual experiences, facilitating opportunities for firsthand experiences, and teaching best practices for technology integration (Baker, 2018; Brunsek et al., 2020; Egert et al., 2018; Pit–Cate et al., 2018; Rodriguez et al., 2022).

Additionally, professional development must be subject–specific so that the educators gain a deeper understanding of the subject matter, which enriches their teaching practice based on how students learn it. Therefore, the notion of imparting knowledge to educators with the expectation that they will use it in practice is insufficient. For a professional development program to be effective, it must be designed as a process rather than a single episode. It must also provide educators with concrete and practical concepts directly tied to their classroom's daily operations (Patfield et al., 2022; Schachter, 2019). Moreover, Mohamed (2018) found that 428 special education teachers utilized technology positively. However, students need more classroom instruction in computer technology and a more systematic approach to using it efficiently. It is essential to understand professional development's role in a special educator's readiness to

integrate technology and support students with special education needs in the inclusion classroom. During my research, I will consider this component.

To effectively integrate technology into the inclusion classroom and support students with special needs, district and school leaders should ensure that educators receive ongoing professional development and resources. Educators should also receive professional development as innovations are introduced (Steed & Leech, 2021). Moreover, Fraser et al. (2020) discovered that if professional learning is not followed up, it can be unsuccessful since teachers require repeated practice. Fraser et al.'s finding agrees with DeJarnette's study (2018) that teachers' self–efficacy regarding Science, Technology, Engineering, Art, and Mathematics (STEAM) increased because of the workshop, the provided resources, and the demonstration of the STEAM activities. Although DeJarnette's survey results indicated an increase in teacher's confidence and attitudes, teachers revealed during interviews that they still required additional professional development to implement STEAM lessons in their classrooms fully.

### *Implementation Support for Educators*

Implementation support is defined as individuals and organizations engaging with consultants, coaches, technical assistance providers, and others whose primary role is to facilitate the establishment, maintenance, and expansion of research–supported inventions for the benefit of their defined target groups (Albers et al., 2022; Michael et al., 2019). Assisting a teacher with the implementation of an intervention also includes providing implementation clarity, coaching, developing lessons and activities, and modeling how to use the intervention or strategy in their classrooms (Bliss & Wanless,

2018; Dyrstad et al., 2018). In their meta–analysis, Kraft et al. (2018) defined coaching programs as all in–service professional development programs where coaches monitor teachers in the classroom and offer feedback to help them improve their craft. Furthermore, Wolf and Peele (2019) examined coaching effectiveness for 51 teachers who taught kindergarten or elementary school. Findings revealed that professional development programs combined with coaching are more likely to produce long–term results.

Students with severe social challenges, like those observed in students with autism, require additional time to practice a new skill, such as guided play, compared to their typically developing peers (Chen et al., 2020; Hart–Barnett, 2018; Hong et al., 2020; Kuutti et al., 2021; Pursi & Lipponen, 2018; Syrjämäki et al., 2018). Specifically, Syrjämäki et al. (2018) revealed that more emphasis should be placed on facilitating participation, particularly for students with self–regulating issues and severe social challenges. The results suggested that students with special education needs participated in fewer social activities than their peers. Even with this evidence, there is a significant concern that interventions are not executed by teachers who work with students with special education needs (Brodzeller et al., 2018). In their study, McMaster et al. (2020) examined the effects of a professional development system designed to support teachers' use of data–based instruction to improve early writing outcomes for students with intensive needs. Findings revealed that ongoing support for teachers is required to implement interventions effectively. The professional development system and ongoing

support included face–to–face workshops followed by classroom application and coaching to support the implementation.

## Implications

The findings of the qualitative study may inform special educators, district and school leaders, and professional development coordinators about the practices currently in place for using DSSs to teach appropriate social skills to students with autism. The data collected from the project study may increase understanding of any gaps in professional development and support programs. It may also inform professional development coordinators about the need for adequate professional development for special educators. Professional development and implementation support are a way for educators and school leaders to improve their practice, expand their knowledge, and increase student achievement. The project study may impact students, as it may lead to changes in social development. The goal of the project study was that adequate professional development and support may lead to a decrease in behavior referrals for students with autism.

The data collected for this research may lead to two types of projects. A white paper discussing the findings and implications of the data was a potential project. A second project under consideration was developing a new professional development program for special educators to enhance their knowledge of how to use DSSs most effectively to teach appropriate social skills to students with autism.

## Summary

Section 1 of my project study included the study's problem and purpose. The purpose of this study was to explore special educators' experiences with professional development and implementation support in using DSSs with students with autism. The problem addressed through this study was that special educators were not receiving adequate professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. I defined terms related to the study. I also outlined the study's significance for informing adequate professional development and implementation support for special educators to use DSSs effectively.

The two RQs were also itemized in this section, which relates to the study's problem and purpose. The RQs also align with the conceptual framework. The conceptual framework guiding this study are CBAM and the T3 framework. The RQs guiding this study are:

- RQ1: What are the special educators' experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES?
- RQ2: What are the special educators' experiences with implementation support in using DSSs to teach appropriate social skills to students with autism at BHES?

Additionally, the review of the literature focuses on social challenges for students with autism, social difficulties' impact on inclusive education, the use of digital stories to

improve social skills, the importance of effective professional development, and implementation support.

Section 2 presents the methodology, including the qualitative research design and approach, participants, data collection, and study limitations. Data analysis and its results are discussed.

## Section 2: The Methodology

Methodology is defined as a plan for collecting and analyzing information that relates to research inquiry (Egbert & Sanden, 2014). Furthermore, Ravitch and Carl (2016) proposed that a study's methodology should include the research questions, a conceptual framework, and the researcher's epistemology and beliefs. To explore the local problem of elementary special educators' experiences with professional development and implementation support in using DSSs to teach appropriate social skills to students with autism, I used a qualitative methodology. The plan was to gather narrative data that answered the research questions from in–depth interviews of 10–12 purposefully selected special educators. Special educators may include but are not limited to teachers, paraeducators, school counselors, lead special education teachers, occupational therapists, physical therapists, speech and language pathologists, psychologists, and assistive technology specialists in the study district.

### Qualitative Research Design and Approach

This qualitative project study used a basic, qualitative research methodology to explore special educators' experiences with professional development and implementation support using DSSs to teach appropriate social skills to students with autism. Qualitative research is the study of phenomena in their natural environment. The researcher's observations, questionnaires, focus groups, participant observation, field recordings, documents, case studies, and artifacts are all used to gather data for qualitative research (Holstein et al., 2013). Because of the individual researcher's

interpretation and presentation of the data, qualitative research outcomes are descriptive instead of predictive.

Researchers who decide to conduct qualitative research do so because things in their natural environments are studied, with an effort made to make sense of or interpret events in terms of the meaning humans attribute to them (Holstein et al., 2013). Therefore, the basic qualitative design was appropriate for this study. On the other hand, I debated using a case study for this project study. However, case studies incorporate numerous data sources. The research questions for this project study could be answered using a single data collection method (i.e., qualitative interviews). Thus, a case study would not have been appropriate.

## Participants

In this section, I described the criteria for selecting participants, my procedures for gaining access to participants, how I protected participants' rights, including confidentiality, informed consent, and protection from harm, and the methods used to establish a researcher–participant working relationship.

### *Participant Selection*

I had specific criteria for selecting participants in this study. The qualitative project study used a purposeful sampling of special educators from BHES. Ten to 12 special educators who worked directly with students with autism at BHES were asked to participate in the study. They were currently using DSSs to teach appropriate social skills to students with autism. Special educators included four interrelated resource teachers, two paraeducators, a one lead special education teacher, one occupational therapist, one

speech and language pathologist, and two professional development liaisons in the study district. Inclusion criteria for special educators were that they must hold a valid certification in special education, have firsthand knowledge of the use of DSSs to teach appropriate social skills to students with autism, and work directly with students with autism.

The participants were selected from a group of special educators from one of the elementary schools in the local study district. The participant's email address was located in the personnel section of the study district's website. Participants were selected based on whether they currently or formerly used DSSs to teach appropriate social skills to students with autism. The first 10–12 special educators who responded to the email invitation were selected as participants in this study. However, I kept information for three to five additional special educators in case any of the selected participants needed to withdraw from the study.

***Justification for Number of Participants***

According to Patton (2015), data saturation occurs between six and 12 interviews. Thus, 10–12 special educators were appropriate to select in this study. Data saturation would be reached after the first group of six to 10 participants had been interviewed. To ensure that participants met the criteria for participation in this study, they needed to respond to the email invitation and answer the following questions:

1. Do you currently use digital social stories (DSSs) to teach appropriate social skills to students with autism?

2. Did you use digital social stories (DSSs) to teach appropriate social skills to students with autism last year?

To conclude, participants needed to have experience within the school setting using DSSs to teach appropriate social skills to students with autism.

### *Procedures for Gaining Access to Participants*

To gain access to participants, I followed the Institutional Review Board (IRB) process at Walden University. According to the Walden IRB, when a researcher is interviewing professionals such as teachers, seeking permission from the school district is not required. Their email addresses are publicly displayed on the Internet. Thus, email addresses can be pulled from school websites, and the professionals can be contacted to complete the interview (Walden IRB, personal communication, December 5, 2022). Once I got approval to interview participants from Walden University's IRB, I began to email them. Participants were selected from BHES, one of –the study district's elementary schools.

### *Establishing a Researcher–Participant Working Relationship*

After retrieving the email addresses of all special educators at BHES from the school website, I established a researcher–participant working relationship. Several methods were used to accomplish this goal. First, I sent the participants an introductory email (see Appendix D) using my Walden email account. In the introductory email, I introduced myself as the researcher, explained the purpose of the project study and their role in the project study, and included one to two demographic questions that allowed me to verify that they met the selection criteria.

Next, if participants met the selection criteria, they consented to participate in the interview. Once consent was received, participants advanced to the interview stage of the project study. In the follow–up email, I explained the process for the qualitative interviews, which were conducted via Zoom. In addition, I discussed their rights as a participant in the study, such as the right to withdraw from the study without any consequences. Thus, I established a researcher–participant working relationship.

Additionally, I established a researcher–participant working relationship when I collected data during the qualitative interviews. I used interviewing techniques, which are the procedures followed before, during, and after an interview, to ensure success. Interviewing is an art form of having a one–on–one conversation between myself and the participant. This requires the researcher or interviewer to build a degree of rapport and trust, using questions that elicit information from the participant and engage them.

To conduct an effective interview, I used best practices, such as contacting and informing the interviewee about the progress of the interview, creating a welcoming setting, using a neutral tone, and asking open–ended questions. It was also important to elicit appropriate body language during the Zoom interview. According to Ravitch and Carl (2021), verbal and nonverbal cues might have unforeseen consequences on the interviewee when given to them. Body language provides the interviewer with a significant variety of information that cannot be delivered only through spoken words.

Finally, once data collection was completed, I finally offered member checking. In qualitative research, member checking is a technique used to examine the credibility of the results. According to Candela (2019), member checking should be more than a

technique for maintaining validity, and researchers should include the experiences of participants, including how member checking could be used as a reflective experience. Thus, participants provided feedback regarding whether the findings are applicable in their environment. Participants also examined if there were inaccuracies or misrepresentations of the data they provided for the study.

### *Protection of Participants' Rights*

Several measures were taken to protect the rights of participants, including confidentiality, informed consent, and protection from harm. To ensure appropriate measures were in place to protect the rights of participants, I ensured that participants were aware of their confidentiality throughout the study. When reporting the data analysis findings, a pseudonym was created for each participant and the study site. I created a system that is only decipherable by me. The data, including interview recordings and transcripts, was encrypted and stored on a password–protected computer in my home.

The participants also received an informed consent that outlined their rights, such as withdrawing from the study at any time without consequences, and the risks and benefits of participating in the study. I explained to participants that the experienced fatigue or stress during the virtual interviews, which are minor discomforts often experienced in life. I did not offer reimbursement for participating in this study. However, I anticipated the special educators' willingness to contribute to expanding knowledge about professional development and implementation support and its impact on

effectively using DSSs with students with autism. It could also inform school and district leaders about the possible modification of professional development programs.

Finally, psychological harm occurred in this study if participants were misled or deceived during any part of my study. Therefore, I communicated to participants the participation process. I communicated to participants how data was collected using virtual, one–on–one recorded interviews. Interviews were then transcribed, and I requested that they verify the accuracy and include commentary on the transcriptions.

## Data Collection

As suggested by Rubin and Rubin (2012), Thomas (2013), and Yin (2015), the current study's interview protocol consisted of semi structured interview questions (see Appendix E). The questions were open ended so that participants could respond according to their frames of reference (Burkholder et al., 2016; Ravitch & Carl, 2016). I also added follow–up questions that encouraged interviewees to elaborate on their responses (Yin, 2016).

In addition, I linked the interview protocol with the study's conceptual framework. This helped me determine how the CBAM and T3 framework support the special educator's need for adequate professional development support in using DSSs to teach appropriate social skills to students with autism. Table 12 displays the alignment between the research questions and interview questions. Table 13 shows the connection between the interview questions and the constructs from the two models in the framework.

**Table 12**

*Interview Protocol: Alignment Between Research Questions and Interview Questions*

| Research questions | Interview questions |
|---|---|
| RQ1: What are the elementary special educators' experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES? | 11, 12, 13, 14, 15, 16, 17, 18 |
| RQ2: What are the elementary special educators' experiences with implementation support to teach appropriate social skills to students with autism at BHES? | 19, 20, 21, 22, 23, 24, 25 |

**Table 13**

*Connection Between the Interview Questions and the Conceptual Frameworks*

| CBAM | Interview questions | T3 framework | Interview questions |
|---|---|---|---|
| Stages of concern (reaction to innovation) | 11, 15, 16, 17, 19, 23, 24 | T1: Translational technology use (explains the use of technology to automate classroom procedures and direct students' media consumption) | 8 |
| Levels of use (use of an innovation) | 12, 20, 21 | T2: Transformational technology use (beyond translation, students use technology for production and contribution) | 9 |
| Innovation configurations (picture of an innovation) | 13, 14, 18, 22, 25 | T3: Transcendent technology use (explains the usage of technology for innovation and social entrepreneurship) | 10 |

## Data Collection Instruments

This study used an interview protocol, semi structured interview questions (see Appendix E), and interviewee recordings. As Rubin and Rubin (2012) proposed, I asked

questions to gather further information about the research topic. The interview questions aligned with the study's research questions and conceptual framework. The levels of use and stages of concern from the CBAM focused on participants' behavior and attitudes about the change process. The T3 framework (Magana, 2017, 2018) was combined with the CBAM to provide a framework for interview questions and data gathering.

I asked the participants to select an interview time after their consent. I also informed participants that they were recorded as soon as the interview started and told that they could opt out anytime. My home office is the repository for all interview recordings, notes produced during interviews, and transcribed interviews. These materials were arranged to utilize word processing software (i.e., Microsoft Word) and digital spreadsheets (i.e., Microsoft Excel). To protect the data and guarantee the participants' privacy, access to all data collection instruments and sources were protected by a password.

**Interviews**

Qualitative interviews were used to collect data for this project study from the sample of certified special educators. During the interviewing process, I used responsive interviewing techniques to collect specific information from interviewees who possessed relevant expertise and could supply additional details in response to the research questions (Rubin & Rubin, 2012). Moreover, semi structured interviews were recorded using a password–protected communication platform. Each participant's interview lasted 30–45 minutes. An interview protocol was created, and participants were questioned

using predefined, semi structured interview questions (see Appendix E) following the recommendations made by Jacob and Furgeson (2012).

Within a week, interviews were transcribed using Microsoft Office 365. The transcriptions were kept on my computer at home in a password–protected folder. Once organized in a folder, I reviewed each transcription while simultaneously listening to the audio to verify quality and accuracy and correct any inconsistencies.

Finally, interviewing was a justified way of collecting data for this project study. It allowed special educators to share their experiences about professional development and implementation support using DSSs to teach appropriate social skills to students with autism at BHES. Interviewing allowed me to address the research questions regarding professional development and implementation support needed to effectively use DSSs to teach appropriate social skills to students with autism.

**The Role of the Researcher**

The researcher's role is to try to gain access to the thoughts and emotions of those who are participating in a study (Ravitch & Carl, 2016). This is challenging work because it includes getting individuals to speak about topics that may be extremely personal. Being able to recognize my own contribution to the study is what reflexivity is all about. A qualitative researcher is an active participant in the research process, which will be influenced by the researcher's past experiences, assumptions, and beliefs.

Reflexivity is a critical tool for embracing and addressing subjectivities (Ravitch & Carl, 2021). This research process has shaped my reflexivity and allowed me to understand my role as a researcher completely. At the same time, as the interviewer, I am

responsible for establishing rapport and trust with the participant by asking questions that elicit information and engage them. In contrast to informal conversations, qualitative interviews are intended to generate comprehensive responses to research questions (Rubin & Rubin, 2012).

Finally, this research process helped me gain a better understanding of my research topic and how it can promote positive social change. This study has the potential to promote positive social change by providing school and district leaders with the experiences of special educators to develop ongoing professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

**Researcher Biases in the Data Collection Process**

In qualitative research, researcher bias is frequently present in the methods, methodology, data collecting, and data gathering processes (Fusch et al., 2018; Johnson et al., 2020; Ravitch & Carl, 2016; Shenton, 2004; Yin, 2016). According to Fusch et al. 92018), qualitative methods are employed to examine social development, yet qualitative researchers need help with objectivity, veracity, and validity. Yin (2016) noted that completely removing bias and mastering neutrality in qualitative research is impossible. To build validity in my study, I acknowledged my bias and created a plan to mitigate bias (Fusch et al., 2018; Peterson, 2019; Shenton, 2004; Yin, 2016).

Possible ethical issues that could arise during the data collection process were work history, preexisting personal biases, opinions, and conflicts of interest (Lambert, 2012). Similar contextual experiences with participants, according to Lambert (2012) and

Johnson et al. (2020), could assist researchers in "fitting in" to their studies. For seven years, I worked as a middle school English teacher for the study district where the research will be conducted.

During my tenure as a middle school teacher for the study district, I encountered several occasions where administrators asked me to implement an instructional strategy or digital tool to increase teaching and learning in my classroom. Without adequate professional development and implementation support, I usually failed to effectively implement the instructional strategy or digital tool into my instruction. I often requested additional implementation support but never received it.

As a result, I observed a decline in student achievement, especially with my students with special education needs. I started researching teaching methods relevant to technology integration for ration for students with special education needs. I also joined educator groups on social media to receive the support I needed.

Based on this research, I began to think about other educators' experiences with professional development and implementation support in the study district. Fortunately, this project study was not executed in my workplace. I no longer work for the study district. I resigned in February 2021. I do not know any of the educators at BHES, nor do I plan to interview former colleagues. Currently, I am an Instructional Coach for another professional organization. Therefore, ethical issues relating to conflicts of interest did not arise. Researcher bias was low in this study.

## Data Analysis

Saldaña (2016) stated that the inductive process of progressing from coded units to larger representations, such as categories and themes, necessitates a concentrated effort in abstraction. This process includes categorizing and differentiating. Both a scientific method and delicate art, the process necessitates thoroughly examining each code without losing sight of the larger context. Thus, themes emerge from this place. As the process of data analysis includes the following six steps: (a) transcribing and summarizing the interviews, (b) coding excerpts within interviews based on relevant concepts, (c) coding across interviews, sorting and comparing the codes, (d) integrating the various interviews to create a more comprehensive view of the data, (e) combining concepts and themes to generate theory, and (f) transferring the results (Rubin & Rubin, 2012). For this study, I used all five phases in this data analysis process.

### Preparation for Data Analysis

To complete this basic qualitative study, semi structured interviews were conducted, analyzed, and coded to identify emerging codes among special educators regarding their experiences with professional development and implementation support using DSSs to teach each appropriate social skills to students with autism at BHES. To prepare the data for analysis, I used Microsoft Office 365, to transcribe the interviews within two to three days of the interview. I verified that the transcriptions are accurate by listening to the audio and reading the transcriptions. Listening to the audio recordings happened in smaller chunks so I did not get overwhelmed. This process helped me better understand the participants' experiences.

## Analysis of Interview Data

Saldaña (2016) noted that the first coding cycle begins with a single word and ends with a complete sentence, while the second coding cycle begins with extended passages or a reconstruction. Data analysis included two coding cycles with the data collected from the qualitative interviews in this project study. I used in vivo coding as the first coding cycle, where codes were taken directly from what the participant says and placed in quotation marks (Saldaña, 2021). This enabled codes to represent the participants' thoughts and activities and provided the researcher with comprehensive knowledge of the direct narratives, concepts, and meanings presented by study participants. The first cycle of coding took place within one week of the interviews being transcribed.

Saldaña (2021) stated that depending on the researcher's academic field, ontological and epistemological orientations, theoretical and conceptual frameworks, and even the choice of coding, certain codes may result in more emotive interpretations of the data. The second coding cycle took place once all the interviews and transcriptions are finished. I used axial coding as the second cycle of coding. Axial coding requires coding all the data taken from the first coding cycle to establish broad categories, concepts, and themes (Saldana, 2016). Codes formulated from both coding cycles were entered into a digital spreadsheet via Microsoft Excel.

## Evidence of Quality

In this project study, evidence of quality and procedures were placed to assure accuracy and credibility. Credibility, transferability, dependability, and confirmation are

the four basic factors for assessing trustworthiness (Saldana, 2016). This section addresses how the study will meet credibility, transferability, dependability, and confirmability requirements.

First, the overall quality of a study was based on how confident researchers are in its data, how it is interpreted, and how it was done. The level of confidence that researchers have in a study's data, its interpretation, and the procedures employed to conduct the investigation are all key factors in determining the study's overall quality. According to Ravitch and Carl (2021), the capacity to capture the experiences and insights of the participants establishes credibility. This is because it has the potential to ignite the interest of the readers. The conclusions of the collected data may be applied to a bigger population. My research findings ensured that the data can be transferred between different populations.

Additionally, extensive descriptions and maximum variance contribute to transferability (Merriam & Grenier, 2019). To ensure transferability, it is essential to describe how the project study will be conducted, including the selection of participants, data collection methods, time constraints, and limitations.

Next, dependability is necessary to ensure that the study's quality can be duplicated and produce the same results as the first time (Ravitch & Carl, 2016). A researcher can prove validity by developing an impartial interview guide (Patton, 2015). It is necessary to collect reliable data to confirm the study's conclusions. This study used semi structured interviews with follow–up questions. The semi structured interview

questions (see Appendix E) related to the research topics to collect detailed descriptive data.

Lastly, confirmability ensures that the data collected corresponds with the researcher's goals (Ravitch & Carl, 2016). I maintained objectivity while transcribing and analyzing the data to prove confirmability. I transcribed the interviews so that the special educators' perceptions were accurate. The overarching themes that emerged from all the data collected revolved around the special educators' experiences with professional development and implementation support in using DSSs to teach appropriate social skills to students with autism at BHES.

**Procedures for Dealing With Discrepant Cases**

Discrepant data was included in the analysis to ensure no biases were reported. This occurred by reporting the discrepant cases in the findings so that the research was more thorough and covered a wider range of topics. Different data may also change the patterns seen in the data (Bashir et al., 2008). Finally, participants expressed whether their specific points of view were reflected in the data, which occurred during member checking. During my introductory email (see Appendix D), participants asked to follow up for 10 minutes to review interview transcripts for accuracy. An email was an option for member checking.

## Limitations

Qualitative research involves acquiring substantial descriptive data (Ravitch & Carl, 2016; Yin, 2016). However, a qualitative methodology identifies certain limitations, such as the small number of participants and study sites in the present study. The limited

scope of this research may prevent theoretical saturation or duplication of the research procedure (Carminati, 2018). The qualitative methodology may prevent the generalization of the current study's findings (Carminati, 2018; Ravitch & Carl, 2016; Yin, 2016).

The only data source for this study was self–reported information, personal recollections, and participant opinions shared during virtual interviews. According to Yin (2016), interview data may provide an inadequate picture of the investigated phenomenon and participants may misinterpret interview questions. Participants in the current study may not recall or report relevant events, and their experiences with professional development and implementation support experiences may need to be more accurately recorded.

This study was limited to one elementary school within a single urban school district in the southeastern United States. Thus, locating enough participants in the study district posed a potential limitation. I found more than the minimum number of participants. This problem was solved without affecting the data collection process. The study was also limited to elementary special educators. Consequently, the results of the findings do not support secondary special educators.

Finally, one challenge was that I have collaborated with special educators before. When conducting qualitative research, it is a widespread practice to do so in a way that actively involves the researcher in the overall process. It is considered acceptable research practice to acknowledge the existence of the researcher's preexisting values, experiences, and biases rather than attempt to control them (Ortlipp, 2008).

## Data Analysis Results

Eleven special educators, including four interrelated resource teachers (IRTs), two paraeducators (PARAs), one speech–language pathologist (SLP), one pediatric occupational therapist (OT), one lead teacher of special education (LTSE), and two professional development liaisons (PDLs), were interviewed in their private home or classroom (See Tale 14, first column). Out of the 11 special educators, ten were females and one was a male. I interviewed the special educators using Zoom from January 18, 2023, to February 3, 2023. Interviews ranged from 21:59 minutes to 33:43 minutes, with an average of 25.55. Participants' experience in special education within the district ranged from 4 – 22 years. Demographics are shown in Table 14.

**Table 14**

*Participant Demographics of Experience, Gender, and Current Position*

| Participant pseudonym | Current position | Gender | Experiences in years in the district | Teaching certifications/professional licenses |
|---|---|---|---|---|
| SLP | Speech—language pathologist | Female | 7 | P—12 Speech & Language Pathology |
| IRT1 | Interrelated resource teacher/K–5 special education department chair | Female | 13 | P—12 Special Education Deaf Education Consultative<br>P—12 Special Education General Curriculum Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level<br>P—5, 4—8 Special Education Science Cognitive Level<br>P—5, 4—8 Special Education Math Cognitive Level |
| IRT2 | K–2 interrelated resource teacher | Female | 7 | P—12 Special Education General Curriculum Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level<br>P—5, 4—8 Special Education Science Cognitive Level<br>P—5, 4—8 Special Education Math Cognitive Level |
| PDL1 | Professional development liaison | Female | 22 | Teacher Support Specialist ESOL Endorsement<br>P—12 Special Education General Curriculum Consultative<br>P—12 Special Education Learning Disabilities Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level |
| IRT3 | Grade 4 interrelated resource teacher | Female | 6 | P—12 Special Education General Curriculum Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level |

| Participant pseudonym | Current position | Gender | Experiences in years in the district | Teaching certifications/professional licenses |
|---|---|---|---|---|
| | | | | P—5, 4—8 Special Education Social Science Cognitive Level |
| PARA1 | Kindergarten paraeducator | Female | 4 | Paraprofessional Educator (Associate's degree or equivalent) |
| PARA2 | MOID paraeducator | Female | 15 | Paraprofessional Educator (Master's degree) |
| IRT4 | Grades 1—3 interrelated resource teacher | Male | 8 | Reading Endorsement<br>P—12 Special Education Adaptive Curriculum Consultative<br>P—12 Special Education General Curriculum Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level |
| PDL2 | Professional development liaison | Female | 4 | P—12 Special Education Adaptive Curriculum Consultative<br>P—12 Special Education General Curriculum Consultative<br>P—5, 4—8 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level |
| OT | Occupational therapist | Female | 15 | P—12 Occupational Therapy |
| LTSE | Lead teacher for special education | Female | 8 | Educational Leadership Tier II<br>6—12 English<br>P—12 Special Education Adaptive Curriculum Consultative<br>P—12 Special Education General Curriculum Consultative<br>P—5, 4—8, 6—12 Special Education Language Arts Cognitive Level<br>P—5, 4—8 Special Education Reading Cognitive Level<br>P—5, 4—8 Special Education Social Science Cognitive Level |

To prepare for data analysis, I used Microsoft Office 365 to transcribe and listened to each interview recording multiple times to ensure accuracy. This process

included making changes, additions, and deleting items that needed to be transcribed accurately. I listened to the interview recordings for a final time to ensure all changes, additions, and deletions matched the transcriptions. After transcribing the interviews, I used an Excel spreadsheet to create my code book. Saldana (2021) defined a code book as a compilation of codes, including text excerpts or data examples for reference. It allowed me to organize and reorganize the codes into categories, subcategories, and themes. Immediately after completing each interview, I simultaneously started coding by collecting and formatting the data and jotting down preliminary words or phrases for codes into my code book.

For the first cycle of coding, I used in vivo coding. Each participant was assigned a pseudonym and had their own sheet in my codebook. I copied and pasted each participant's text excerpts onto their sheet. Next, I labeled the participant code with the assigned pseudonym (i.e., LTSE, SLP, IRT1, etc.). I numerically organized participants' text excerpts starting at 1:00 minutes. Each participant's sheet also included the first coding cycle: open with initial coding with processing codes and in vivo coding, codifying, and second coding cycle. I used axial coding and my interview memos to prepare for the second coding cycle. Specifically, emphasizing the participant's tone allowed me to see connections between interviews and themes began to emerge. Finally, each tab was color–coded based on the axial codes. This allowed me to see the frequency of emergent themes.

**Data Analysis**

Data analysis was completed as determined in my proposal. The first coding cycle was completed using in vivo coding as described by Saldana (2021). I referenced my code book to ensure that coding was consistent among the participants. Additionally, I used my interview memos to record initial thoughts, emerging themes, and questions as I participant's in vivo codes. I reviewed my codebook with my committee chairperson to ensure that code identification was consistent, and the emergent themes were accurate. My committee chairperson discovered no inconsistencies in the in vivo codes and determined that the axial codes were accurate based on the data.

According to Bashir et al. (2008), data that does not agree with the emergent themes or discrepant data were also analyzed to determine if any themes should be modified. I only identified discrepant data during the second coding cycle. Some text excerpts were coded as lack of implementation support, lack of school–based support, or lack of district support. After further analyzing the transcription, I determined that when most of the special educators expressed their concerns about the lack of implementation support, it was either relating to their school or the district. Thus, I used this data to formulate the two themes – lack of school–based support and lack of district support.

Moreover, I sent the results to the participants for member checking once the data analysis was completed. This allowed participants to check for accuracy and provide additional information they wanted to share. They also verified that the conclusion matched the intent of their interviews. I emailed a summary along with the transcriptions to the participants. Finally, the categories and themes identified in data analysis from the

interviews were aligned with the literature review completed in Section 2. The frequency and percentages for interviews in the first coding cycle (using in vivo coding) are shown in Table 15. It is also aligned with the conceptual framework.

**Table 15**

*In Vivo Codes' Frequency and Percentages for Interviews*

| In vivo code | Frequency | Percentage |
|---|---|---|
| No professional development | 108 | 24.1% |
| Lack of implementation support | 72 | 16.1% |
| Unpreparedness to use DSSs | 65 | 14.5% |
| DSSs are not required | 10 | 2.2% |
| Lack of district support | 20 | 4.5% |
| Short–staffed | 55 | 12.3% |
| Limited tools and resources | 118 | 26.3% |
| Total | 448 | 100% |

**Emergent Themes**

Table 16 shows the axial codes from the second coding cycle, which are derived from the in vivo codes. Five emergent themes were identified among the in vivo codes, such as a lack of professional development, lack of school–based support, lack of district support, limited digital tools and resources, and unpreparedness to use DSSs. Two conflicting themes emerged among the in vivo codes: lack of professional development and being unprepared to use DSSs. Based on the content of the interviews, it can be determined that special educators were unprepared to use DSSs due to a lack of professional development. The data represented the lack of professional development

offered within the schools, not the district at large. Therefore, the themes are not conflicting.

**Table 16**

*Emergent Themes for Second Coding Cycle*

| In vivo categories | Emergent themes |
|---|---|
| Lack of professional development | Lack of professional development |
| | Non–existent |
| | Lack of instructional PDs |
| | Instructional strategies |
| | Pay for own training |
| Lack of school–wide support | Lack of implementation support |
| | Behavioral issues addressed |
| | LTSE is unavailable |
| | LTSE is assigned to multiple schools |
| | Short–staffed |
| | Lack of district support |
| | Lack of school–based support |
| Lack of district support | Lack of implementation support |
| | Behavioral issues addressed |
| | LTSE is unavailable |
| | LTSE is assigned to multiple schools |
| | Short–staffed |
| | Lack of district support |
| | Lack of school–based support |
| Lack of digital tools and resources | Limited |
| | Unavailable |
| | Lack of school–based support |
| | Lack of district support |
| | Lack of funding |
| | Limited digital tools and resources |
| | Digital divide |
| | Unpreparedness in using DSSs |
| Unpreparedness to use DSSs | Lack of understanding |
| | Lack of professional development |
| | Lack of district support |
| | Limited digital tools and resources |
| | Time–management |
| | Unpreparedness in using DSSs |
| | Improves social skills development |
| | Students with autism |

Table 17 shows the frequency and percentages of each emergent theme during the second coding cycle.

**Table 17**

*Emergent Themes' Frequency and Percentage for Second Coding Cycle*

| Emergent theme | Frequency | Percentage |
|---|---|---|
| Lack of professional development | 18 | 32.7% |
| Lack of school–wide support | 12 | 21.8% |
| Lack of district support | 5 | 9.1% |
| Limited digital tools and resources | 10 | 18.2% |
| Unpreparedness to use DSSs | 10 | 18.2% |
| Total | 55 | 100% |

### *Lack of Professional Development*

The most frequent theme that emerged during coding was a lack of professional development. This theme was represented across 2 of the 5 in vivo codes as shown in Table 16. As shown in Table 17, this theme was identified 18 times and represented 32.7% of the second coding cycle code. Six out of the eight participants work directly with students with autism, including the four interrelated resource teachers, two paraeducators, one speech–language pathologist, and one occupational therapist, have not received any professional development in using DSSs to teach appropriate social skills to their students. For example, the occupational therapist indicated that she researched online training programs that focused on teaching educators how to effectively use DSSs. After conducting her research, she purchased the online course, which was self–paced

and lasted for about five weeks. She affirmed, “Even though I had to pay for my own training, it was greatly beneficial for my students with autism as they struggle to exhibit appropriate social skills. This training program also showed me how to create engaging digital social stories. Thus, I have seen the positive impact that it has had on my students.”

In addition, IRT1 indicated that she has never received professional development on using DSSs in the six years that she has been employed with the district. Despite not receiving professional development on using DSSs with her school or the district, she continues to use DSSs to teach appropriate social skills to her students with autism. IRT2 and IRT4 both indicated the same. All the interrelated resource teachers noted, excluding IRT3, that they learned about the use of DSSs to teach appropriate social skills to not only students with autism but all students with special needs during the graduate programs. IRT4 indicated,

> I learned about the use of DSSs with students with autism in my master's course; it was a mandatory instructional strategy that had to be used during practicums and student teaching. My college professor and student teaching supervisor always visited my classes to observe my use of DSSs and provide immediate feedback. Her feedback allowed me to improve my craft. So, no, the district did not ensure I was prepared to use DSSs. It is not even promoted in our district. Yet, it is so vital!

Similarly, Cooc (2019) explored teaching students with special needs and the need for professional development. Findings showed that teachers in classrooms with a

high proportion of students with special needs are likely to have the fewest credentials and the highest need for professional development. The lack of special education–qualified instructors and the existing professional development demands of teachers have policy consequences for the education of children with disabilities.

On the other hand, both professional development liaisons, PDL1 and PDL2, indicated that district professional development is available to special educators, but there is a process that must be followed. The process includes the LTSE providing school–wide professional development first on the topic, such as DSSs. If the district needs further support, the LTSE must request district professional development by completing the appropriate form. The PDLs reported that district professional development is available in using DSSs, but it is on an as–needed basis. They also reported that they are short–staffed in the Central Office as well and are being assigned to support multiple schools. The LTSE corroborated this when she stated that technically she is assigned to support two elementary schools, but due to staff shortage, has been assigned to multiple elementary schools. All eleven participants in their interviews discussed the lack of professional development at the school and district levels. Specifically, the LTSE stated,

> The district has not provided professional development on using digital social stories. But more of the use of digital social stories comes in a lot of times through our SLPs or occupational therapists. At my assigned schools, they provide training and guidance on how to implement digital social stories in the classroom. The SLP has been instrumental in creating digital social stories for my teachers and students. I want to provide more training for teachers because using

> digital stories is impacting our students, but the challenge is that I am spread thin and have many hats to wear.

According to Mason–Williams et al. (2020), there are decreasing enrollments in teacher preparation programs, which has recently reduced the number of newly minted and fully credentialed special educators. Even in states with expanding enrollments (and hence supply) and no general special teacher shortage, schools are unable to recruit fully qualified and credentialed teachers to specific locations or schools within states. For instance, schools in remote rural areas are unlikely to benefit from an oversupply in suburban districts (Sindelar et al., 2018), and it is well–known that prevalent poverty, highly diverse, and low–achieving schools have difficulty recruiting and retaining fully qualified special education teachers (Goldhaber, Quince, & Theobald, 2018).

The LTSE noted the shortage of special education teachers and other LTSE vacancies, which has negatively impacted professional development programs in schools. Finally, SLP mused,

> Schools should ask special educators, including speech language pathologists, what professional development is needed to support their students. I never receive PD that benefits the students; it is always focusing on special education's clerical aspect, such as correctly writing IEPs. I have expressed these concerns to my supervisor, but the challenges have not been resolved. The district needs to provide more PDs to special educators that support the SEL (social emotional learning) needs of our students, especially those with autism and other special needs.

***Lack of School–Wide Support***

The second theme that emerged during coding was 'lack of school–wide support.' This theme was represented across 4 of the 5 in vivo codes as shown in Table 16. As shown in Table 17, this theme was identified 12 times and represented 21.8% of the second coding cycle code. Several participants noted that there is a lack of school–wide support. At the school level, the IRTs and PARAs report to the LTSE if additional support is needed, such as tools and resources, implementation support, feedback, etc. In the school district, LTSEs are responsible for providing instructional and clerical support to IRTS and PARAs in the special education department. However, this school year, the teachers shared that their LTSE is often unavailable to provide the support. For example, IRT1 shared, "The LTSE comes into the classroom to provide implementation support. But implementation support in using DSSs have not been provided." In addition, IRT2 said, "No one on my school's leadership team provides implementation support when needed. Usually, I must seek support from my co–teacher who has been teaching longer than me. To request implementation support, we typically email our LTSE, but he is only in the school twice a week. This year, he has been assigned to two schools."

Furthermore, administrative support plays a major influence in decreasing stress, contentment, commitment, and intention to remain in the educational field. Teachers with greater administrative support are less stressed, more contented, more committed, and more likely to remain in the profession. Significant determinants of stress, contentment, and school dedication also include years of experience and spectrum of disabilities (Aldosiry, 2020). In their study, Hester, Bridges, and Rollins (2020), explored special

education teachers' stress and attrition. Results suggested that special educators did not feel supported by their administrators and that their employment negatively impacted their overall quality of life, thereby contributing to burnout. Similarly, Carver–Thomas and Darling–Hammond's (2019) study revealed several factors, such as a lack of administrative support, teacher compensation, and alternative certification, relate to greater turnover rates.

### *Lack of District Support*

The third theme that emerged during coding was 'lack of district support.' This theme was represented across 3 of the 5 in vivo codes as shown in Table 16. As shown in Table 17, this theme was identified 5 times and represented 9.1% of the second coding cycle code. In their study, Margot and Kettler (2021) explored teacher's perception of STEM integration in technology. Findings showed that collaboration with colleagues, quality curriculum, district support, prior experiences, and effective professional development were identified by teachers as factors that would help implement STEM education.

This is like the participants' responses in the study. Many of the special educators reported that with district support, implementing DSSs would be a smoother process. OT mentioned, "No one provided implementation support because all the training I received, I purchased independently." However, PDL1 indicated that she facilitates professional development on using DSSs often, but often cannot provide the additional support needed. Like the shortage of LTSEs in the district, there are only three PDLs. Each PDL is assigned to multiple schools, and it often becomes difficult to support all their assigned

schools. PDL2 corroborated this situation as she is assigned to multiple schools, but her focus is supporting special educators who teach students with intellectual disabilities. She shared that she has only facilitated two PDs this school year on using DSSs because the school's LTSE or individual teacher requested it. Most of the PDs that she facilitates are content based. Her primary responsibility is to ensure that students, include those with intellectual disabilities are prepared to take the state–mandated test, which is The Georgia Milestones. PDL2 shared her perspective on the use of DSSs and limited support in the district,

> The use of DSSs is not a district initiative, because some ID [intellectual disability] students just do not need that social piece. The district is not going to roll it out just for a handful of students and teachers. It is just something you should already have in your pedagogy or teaching pedagogy, especially if you are a teacher in the ID classroom. My only challenge is teachers do not ask for support. It would be another thing for them to do with their plate being so full. Usually, the teachers will get on board. The other issue is trying to explain to administration why we do things like this (DSS) and why the teacher must use digital social stories and not go back to instruction.

PDL2 further shared that she often provides tools and resources to support instruction in the moderate intellectual disability (MOID) curriculum.

***Limited Digital Tools and Resources***

The fourth theme that emerged during coding was limited digital tools and resources. This theme was represented across 2 of the 5 in vivo codes, as shown in Table

16. As shown in Table 17, this theme was identified ten times and represented 18.2% of the second coding cycle code. Several tools and resources were noted during the coding cycle. However, most of the participants shared that their school or district does not provide tools and resources relating to using DSSs to teach appropriate social skills to students with autism. PARA2, which is the MOID paraeducator shared that she and the lead teacher in her classroom uses DSSs with their students at least 3–4 times a week. It helps support their functional, social, and emotional development. Due to the student's intellectual disabilities, they use low technology tools and resources, such as the promethean board and News to You, which is a program offered by the district. PARA2 specifically shared,

> We use DSSs with the children that we serve, which are moderately intellectually delayed (MOID). It is called News to You, and it is something that we do every day. News To You is a platform that is used for educators with lower primary grades, which constitutes as preschool all the way up to second grade and what it is, is that something that happens in the world today. They break it down into a digital social story that you can use on our smart board. There is reading material and pictures that support the program. Our ID students love it!

Other than that, no other digital tools and resources are provided by the district. However, PDL2 corroborated this situation by sharing her perspective on limited digital tools and resources in the district,

> We do not have a specific program that the district pays for focusing on the use of DSSs. There are resources we found on the Internet for free or purchase to

> support teachers. A few of us will purchase things out of our pocket, such as resources from Teachers Pay Teachers (TpT), or even create DSSs using Google Slides. The district has a couple of programs that teachers can use to create their own DSSs, such as Board Maker, Lesson Pics, and News to You. These are all free programs that the district provides.

Both SLP and OT reported that the district has not provided any digital tools or resources to support their use of DSSs. The SLP said,

> Other than an iPad or Chromebook, the district/school has not provided tools and resources in preparing to use DSSs to teach appropriate social skills to students with autism. I have used my own funding to purchase apps or programs that create DSSs because it can be time–consuming to make for individual students. Some apps with generic DSSs focus on helping students with social development, such as walking in line appropriately, keeping your mouth, hands, and feet to yourself (i.e., spitting, biting, hitting, punching, etc.), and much more. Since I serve elementary school students, I often have to provide support in these areas.

While OT reported, "My school did not provide tools and resources during professional development in preparing to use DSSs to teach appropriate social skills to students with autism." Additionally, the classroom teachers, including IRT1, IRT2, IRT4, and PARA1 shared that the district has not provided digital tools and resources for using DSSs to teach appropriate social skills to students with autism.

***Unpreparedness to use DSSs***

The fifth theme that emerged during coding was 'unpreparedness to use DSSs.' This theme was represented across 2 of the 5 in vivo codes as shown in Table 16. As shown in Table 17, this theme was identified 10 times and represented 18.2% of the second coding cycle code. Within the in vivo code, 'limited use of DSSs,' the code 'unpreparedness to use DSSs' emerged during the second coding cycle. SLP mused,

> The district or school did not prepare me to use DSSs, but my graduate program did. I had already earned my Master's degree in Special Education by the time I started working for the district. I already knew about DSSs as it relates to knowledge and skills. However, I did not have the tools and resources I needed to use DSSs. I had to use my own funding to prepare to use DSSs.

Both IRT1 and IRT2 revealed that their graduate programs taught them everything they need to effectively use DSSs to teach appropriate social skills to students with autism. IRT1 said, "I do not feel I was prepared to use DSSs for my students. A PD on the topic would have better prepared me." While IRT2 responded, "Using DSSs is not a school–wide initiative. I use DSSs independently because I learned the benefits of using DSSs with students with autism. I gained the knowledge and skills in using DSSs from my graduate program. I have a master's degree in special education." Next, PARA1 reported,

> Well, just to be honest, I feel like as a paraeducator, we should all be trained on everything that our co–teacher is trained on. I have not received any hands–on professional development at this school. I did not feel prepared in the beginning,

> but my lead teacher makes sure she shares the information from the PDs. I feel like professional development is a great tool for every educator, whether you teach in middle school, high school or even elementary school or the lead teacher or a paraeducator. It allows us as teachers to learn different skills to implement in our classroom.

Finally, IRT4 mused,

> I was prepared to teach DSSs as a result of my master's course. Teachers, especially new teachers, could benefit from a PD on using DSSs. The challenge is it is not just an overnight thing, it is not like you show them the model behavior and they are just going to do it; they need reinforcers. That is where professional development, including follow–up, would fall in. The challenge is that it takes time to see the impact of DSSs. Time is limited to focus on social skills, but I do it anyway with my little ones. The challenges have not been resolved. The school would benefit from a PD on using DSSs.

For example, Chu et al. (2020) examined teachers' unpreparedness to accommodate student needs. Results indicated that some teachers did not have access to external resources, whereas most educators depended on teacher–based accommodations. Even though many teachers did not report obtaining enough teacher training courses and professional development (PD) on inclusive education, students in classrooms where teachers received inclusive education PD outperformed their classmates by a statistically significant margin.

## Evidence of Quality

To show evidence of quality, I implemented several procedures in my study. My qualitative interviews were conducted using Zoom. I used Microsoft 365 transcription software to transcribe the interviews then I manually checked each transcription several times for accuracy – making changes, edits, and additions as needed. During the coding cycle, I created a code book to document and keep track of my codes. Ensuring consistency during the coding cycle is the most crucial part of the process (DeCuir–Gunby, Marshall, & McCullough, 2011).

Throughout both coding cycles, I had my committee chairperson review the coding to validate the accuracy of the codes applied for in vivo coding (first coding cycle) and axial coding (second coding cycle). As recommended by Saldana (2021), the initial results were emailed to participants for member checking. The few participants who reviewed the initial results responded and verified that the conclusion drawn from the analysis reflected the information they shared during the qualitative interviews.

## Outcomes

Data was collected to address the two research questions. Table 18 shows the alignment between the emergent themes and the study's research questions.

**Table 18**

*Themes Aligned to Research Questions*

| Research question | Emergent themes |
|---|---|
| RQ1: What are the special educators' experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES? | Lack of professional development<br>Limited digital tools and resources<br>Unpreparedness to use DSSs<br>Lack of teacher buy–in<br>Lack of understanding |
| RQ2: What are the special educators' experiences with implementation support in using DSSs to teach appropriate social skills to students with autism at BHES? | Lack of school–wide support<br>Lack of district support<br>Limited digital tools and resources<br>Lack of teacher buy–in<br>Lack of understanding<br>Unpreparedness to use DSSs |

The key findings for RQ1 showed that there is a lack of professional development for special educators using DSSs to teach appropriate social skills to students with autism. As a result, special educators either develop their own DSSs (including purchasing digital tools and resources) or do not integrate DSSs into their instruction. The themes aligned with RQ1 included a lack of professional development, limited digital tools and resources, and unpreparedness to use DSSs. In addition to a lack of professional development, special educators indicated a lack of school–wide and district support to use DSSs to teach appropriate social skills to students with autism.

According to Karlberg and Bezzina (2022), the fundamental attributes of the professional development needs of beginning and experienced teachers include activities

focused on subject matter content and how students learn that content, active learning, opportunities for teachers to observe, receive feedback, analyze student work, and/or make presentations, as opposed to passively listening to input by others, often defined as 'experts', and coherence, content, goals and activities that are consistent with the school curriculum, teacher knowledge and beliefs, and the needs of students.

Special educators indicated that the district does not mandate the use of DSSs, even though they have seen positive outcomes with their students with autism. This may be due to the curriculum's lack of focus on social development. However, participants indicated that they still integrate DSSs (specifically at the beginning of the school year) into their instruction to teach appropriate social skills to students with autism and other special needs. Finally, special educators indicated that there are limited digital tools and resources to use DSSs. Often, they use the Internet to research digital tools and resources to create DSSs, or they may use their own money to purchase ready–made DSSs. TpT is the most used website to purchase ready–made DSSs. However, IRT4, SLP, and OT indicated they create their DSSs by personalizing them for their students. Personalization includes using the student's favorite movie or cartoon characters (i.e., Paw Patrol, Elmo, etc.) or the student's actual faces in the DSSs.

The key findings related to RQ2 showed a lack of implementation support in using DSSs to teach appropriate social skills to students with autism. However, the IRTs and PARAs continue to use DSSs to support their students with autism. They indicated that usually, the LTSE provides implementation support, but due to a staff shortage, most LTSEs have been assigned to multiple schools. The LTSE's work assignments include

two elementary schools, but other elementary schools have been added to the caseload. Thus, the LTSE must support over 40 special educators, including teachers and paraeducators.

Codes and themes aligned with RQ2 include: lack of school–wide support, lack of district support, limited digital tools and resources, lack of teacher buy–in, lack of understanding, and unpreparedness to use DSSs. When special educators did not have access to implementation support, they indicated they would conduct their research or use the knowledge they received from their teacher preparation programs. For example, Admiraal et al. (2020) identified seven elements that schools could implement to ensure that they support professional learning experiences for teachers. Specifically, the second element focuses on creating and sustaining continuous learning opportunities for all teachers, requiring schools to provide time and other resources to facilitate learning. It also requires all inexperienced staff members to receive induction, professional learning, and mentorship support.

The conceptual framework for this study was CBAM and T3 framework. To address the research questions, data collection was organized and aligned to one of two constructs of the framework. During the first coding cycle, I narrowed my data analysis to in vivo codes that included a lack of professional development and lack of implementation support. This strategy allowed me to reflect on the importance of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

Next, the lack of professional development and implementation support aligned with the conceptual framework. This study utilized the CBAM to explore special educators' experiences with professional development and implementation support using DSSs with students with autism. Olson et al. (2020) used the CBAM to inform the implementation of a school district's strategic plan. Findings revealed that numerous school districts use a strategic plan to implement their vision and achieve goals essential to their students, stakeholders, and the larger community (Olson et al., 2020).

In this study, I addressed stages of concerns during qualitative interviews. All participants could express their concerns about professional development and implementation support. I categorized participants' responses into four categories: (a) unrelated concerns, (b) personal concerns, (c) implementation concerns, and (d) impact concerns. Table 19 shows the participants' stages of concern and the frequency of expressions.

Moreover, participants expressed their level of use of DSSs in their classrooms or schools. I categorized participants' responses into two categories: (a) variations of non–use and (b) variations of use. Responses ranged from mechanical (making changes to better implement DSSs) to refinement (making changes to increase student outcomes. Table 20 shows the participants' behavior for each level of use.

**Table 19**

*Participants' Stages of Concern*

| Stages of concerns | Possible expressions | Frequencies |
|---|---|---|
| **Category 1: Unrelated concerns** | | |
| Stage 0: Unrelated | *I am too busy right now with other priorities.* | 0 |
| **Category 2: Personal concerns** | | |
| Stage 1: Informational | *I am concerned about the changes I will need to make in my classroom.* | 0 |
| Stage 2: Personal | *How do DSSs impact me?* | 0 |
| **Category 3: Implementation concerns** | | |
| Stage 3: Management | *I am not sure how DSSs work. What do I do?* | 0 |
| **Category 4: Impact concerns** | | |
| Stage 4: Consequences | *How do DSSs impact my students?* | 2 |
| Stage 5: Collaboration | *I would like to share some ideas about DSSs with my colleagues.* | 1 |
| Stage 6: Refocusing | *I have some ideas to improve the use of DSSs.* | 3 |

**Table 20**

*Participants' Behavior for Each Levels of Use*

| Levels of use | Possible behaviors | Frequencies |
|---|---|---|
| **Category 1: Variations of nonuse** | | |
| 0: Nonuse | *I have heard of DSSs, but I have too many other priorities.* | 0 |
| 1: Orientation | *I am looking at resources and may use DSSs in the future.* | 0 |
| 2: Preparation | *I am preparing to use DSSs next week.* | 0 |
| **Category 2: Variations of use** | | |
| 3: Mechanical | *Using DSSs is time–consuming; I spend time creating materials to keep the DSSs implemented.* | 3 |
| 4: Routine Use | *Making few or no changes may be made, but I will use DSSs the same way I did this year.* | 0 |
| 5: Refinement | *I have developed a new approach to creating DSSs to improve student outcomes.* | 1 |
| 6: Integration | *I do not believe everyone has a true understanding of DSSs and the impact it has on students. I have started to collaborate with the other teachers at my school.* | 1 |
| 7: Renewal | *I have been researching other tools and resources to enhance the use of DSSs.* | 4 |

## Proposed Project

The findings of this study revealed the need for professional development and implementation support. An online course is the most appropriate project to address the lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. Thus, I created an online course that includes a series of scaffolded lessons. The online course is designed for special

educators, including IRTs, PARAs, LTSEs, OTs, SLPs, etc. The online course is self–paced but can be completed in a cooperative learning environment.

Moreover, I divided the online course into five modules, lasting about five weeks. The five modules will include: (a) The ABCs of Autism, (b) The Historical Context of Social Stories and Autism, (c) Designing a Digital Social Story, (d) Implementing Digital Social Stories in the Classroom, and (e) Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories. To conclude, the online course will provide specific instructional strategies to help special educators gain the knowledge, skills, and disposition to effectively use DSSs to teach appropriate social skills to students with autism.

## Conclusion

This qualitative study was designed to explore special educators' experiences with professional development and implementation support using DSSs for elementary students with autism. The sample for this study was 11 special educators, including four interrelated resource teachers, two special education professional development liaisons, two paraeducators, one speech–language pathologist, one pediatric occupational therapist, and one lead teacher of special education. The special educators were interviewed at either their private homes or classrooms. Data collection consisted of qualitative interviews.

A codebook was used to keep track of the codes to ensure the data's consistency, credibility, and validity. In addition, including participants' member checking and having the committee chairperson review the codebook supported the consistency, credibility,

and validity. Based on the findings of this research project study, a need for professional development was revealed. Special educators, specifically the teachers and paraeducators, felt a lack of professional development and implementation support from the school and district in using DSSs to teach appropriate social skills to students with autism. It can be concluded that findings related to RQ1 indicate that special educators may or may not use DSSs to teach appropriate social skills to students with autism due to a lack of school–wide and district professional development. Likewise, it can be concluded that findings related to RQ2 indicate that special educators may or may not use DSSs to teach appropriate social skills to students with autism due to a lack of school–wide and district implementation support.

Section 2 described the project study's qualitative research design and approach, as well as criteria for participant selection, data collection instruments and sources, the role of the researcher, researcher's experiences and biases, data analysis, evidence of quality and procedures to assure credibility, transferability, reliability, and dependability, and limitations. Eleven elementary special educators who met the project study's qualifying criteria participated in this exploratory qualitative investigation. Participants were selected using purposeful sampling. The conceptual framework of this study was based on CBAM (Hall et al., 1973) and the T3 framework (Magana, 2017, 2018). Information was acquired through semi structured interviews to understand more about the special educator's experiences with professional development and implementation support.

In Section 3, the project study is discussed due to these findings. This section addresses the rationale, literature review, projection description, project evaluation plan, and project implications.

# Section 3: The Project

For this study, I chose a professional development program, which includes an online course (see Appendix A). The project aims to address the lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. A series of scaffolded lessons are integrated into this online course. The online course is self–paced but can also be completed in a collaborative atmosphere. The online course consists of five modules, taking approximately 5 weeks. The online course is intended for special educators, such as interrelated resource teachers, paraeducators, and lead teachers for special education, and so forth. The five modules are as follows: (a) The ABCs of Autism, (b) The Historical Context of Social Stories and Autism, (c) Designing a Digital Social Story, (d) Implementing Digital Social Stories in the Classroom, and (e) Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories.

The online course aims to equip special educators with the knowledge, skills, and disposition necessary to use DSSs effectively to teach students with autism acceptable social skills, including instructional strategies, digital tools and resources, and ongoing support from peers and the facilitator. Each module is designed to be completed independently or in a collaborative setting. It also provides an engaging and creative way for special educators to educate themselves about the use of DSSs to teach appropriate social skills to students with autism. The data collected and the literature review support the development of the online course. Section 3 includes the rationale for the chosen

project and the literature review that supports the project. I also describe the project, evaluation plan, and implications.

## Rationale

The problem addressed through this study was that special educators were not receiving adequate professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. Data from this study revealed that special educators lacked professional development and support in using DSSs. Additionally, some special educators indicated a lack of understanding about using DSSs and their impact on the social development of students with autism. Of the coded data, 32.7% revealed a lack of professional development in the district. Therefore, a professional development opportunity, such as an online course, may address the inconsistencies in using DSSs. It may improve special educators' understanding of DSSs and help them effectively use DSSs to teach appropriate social skills to students with autism. The online course may provide instruction, support, and guidance for special educators. Finally, it may improve the consistent use of DSSs in the district.

## Review of the Literature

I further reviewed the literature to examine the current research on the effectiveness of DSSs in teaching appropriate social skills to students with autism. The literature review focuses on the following themes: autism affects learning, social deficits, effectiveness of using DSSs, positively influences behavior, targets social skills, reduces anxiety, and unpreparedness to use technology in inclusive education. I searched the Education Source, Academic Search Complete, Thoreau, ERIC, and Taylor & Francis

Online databases as well as Google Scholar for empirical research papers in peer–reviewed journals. I examined practitioner journals and empirical papers to gain a more comprehensive understanding of the topic. These search phrases were utilized: *autism*, *autism spectrum disorder*, *clear communication*, *concrete instruction*, *elementary special education*, *digital social stories*, *empathy*, *lack of focus*, *learning challenges*, *nonverbal deficits*, *social skills*, and *social skills.*

**Autism Affects Learning**

Autism is a neurodevelopmental disorder characterized by problems in social communication and interaction, as well as limiting and repetitive behaviors, activities, and interests (American Psychiatric Association, 2013). Students with autism may find it difficult to concentrate on information that is uninteresting to them, especially if it is academic in nature, due to delays in language and reasoning development (Rafique et al., 2019). Because many children with autism struggle with sensory issues, maintaining focus during a lesson or while working on an independent/group assignment can be an even greater challenge for them. They can be quickly distracted by stimulants that hardly register to people who are not on the spectrum, such as the texture of their clothing, bright lights, music, and a variety of other things.

When a student with autism is trying to concentrate on one activity, the sensory stimulation that they receive from the sights, sounds, odors, and bodily sensations that are present in a classroom can be overwhelming for them. Learning can be made more difficult in surroundings with a lot of background noise. Thus, sensory differences have a negative impact on the educational experience of autistic students (Jones et al., 2020).

### *Social Deficits*

In addition, students with autism have difficulty relating to people, things, and events. They often have difficulty making friends and interacting with other people, reading people's facial expressions, and making eye contact (Daud et al., 2018). The inability to engage in mutual social connections is associated with lower levels of proficiency in verbal and nonverbal communication, lower levels of imagination, and a narrower range of activities and interests (Karal & Wolfe, 2018; Stathopoulou et al., 2021). The inability to be socially responsive and a lack of empathy are two additional characteristics of autism related to social deficits.

Moreover, autism is characterized by a weakness in the ability to perceive the emotions and thoughts of others; as a result, individuals with autism are unable to comprehend and evaluate the responses of those in their immediate environment, nor are they able to properly engage with the world around them. Students who have autism frequently exhibit a lack of interest in social environments and do not actively seek out communication opportunities within those environments (Qi et al., 2018).

In contrast to their peers, it is believed that children who have autism have a more challenging time acquiring social rules, social customs, and appropriate behavior (Qi et al., 2018). These challenges can lead to difficulties in social engagement and involvement. When these areas are problematic, it will lead to other issues, such as excessive anxiety levels and inappropriate or violent conduct. For example, Almumen and Almuhareb (2020) examined the influence of a technology–enhanced social story intervention on the social engagement of children with autism. After reading the social

story on iPads, participants' thankfulness skills (words used to convey thanks) improved, as measured by the results. Students raised the frequency with which they expressed gratitude in both classroom and non-school scenarios.

**Effectiveness of Using Digital Social Stories**

While students who have autism can learn new skills, it can be challenging for them to apply these skills in real–world settings such as the classroom. There has been a recent increase in research looking into implementing social skills interventions for students with autism spectrum disorder who are educated in inclusive school settings. This is being done as part of an effort to address the problem (Dean & Chang, 2021). In their qualitative study, Roberts–Yates and Silvera–Tawil (2019) described a learning environment in which a variety of technologies have been implemented to enable students with autism to access the national curriculum and acquire social skills that improve their ability to navigate the world outside of the classroom. Technologies such as DSSs are effective in addressing learning challenges and social communication deficits (Mowling et al., 2018; Stathopoulou et al., 2019).

A DSS's primary objective is to provide knowledge of social rules and norms. In general, educators' aim in using DSSs is to provide students with autism essential knowledge through visualization. DSSs do not rely on human contact. Instead, DSSs provide incentives to express desired behavior, confirmation, and positive feedback. Because of this, the writer of each DSS is responsible for providing true information and detailed explanations of the events included in the story (Stathopoulou et al., 2021). The second step in the writing process is collecting essential information, which comes from

analyzing the events that need to be depicted and the setting in which the story occurs. DSS writers must be aware of the circumstances and the general context in which the situation occurs. This is crucial because it is necessary for a social tale to be accurate. It is regarded as vital to establish the location, time, causes, individuals taking part, the reactions of the individual for whom the narrative is made, and to express the desired conduct expected from the individual. In their study, Smith et al. (2020) revealed that technology can be utilized to assist educators in developing and implementing DSSs in school settings.

### *Positively Influences Behavior*

The literature review findings demonstrated that DSSs are effective for children with autism by positively influencing their behavior. Using a digital platform to address variability, a pilot randomized controlled trial (RCT) was undertaken with a social stories' intervention group ($n$ = 9 children on the autism spectrum) and an attentional control group ($n$ = 6 children on the autism spectrum) whose members received one social story, which was effective at causing positive improvements in behavioral outcomes that were sustained (Hanrahan et al., 2020).

### *Targets Social Skills*

In addition, it has been shown that DSSs may be useful for targeting social skills in children with autism (Kennedy et al., 2019; Uzuegbunam et al., 2019). According to Alkinj et al. (2022), the use of social stories in children with autism has been associated with an increase in comprehension, a rise in requesting, spontaneous verbalizations, and effective communication interactions (Amirrudin et al., 2019). Other studies have used

DSSs to improve social behaviors, such as asking questions, sharing aims, offering greetings (Kouo, 2018) and self–introductions, participating in activities and conversations, and asking for assistance (Stauch et al., 2018). Moreover, Almutlaq and Martella (2018) showed that social stories delivered via iPad applications are helpful for all children with autism in enhancing social skills such as smiling, giving compliments, and answering "you're welcome." To conclude, the findings of this research on targeting social skills demonstrated that DSSs improve social development of students with autism in the inclusive classroom (Alkinj et al., 2022; Almutlaq & Martella, 2018; Amirrudin et al., 2019; Kennedy et al., 2019; Kouo, 2018; Stauch et al., 2018; Uzuegbunam et al., 2019).

***Reduces Anxiety***

According to O'Connor (2009) and Klett et al. (2012), DSSs are an emerging interventional strategy for students with autism to facilitate the teaching of new and appropriate abilities while reducing anxiety. Additionally, Riga et al. (2021) determined that DSSs can make them feel safe in a social context and encourage them to collaborate with their peers without fear in group activities while simultaneously achieving significantly higher learning objectives. In addition, DSSs provide concise descriptions of a particular situation, event, or activity that incorporate specific lexico–grammatical terms in relation to what students can anticipate in each situation, particularly in school settings. In this way, they reduce anxiety and pave the way for appropriate social interaction by considering other students' perspectives (Riga et al., 2021).

### *Unpreparedness to Use Technology in Inclusive Education*

According to Hanrahan et al. (2020), students who struggle with social connection can benefit from DSSs, which allow for more intense participation in the story's content. Computers can provide a more constant and structured environment for the story, allowing repetition and direct feedback, and can give the student greater control over the learning experience. Digital technology can also improve a child's visual support, self–monitoring, and rewards, all of which can be individualized (Hanrahan et al., 2020). For DSSs to be effective with students with autism, they must be consistently implemented in the student's daily routines.

However, Zilz and Pang (2021) determined that teachers are unprepared to use advanced technology in their classrooms. On the other hand, Al Jaffal (2022) explored barriers that general education teachers face regarding the inclusion of students with autism. Findings revealed that even general education teachers lack training on how to work with students with autism in their general education classrooms, lack opportunities for collaboration with their special education colleagues to better support their students with autism, and are not given sufficient resources by their schools and districts to create an inclusive environment in their classrooms. For teachers who do not feel "prepared," the introduction of educational technology to innovate in the classroom is a significant challenge (Emre, 2019; Fernandez–Batanero et al., 2021).

## Project Description

The professional development project consists of scaffolded lessons embedded in an online course to be used by beginning and experienced special educators who work

directly with students with autism and use DSSs to support their social development. The online course will be presented to the district's professional development liaisons upon completion and approval of this study from Walden University. The project includes a plan for five modules. The modules are as follows: (a) The ABCs of Autism, (b) The Historical Context of Social Stories and Autism, (c) Designing a Digital Social Story, (d) Implementing Digital Social Stories in the Classroom, and (e) Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories.

The online course also includes a toolkit that lists several apps, web tools, and resources to learn more about DSSs. I used the learning management system Canvas to develop the online course, which includes all the digital tools and resources needed to implement the DSSs effectively. The five modules were chosen based on my study findings and literature review data. The topics were formulated based on the participant's responses during the interview. Participants revealed that they required further professional development on DSSs and various digital tools and resources to implement the DSSs. Research from the literature review revealed a lack of professional development in using DSSs to teach appropriate social skills to students with autism. I addressed professional development first because it is the highest need for special educators.

**Needed Resources**

The resources used to develop the online course comprise the research from this project study. The literature review I completed in both sections also provided the information I needed to create a well–designed course that included appropriate topics,

length, and evaluative strategies. Furthermore, the data collection and analysis supported the project study, which was the focus of the modules embedded in the online course. Canvas, a learning management system (LMS), was used to create the online course. In the study district, special educators are familiar with Canvas, as it is the LMS used to drive teaching and learning. Like students, special educators can access course materials and resources, collaborate with their colleagues, and submit assignments for feedback. Administrators, including the LTSE or principals, can monitor progress and provide additional support.

**Existing Supports**

Supporting the district's professional development liaisons, instructional technology specialists, LTSEs, administrators, and special educators, including teachers and paraeducators, is vital in implementing my project study. The professional development liaisons will determine if the online course should be included in the professional development curriculum. Additionally, support from the instructional technology specialist will be important as I used Canvas to create the course and embed the modules. The online course will be added to the professional development curriculum for special educators to access and register to complete as a professional development opportunity. They will also be allowed to earn credits within the district.

The LTSEs will also play a significant role. LTSEs will support the development of the module descriptions and links to the resources within the online course. Finally, support may come from the special educator who will complete the online course and encourage other special educators in the district to do the same. The online course can be

completed collaboratively during department, team–planning, or professional development meetings. It can also be completed independently.

**Potential Barriers and Possible Solutions**

A potential barrier to the project's implementation is that the professional development liaisons may reject the online course and refuse to add it to the professional development curriculum. A possible solution to this barrier is to schedule a meeting with the professional development liaisons to discuss the online course and the benefits of teaching and learning in special education. Another solution is to collaborate with an interrelated resource teacher in Fall 2023. He or she would be responsible for completing the online course and providing feedback on its impact on the implementation of DSSs and student outcomes.

**Proposal for Implementation, Including a Timetable**

I will contact the professional development liaisons in the district upon approval of my project study by Walden University to schedule a meeting to present the proposed online course. Additionally, a pilot group of special educators at one of the elementary schools will be potentially established to address potential barriers to the inclusion of the online course in the professional development curriculum. Table 21 shows the timetable for the inclusion of the online course in the professional development curriculum.

**Table 21**

*Implementation Timetable*

| Timeline | Action step/tasks |
|---|---|
| June 2023 | Professional development liaisons meet during the summer to review and revise the PD curriculum, which includes adding the online course. |
| July 2023 | The online course will be offered during summer PD for special educators on the leadership team. Every July, the leadership teams meet to review and discuss goals in the school improvement plan. This will provide feedback to the professional development liaisons and allow special educators to ask questions, practice using the resources, and seek further support if needed. |
| August 2023 | The online course will be available for registration. All LTSEs will promote course registration via word of mouth or during preservice meetings by encouraging their special educators to complete the course. Some LTSEs may opt–in to making the course mandatory and having special educators, including teachers, paraeducators, SLPs, and OTs, collaboratively complete the course. Survey data, using Survey Monkey, will be used to collect feedback about the course. |
| November 2023 | Based on the survey data, revisions will be made to the online course to improve its quality. |
| January 2024 | LTSEs will revisit the online course and determine if any of their special educators need to take, finish, or redo the course. They will primarily focus on special educators who are new or on improvement plans. Survey data, using Survey Monkey, will be used to collect feedback about the course. |
| March 2024 | Based on the survey data, revisions will be made to the online course to improve its quality. The professional development liaisons can discuss offering a face–to–face course and paying teachers to attend for five weeks. |
| June 2023 | Digital marketing of the online course and word of mouth. |

### Roles and Responsibilities of Researcher and Others Involved

As the researcher, I developed an online course with five embedded modules. Additionally, my responsibility is to present the online course to the professional development liaisons and to facilitate a pilot group of the online course with special educators on leadership teams. During the summer of 2023, I will present the online course to special educators. If approved to conduct a pilot group, I will work with the LTSEs, teachers, and paraeducators to complete the online course. They will provide feedback. After the pilot group completes the online course and provides feedback, I will share the feedback with the professional development liaisons who will determine if the online course should be included in the professional development curriculum.

## Project Evaluation Plan

The project will be evaluated in two ways to determine its effectiveness. Formative and summative data will be collected. Throughout the first year of implementation, special educators who teach students with autism in Pre–K through fifth grade will be given a teacher feedback survey to formatively assess each module to further improve it. Feedback will also be collected from the survey relating to the special educators' experiences completing the online course and its impact on student outcomes.

The next plan for evaluation is whether students' behavior and social skills improve. This will be summative data. I will analyze behavior infraction data for students at the beginning and end of the school year. This data will determine the effectiveness of DSSs and if specific inappropriate social skills need to be targeted, such as not following

directions, walking calmly in line, being off task, etc. Finally, participants will complete a survey to evaluate the overall effectiveness of the online course.

## Project Implications

This project study has local implications. At the local level, the findings of the qualitative study may provide implications for the lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. The data collected during this project study provides insights into the gaps in the professional development curriculum regarding using DSSs. If implemented, the online course developed for this project may positively impact teacher pedagogical practices and student social development. The proposed online course includes modules that each focus on autism, social challenges, effectively using DSSs to teach appropriate social skills, and collecting high–impact data to determine the effectiveness of DSSs. Special educators may learn new content, strategies, tools, and resources for using DSSs in their classrooms. The project study may improve social skills for students with autism (in grades Pre–K through fifth grade) and educational attainment. Students can also use these important social skills beyond the classroom as it relates to communicating and interacting with others in their community or the world.

# Section 4: Reflections and Conclusions

In this qualitative project study, I focused on the lack of professional development and implementation support for special educators using DSSs to teach appropriate social skills to students with autism. To address this problem, I developed a scaffolded online course to be implemented by special educators, including teachers, paraeducators, SLPs, and OTs in the study district. In Section 4, I present my reflections and conclusions on the project study, including project strengths and limitations; recommendations for alternative approaches; scholarship, project development and evaluation, and leadership and change; reflection on the importance of the work; and implications, applications, and directions for future research.

## Project Strengths and Limitations

This project presented several strengths, such as learner support and resources, the use of technology, clear and concise instructions, and opportunities to develop social and cognitive presence. First, the online course provided opportunities for learner support and resources. Each module contained links to appropriate resources to create a quality learning experience. According to Stavredes and Herder (2014), the 1995 Kember persistence model addresses adult learners' persistence in an online learning environment. They determined that adult learners are motivated by external rewards other than the joy of completing the course. Thus, I created early experiences for encouragement and a support system by adding a class café. Educators can use the class café to introduce themselves, get acquainted with their instructor and classmates, and ask questions through the 5 weeks of the online course. The modules or tasks in the online

course are connected to the educator's personal and professional goals. Finally, I addressed external factors that may negatively impact the educator's completion of the online course, such as hours of employment, family responsibilities, life crisis, and finances. The online course is free to special educators in the study district. It is a self–paced course and can be completed independently in a collaborative setting.

Next, the online course uses technology and delivery methods that are appropriate to the learning activities. Modules were designed to integrate technology, specifically the LMS, that special educators already use in the district. For the 2022–2023 school year, special educators started using Canvas to communicate with students and parents regarding the curriculum, submitting assignments, grades, and upcoming assessments. My goal was to use a platform that special educators would feel comfortable using. The online course contains five modules that focus on using DSSs to teach appropriate social skills to students with autism. The modules are as follows: (a) The ABCs of Autism, (b) The Historical Context of Social Stories and Autism, (c) Designing a Digital Social Story, (d) Implementing Digital Social Stories in the Classroom, and (e) Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories.

Additionally, each module provides clear and concise instructions for implementation, including weekly videos from the instructor, required readings and media, opportunities to reflect on the new knowledge or skills discussed in a written reflection paper, collaboration with colleagues in a discussion post, and a scaffolded case study. The case study is the final project, which provides the opportunity for the special educator to apply everything they learned within the online course into practice.

The final strength is that the online course provides opportunities for special educators to develop their social presence. According to Whiteside et al. (2017), social presence is a critical factor in student satisfaction and success in online learning environments. Social presence can be defined as the extent to which participants in computer–mediated activities experience a meaningful sense of connection with one another (Swan & Shih, 2005). My online course offers multiple opportunities for educators to develop their social presence through high–tech and low–tech strategies, such as a combination of synchronous and asynchronous videos. Synchronous video can be one–to–one (i.e., a meeting between the learner and instructor using Zoom or Microsoft Teams) and collaborative (i.e., weekly class meetings to introduce the module). Because it is a primarily asynchronous online course, synchronous meetings will be held weekly, recorded, and posted to Canvas. Educators can watch recordings and complete their work at a time that is convenient for them.

Furthermore, online discussions will be the central location for communication. Educators will post their initial discussion by the 3rd day (Wednesday) of each week—addressing the week's topics and responding to at least two peers by the 7th day (Sunday). Low–tech strategies, such as pictures, will be included in the online course to enhance social presence. Educators can upload a picture to the class roster and even create a profile to share with the instructor and their classmates.

This project includes limitations, even though there are several strengths. I created an online course embedded with scaffolded modules, but it still needs approval from the district's professional development liaisons. The quality of professional development and

support from schools in the district will impact special educators' persistence to complete the online course and implement DSSs in their classrooms. In addition, if the online course is available in the professional development curriculum, it is not mandatory—even though they are encouraged to complete the course to support the social development of their students with autism. Thus, the online course will not be consistently completed by special educators in the study district. A final limitation is that some educators may not have basic computer literacy and online communication skills. As a result, the online course may not be completed with fidelity, and additional learner support and resources will need to be included in the online course. Due to this, it is likely that DSSs will not be effectively implemented in classrooms, and student outcomes will be challenging to measure.

## Recommendations for Alternative Approaches

The problem addressed within the district's elementary schools focused on the lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. Alternatively, the problem could have been identified as the special educator's lack of understanding of using DSSs instead of the lack of professional development and implementation support. The use of DSSs is not a district–mandated initiative. Thus, there is limited professional development, implementation support, and tools and resources needed to use DSSs. The problem could have also been defined as the district's lack of focus on social development for students with autism.

Moreover, there are alternative approaches that I could have used to address the problem of a lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. For example, I could have developed a program that addresses the social–emotional learning needs of students with autism. The program could have been implemented as an intervention program during normal school hours, or it could have been implemented after school as part of an enrichment program. An additional approach would have been to compose a white paper discussing the study findings and the importance of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

**Scholarship, Project Development and Evaluation, and Leadership and Change**

I have been an educator for 15 years—first as a middle–grades teacher for 12 years, and now as an instructional coach. I also have a BS in Middle Grades Education, MEd in Middle Grades Education, and EdS in Instructional Technology. My professional experiences in college and the workplace have helped me gain the knowledge, skills, and disposition to conduct research, find scholarly articles, synthesize, collect data, analyze, and summarize my findings, which was the primary focus of this project study. On the other hand, I had never conducted an extensive literature review nor coded my data. Transcribing interviews or creating a code book to identify codes, categories, and themes across many current (within 5 years) research articles on autism, DSSs, professional development, and implementation support was a skill I lacked prior to the beginning of my doctoral journey. However, the courses and professors at Walden University prepared

me to strengthen the skills that I lacked. I gained knowledge by writing a review of literature using scholarly language, which included synthesizing information from the findings of the studies. The literature reviews in both sections were time consuming and required the most support and guidance from my committee chairperson. However, it was the greatest area of growth.

I learned so much about myself throughout the development of this project study, including my passion and purpose in life. My characteristics, such as patience, understanding, and persistence, strengthened. Prior to my research, I wanted to compose a white paper discussing my study's findings. However, the identified needs of the special educators during the study revealed that they felt that a lack of professional development and implementation support was impacting the way they used DSSs to teach appropriate social skills to students with autism. Data analysis was a crucial part of the process because I used it to inform the project's development instead of using my own opinion without adequate evidence to identify the best type of project to address the problem in this study. Addressing researcher bias was also important in conducting a credible research study. This allowed me to provide special educators with limited motivation or knowledge on using DSSs with a quality–designed online course embedded with scaffolded modules.

Another difficult part of my research study was identifying the conceptual framework that was most appropriate for this study and using it to gain a better understanding of my research. Ensuring alignment between the conceptual framework and other parts of the study, such as the problem, purpose, research questions, and

literature review, was challenging. However, it was critical that all parts of my research study were aligned.

I have consistently used research to inform my pedagogical practices throughout my 15 years as an educator. However, this project study strengthened my knowledge, skills, and disposition. I have a better understanding of the impact that research has in society and how it informs decisions in various fields, including education, politics, business, sports, health, and so forth. I have started to use research and data–informed practices to support my teachers and administrative coaches in my current role as an instructional coach. I use high–impact data and research–based strategies to guide my coaching meetings. As a result, my administrative coaches have also begun to use high–impact data to inform their coaching meetings.

Additionally, I planned to create a white paper for this project study, as I thought it was the most appropriate plan. However, as I conducted further research and analyzed the data, I recognized that a professional development plan would be more impactful to address the local problem and support special educators in the district. My online course was designed with quality to ensure accessibility, including scaffolded modules, use of technology, learner support and resources, and opportunity to enhance social presence. Incorporating these different elements into my online course ensured that the special educators could complete the course and effectively implement DSSs in their classrooms.

Finally, my growth as a leader and agent of social change was connected to the development of this project. While conducting my research, it was apparent that many researchers can identify local problems in their research studies, but few researchers have

conducted research to develop a project to address the identified problem. This distinguishes me as an educational leader and informs my decision to be an agent of social change. I have a newfound passion to conduct research by identifying problems; using literature, including current research studies, to determine what is already known; and identifying solutions that will inform positive change locally and globally.

## Reflection on Importance of the Work

Robinson et al. (2019) conducted a study that measured the relationship between special education burnout and job satisfaction. Findings showed that teachers in special education exhibited a statistically significant correlation between job satisfaction and burnout. Implications for preservice education programs, school districts, and administrators were highlighted, including retention tactics such as mentoring and offering significant professional development opportunities.

Throughout this qualitative project study, I identified a lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. This occurred during the data collection process, through qualitative interviews with special educators in the district, including teachers, paraeducators, SLP, OT, LTSE, and the professional development liaisons. The lack of professional development and implementation support may contribute to global concerns regarding students with autism and their learning and social development challenges in inclusive educational settings.

The findings of this study supported the notion that a professional development plan, such as an online course focusing on using DSSs, needed to be developed to address

the lack of professional development and implementation support in elementary schools in the district, thus ensuring that students with autism are receiving opportunities to improve their social skill deficits. The online course may positively impact inclusive education, and students with autism are consistently taught appropriate social skills. Steps to accomplish this include updating the district's professional development curriculum to reflect the online course, special educators completing it with fidelity and implementing DSSs consistently in their classrooms, and students with autism beginning to improve their social skill deficits. To conclude, the pedagogical practices embedded in the online course have the potential to impact social change by equipping teachers with the knowledge, skills, and dispositions to effectively use DSSs to teach appropriate social skills to their students with autism.

## Implications, Applications, and Directions for Future Research

This qualitative project study can create positive social change at the individual, organizational, and societal levels. It also has methodological and empirical implications. First, professional development and implementation support help improve special education teacher burnout and job dissatisfaction (Robinson et al., 2019). In turn, the professional development plan developed in this study provides an online course with embedded scaffolded modules for special educators to learn how to effectively use DSSs to teach appropriate social skills to students with autism. Safi et al. (2020) demonstrated the positive impact of social stories on ASD social skills. In addition, it revealed the potential efficacy of employing DSSs to reduce undesirable behaviors or promote desirable behaviors.

Next, this project study may have implications at the organizational level. The professional development plan, if implemented, will provide a solid foundation for and support for special educators who may lack understanding in using DSSs to teach appropriate social skills to students with autism. It could also provide a way to address the current trend in the study district of special educators experiencing a lack of professional development and implementation support using DSSs. Seven out of the 11 participants interviewed in the study indicated a lack of professional development and implementation support in using DSSs. PDL1 and PDL2 corroborated this situation and indicated a lack of digital tools and resources in using DSSs because it is not a district initiative. Developing an online course that included scaffolded modules focused on using DSSs can potentially increase the use of DSSs in the district and improve social skill deficits for students with autism.

Moreover, this study has potential implications on the societal level. Stat et al. (2020) revealed that DSSs have the potential to apply to a variety of social circumstances for students with autism, such as dealing with a challenging situation or gaining a new skill. Therefore, if this online course is made available for special educators and they consistently use DSSs, they should observe a decrease in undesirable and inappropriate behaviors, thus allowing students to effectively interact with others within society.

Furthermore, this study has methodological and empirical implications. Although I chose to conduct qualitative interviews, it would be ideal for future researchers to conduct similar studies on this subject using qualitative focus groups. Some individuals interviewed could not accurately identify the effective way to use DSSs and their impact

on student outcomes. However, a focus group with additional special educators effectively using DSSs to teach appropriate social skills to students with autism could have provided insights into the effective way to use DSSs and their impact on student outcomes. Additionally, some special educators may have been encouraged to consistently use DSSs, as they would have discovered their impact on other special educators in the district. The focus group could provide varied data regarding a lack of professional development and implementation support in using DSSs.

To conclude, future studies on professional development and implementation support in using DSSs to teach appropriate social skills to students with autism should specifically focus on different socioeconomic levels and geographical locations during the data collection process to determine if the results are generalizable. This study was also limited to special educators who work directly with students. An additional recommendation for future research is to expand the study to include parents of children with autism at the elementary level. A final recommendation is to conduct a longitudinal study of the students who consistently use DSSs in their daily instruction and the impact it has on their social development.

## Conclusion

In this project study, I identified a gap in professional development and implementation support for special educators using DSSs to teach appropriate social skills to students with autism. This study was designed to research the factors impacting the gap in professional development and implementation support and gather information as to what special educators needed to fill it. Due to the data collected in this study, I

determined a professional development plan would address the gap. I developed an online course embedded with scaffolded modules that focused on various subjects in effectively using DSSs. The online course is designed to help special educators get a better understanding of DSSs and learn pedagogical strategies to effectively implement DSSs in their daily instruction. Topics include: (a) The ABCs of Autism, (b) The Historical Context of Social Stories and Autism, (c) Designing a Digital Social Story, (d) Implementing Digital Social Stories in the Classroom, and (e) Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories. It will also help improve social deficits in students with autism and prepare them to interact with others in their educational settings, communities, and societies. Students with autism lack social behaviors, which has a major influence on the child and his or her family's integration into the community.

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# Appendix A: The Project

Below is the syllabus and outline of the five modules embedded in the online course. To date, the first three modules have been completed in the course only. Once approved by Walden University, the remaining modules will be completed tentatively by July 2023. Please email Simbi Animashaun at simbi.animashaun@waldenu.edu for permission to access the online course.

## Syllabus Description

Title: Effectively Using DSSs to Teach Appropriate Social Skills to Students with Autism

Description: High levels of acceptability exist within the autistic community for the intervention known as a "digital social story," which is used to teach appropriate social skills. For the next three weeks, learners will use digital technology principles to design an original digital social story. Topics include the autism community and culture, the history of digital social stories, designing a digital social story, implementing digital social stories in the classroom, and collecting high–impact data to measure the effectiveness of digital social stories. Learners collaborate on developing a digital social story and investigate how it can influence their teaching practice.

Based on my research data, an online course is most appropriate to address the local gap in a lack of professional development and implementation support in using DSSs to teach appropriate social skills to students with autism.

Type: 5 Weeks

Dates: TBD

Total Number of Hours: 25–30 Hours

## Student Learning Outcomes

Learners will:

- Exhibit an understanding of autism in education.
- Describe the impact of autism on a child's capacity to learn.
- Explain the concept of inclusion to promote an inclusive school culture, policies, and practices in mainstream schools.
- Examine the history of digital social stories.
- Evaluate digital social stories' purposes in the context of learning for students with autism.
- Evaluate learner needs for digital social stories.
- Examine digital tools and resources used to create digital social stories.
- Apply the digital story criteria to create an original digital story.

- Examine ways to implement digital social stories in the classroom.
- Explore the Do's and Don'ts for using digital social stories.
- Explore various ways to collect high–impact data, including quantitative and qualitative data.
- Measure the effectiveness of using digital social stories.

**Assignments**

**Reflection Papers**

Learners will compose a one–page reflection paper by the end of each week to discuss what they have learned due to the module's readings and discussions. Additionally, learners will describe how they can effectively support students with autism. The instructor will assign grades using an assignment rubric.

- By **Day 7 (Sunday by 11:59 PM)** each week, learners will use a Microsoft Word document to write a one–page reflection paper. Learners will reflect upon and record what they have learned from the module's readings and discussions in their reflection paper. All assignments will be uploaded into Canvas.

*Questions to consider:*

- What new ideas or concepts did I learn?
- What teaching practices or concepts were reinforced?
- What changes would I like to make to my teaching practice?
- What resources or ideas do I want to explore further?
- What questions or concerns do I still have?

**Online Discussions**

Learners must participate in a weekly discussion about autism culture, the impact of issues, effective communication, and a standard on accommodations for individuals diagnosed with autism. The discussions are wonderful opportunities to make community networks with professionals working with K–12 students and share resources about the autism population. An instructor will facilitate the discussions. The instructor will use a discussion rubric to evaluate students' participation and determine their grades.

- By **Day 3 (Wednesday by 11:59 PM)** of each week, learners will have an assigned question that must be addressed in a professionally written discussion post. All posts must be 1–2 paragraphs.
- By **Day 6 (Saturday by 11:59 PM)** each week, learners will read a selection of their classmates' responses and respond to at least two classmates' posts.

## Assessments

### Case Study

Learners must complete a 1–2 page case study, in which they apply what they have learned in the course into practice, including the essential concepts, guiding digital technology principles, and research findings associated with social development in autistic children.

As part of this case study, learners will complete the following tasks: Observe one of their students (preferably a student who has been diagnosed with autism) in their classroom, write a comprehensive descriptive case study based on their observations, and provide the following two documents:

- A **Case Study Consent Form** must be completed by the parent or guardian.
- The written report of the case study.

*The instructor will use a rubric to evaluate students' completion of the case study.*

### Final Course Project

Learners must design an original digital social story to demonstrate proficiency in the course's learning outcomes. The digital social story will focus on a social skill that has challenged students with autism in the classroom. After the digital social story has been designed, teachers will teach the skill for a week (1–2 times a day).

Then, in a one–page paper, learners will reflect on the digital social story's success, challenges, and needed improvements to teach an appropriate social skill to students with autism. The final course project, which includes a copy of the digital social story and a reflection paper, will be due on the last day of class.

### Scoring Guide

The scoring guide includes module 1–3 reflection papers, discussions, a case study, and the final course project. View the attached scoring guide below.

### Learning Resources

View the attached course outline below.

### The Intellectual Property and Plagiarism Policy

The term "intellectual property" (IP) refers to all types of technology and speech whose ownership is protected by law in the United States of America and around the world. Patents, copyrights, trademarks, tangible research property, data, and other proprietary information rights are not the only kinds of intellectual property that fall under this category. This course was designed by your instructor. As a result, you are not permitted to reproduce this course for your own profit unless you first obtain permission from your instructor.

Plagiarism refers to the practice of using another person's work, words, information, or ideas without giving that person the credit that is due. In this course, we will not tolerate any instances of plagiarism. You must provide credit to the source of any material, ideas, or information you take from another person. Please provide citations for any sources used to avoid infringing on the plagiarism policy. Plagiarism is a serious infraction that will not be tolerated lightly. If you do not properly cite any of your sources, this constitutes a violation of the plagiarism policy, and you may be subject to the repercussions of being expelled from this course.

Please click on the video below for additional information regarding using intellectual property and avoiding plagiarism. It is for seven minutes.

**Reference**

Kumar, A. (2 May 2015). *Intellectual property rights and plagiarism*. [Video]. YouTube. https://www.youtube.com/watch?v=B2UAyPRHjiY

## Course Outline

| Module | Learning Outcomes | Resources | Assignments | Assessments |
|---|---|---|---|---|
| Module 1: The ABCs of Autism | Exhibit an understanding of autism in education.<br><br>Describe the impact of autism on a child's capacity to learn.<br><br>Explain the concept of inclusion to promote an inclusive school culture, policies, and practices in mainstream schools. | *Required Readings:*<br>Mandell, D., & Mandy, W. (2015). Should all young children be screened for autism spectrum disorder? *Autism, 19*(8), 895–896. https://doi.org/10.1177/1362361315608323<br><br>*Required Media:*<br>Alli, R. (2020). What is high–functioning autism? Retrieved from https://www.webmd.com/brain/autism/high–functioning–autism<br><br>Pathak, M. (2017). What is autism? Retrieved from https://www.webmd.com/brain/autism/understanding–autism–basics | Module 1: The ABCs of Autism – Initial Discussion Post & Peer Response<br><br>Module 1 Reflection Paper | Part 1: Case Study |
| Module 2: The Historical Context of Autism and Digital Social Stories | Examine the history of digital social stories.<br><br>Evaluate digital social stories' purposes in the context of learning for students with autism.<br><br>Evaluate learner needs for digital social stories.<br><br>Explore the social stories' criteria. | *Required Readings:*<br>Chan, J. M., O'Reilly, M. F., Lang, R. B., Boutot, E. A., White, P. J., Pierce, N., & Baker, S. (2011). Evaluation of a Social Stories™ intervention implemented by pre–service teachers for students with autism in general education settings. *Research in Autism Spectrum Disorders, 5*(2), 715–721. doi: 10.1016/j.rasd.2010.08.005<br><br>Delano, M., & Snell, M. E. (2006). The effects of social stories on the social engagement of children with autism. *Journal of Positive Behavior Interventions, 8*(1), 29–42. doi: 10.1177/10983007060080010501<br><br>Gray, C. (2014). Comparisons of social stories 10.0–10.2 | Module 2: The Historical Context of Autism and Digital Social Stories – Initial Discussion Post & Peer Response<br><br>Module 2 Reflection Paper | Part 2: Case Study |

| | | | | |
|---|---|---|---|---|
| | | criteria. Retrieved from https://carolgraysocialstories.com/wp-content/uploads/2015/09/Social-Stories-10.0-10.2-Comparison-Chart.pdf<br><br>Southern, L. (2017). Social narratives support individuals with autism. [Blog]. Retrieved from https://carolgraysocialstories.com/wp-content/uploads/2015/09/Social-Stories-10.0-10.2-Comparison-Chart.pdf<br><br>*Required Media:*<br>Gray, C. (12 September 2011). What are social stories? Retrieved from https://www.youtube.com/watch?v=vjlIYYbVIrI | | |
| Module 3: Designing a Digital Social Story | Examine digital tools and resources used to create digital social stories.<br><br>Apply the digital social story criteria to create an original digital social story. | *Required Readings:*<br>Tobik, A. (2020). Social stories for kids with autism: The ultimate guide. Retrieved from https://www.autismparentingmagazine.com/social-stories-for-autistic-children/<br><br>*Required Media:*<br>Autism At Home. (19 November 2020). How to make digital stories for children with autism. Retrieved from https://www.youtube.com/watch?v=LbpaGtqQVW4 | Module 3: The Impact of Digital Social Stories on Teaching & Learning – Initial Discussion Post & Peer Response<br><br>Module 3 Reflection Paper | Part 3: Case Study |
| Module 4: Implementing Digital Social Stories in the Classroom | Examine ways to implement digital social stories in the classroom.<br><br>Explore the Do's and Don'ts for using digital social stories. | *Required Readings:*<br>n2y. (2023). Use social stories to teach positive behaviors. Retrieved from https://www.n2y.com/blog/using-social-stories-to-teach-positive-behaviors/<br><br>Simply Special Ed. (2023). Digital social narratives for back to school. Retrieved from https://www.simplyspecialed.com/digital-social-narratives-for-back-to-school/ | Module 4: Implementing Digital Social Stories in the Classroom – Initial Discussion Post & Peer Response<br><br>Module 4 Reflection Paper | Part 4: Case Study |

| | | | | |
|---|---|---|---|---|
| | | *Required Media:*<br>Edutopia (2021). Using social stories to establish new routines. Retrieved from https://www.youtube.com/watch?v=7CdjxrQSD6w | | |
| Module 5: Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories | Explore various ways to collect high–impact data, including quantitative and qualitative data.<br><br>Measure the effectiveness of using digital social stories. | *Required Readings:*<br><br>*Required Media:* | Module 5: Collecting High–Impact Data to Measure the Effectiveness of Digital Social Stories – Initial Discussion Post and Peer Response<br><br>Module 5 Reflection Paper | Part 5: Case Study |

Appendix B: Example of A Digital Social Story


During class, there are some rules my teacher tells the class about. But there are some rules I know on my own too. I am a good student and friend by following the rules. Let's review the rules!


## Rule #1: I listen to my teacher and walk calmly in line.

This helps get us safely to the cafeteria, gym, or playground.

## Rule #2: I use my walking feet in the classroom and hallways.

Using my walking feet keeps me, my teachers, and my friends safe.

## Rule #3: I listen to my teacher's directions during circle time.

I listen to my teacher's directions so I know how to complete my work.

## Rule #4: I work nicely with my friends in a group.

When I work nicely with my friends in a group, we all learn together.

## Rule #5: I help my friends.

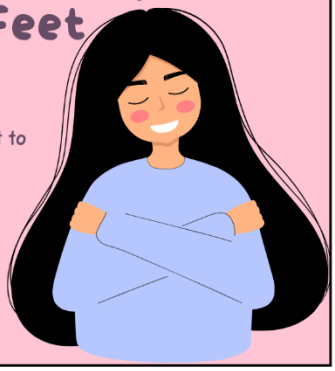
I may see a friend who is hurt or feeling sad. I can help my friend so they can feel better.


Rule #6: I raise my hand when I wan to ask a question or talk in a group.
My teacher knows I have a question or want to participate if I raise my hand.


Rule #7: I use my quiet voice during work time.
quiet
I use my quiet voice to avoid disturbing my friends who are still working.

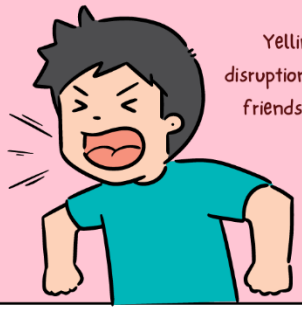
## Rule #8: I keep my hands and feet to myself.

I must keep my hands and feet to myself, so I do not bother my friends. I will not push, poke, rub, pinch, hit, bite, or punch my friends. It is not nice!



## Rule #9: I use my inside voice in the classroom.

Yelling and screaming can cause disruptions in the classroom. Some of my friends are sensitive to loud noises.




Rule #10: I do not spit! It is yucky and can spread germs.
Spitting is not nice! My friends do not like when I spit on them. It makes them sad.
spit


LET'S REVIEW THE CLASSROOM RULES!
1 Walk calmly in line.
2 Use your walking feet.
3 Listen to your teacher's directions.
4 Work nicely with your friends in a group.
5 Help your friend.
6 Raise your hand.
7 Use your quiet voice.
quiet
8 Keep your hands and feet to yourself.
9 Use your inside voice.
10 No spitting!
spit


HOW MANY RULES CAN YOU FOLLOW TODAY?
YOU GOT THIS!

Appendix C: Educational Acronyms

| Abbreviation | Definition |
|---|---|
| AAC | Augmentative and Alternative Communication |
| AR | Augmented Reality |
| ASD | Autism Spectrum Disorder |
| AT | Assistive Technology |
| ATS | Assistive Technology Specialist |
| CBAM | Concerns–Based Adoption Model |
| DSSs | Digital Social Stories |
| IC | Innovation Configurations |
| IEP | Individualized Educational Program |
| IRB | Institutional Review Board |
| ITSE | International Technology Standards for Educators |
| LTSE | Lead Teacher for Special Education |
| LoU | Levels of Use |
| OT | Occupational Therapist |
| PD | Professional Development |
| PT | Physical Therapist |
| RBR | Research Board Review |
| SLP | Speech Language Pathologist |
| SoC | Stages of Concern |
| STEAM | Science, Technology, Engineering, Art, and Mathematics |

Appendix D: Email to Participants

**Subject line:**
Interviewing Special Educators Using Digital Social Stories (DSSs)

**Email message:**
My name is Simbi Animashaun, and I am pursuing an EdD in Educational Technology at Walden University. The title of my study is *Special Educators' Experiences with Professional Development and Implementation Support Using Digital Social Stories for Students with Autism*. This qualitative study aims to explore special educators' experiences with professional development and implementation support in using DSSs to teach appropriate social skills to students with autism. If you identify as a special educator, you are invited to describe your experiences with professional development and implementation support using DSSs for this study. Interviews will take place during February 2023.

**About the study:**

- One 30–45 minute phone interview that will be audio recorded
- To protect your privacy, the published study would use pseudonyms

**Volunteers must meet these requirements:**

- 18 years old or older
- A Special educator (may include but are not limited to teachers, paraeducators, school counselors, lead special education teachers, occupational therapists, physical therapists, speech and language pathologists, psychologists, and assistive technology specialists).
- Currently using DSSs to teach appropriate social skills to students with autism
- Used DSSs to teach appropriate social skills to students with autism last year.

Please respond to this email to let me know your interest. You are welcome to forward it to others who might be interested.

Regards,
Simbi Animashaun, EdS
Educational Technology EdD Student
Walden University
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# Appendix E: Interview Questions

| Research Questions | Interview Questions |
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| | Demographic Questions:<br>1: What is your role (i.e., teacher, LTSE, SLP, OT, paraeducator, etc.) at BHES? |
| | 2: How many years have you been a (*insert participant role)?* |
| | 3: What is your highest earned degree? |
| | 4: What work assignments (i.e., teacher, SLP, OT, etc.) have you had throughout your professional career? Please indicate the number of years(s) you held each work assignment. |
| | 5: What is your current work assignment at BHES? |
| | 6: How many students are on your caseload? |
| | 7: How many students with autism are on your caseload? |
| | 8: How do you use DSSs to teach appropriate social skills to students with autism in your classroom? |
| | 9: How has the use of DSSs contributed to your student's growth? |
| | 10: Do you provide opportunities for your students to use DSSs beyond the classroom? |
| | 11: Tell me about your experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES. |
| RQ1: What are the elementary special educators' experiences with professional development in using DSSs to teach appropriate social skills to students with autism at BHES? | 12: How often do you use DSSs to teach appropriate social skills to students with autism? |
| | 13: How often have you received professional development in using DSSs to teach appropriate social skills to students with autism at BHES? |
| | 14: What tools and resources did your school/district provide during professional development in preparing to use DSSs to teach appropriate social skills to students with autism? |
| | 15: Do you feel you were prepared to use DSSs to teach appropriate social skills to students with autism? If not, how could special educators be prepared? |
| | 16: What challenges have you had with professional development in using DSSs to teach appropriate social skills to students with autism? |

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| | 17: Were the challenges with professional development resolved? |
| | 18: What needs to be improved with the professional development program at BHES? |
| RQ 2: What are the elementary special educators' experiences with implementation support in using DSSs to teach appropriate social skills to students with autism at BHES? | 19: Tell me about your experiences with implementation support in using DSSs to teach appropriate social skills to students with autism at BHES. |
| | 20: Who provides implementation support at your school? |
| | 21: How often is implementation support provided at your school? |
| | 22: What is the process for implementation support? Is it easy or difficult to request implementation support? |
| | 23: What challenges have you had with implementation support in using DSSs to teach appropriate social skills to students with autism? |
| | 24: Were the challenges with implementation support resolved? |
| | 25: What needs to be improved with implementation support at BHES? |
| | 26: Is there anything else you would like to share about professional development and implementation support in using DSSs to teach appropriate skills to students with autism? |