

Examining Implementation Fidelity of Shared Book Reading Training by Early Childhood  
Special Education Teachers in the United Arab Emirates

by

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## DISSERTATION ABSTRACT

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Doctor of Philosophy in Special Education and Clinical Sciences

Title: Examining Implementation Fidelity of Shared Book Reading Training by Early Childhood Special Education Teachers in the United Arab Emirates

Shared book reading is a method to support the academic and social skills of children with autism. In this study, shared book reading training was implemented with three Arabic-speaking teachers in the UAE. Teachers' knowledge was assessed using pre and posttests. A multiple baseline design was employed to assess the effect of practice-based coaching on teachers' implementation fidelity. In addition, the appropriateness, acceptability, and feasibility of the training was examined. Moreover, children's spontaneous and prompted comments were explored. The findings of the study showed overall gains in teachers' knowledge of shared book reading, a strong functional relation between practice-based coaching and teachers' implementation fidelity, and a high rating of appropriateness, acceptability, and feasibility. Out of three children with autism, only one child had a strong functional relation between the increase in spontaneous commenting and their teacher implementation fidelity.

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## DEDICATION

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# CHAPTER I

## INTRODUCTION

### **General Statement**

Professional development represents a range of tools and activities used to improve teaching practices. Research has shown that professional development can enhance teaching practices (Kennedy, 2016; Kedzior & Fifield, 2004; Borko et al., 2010), increase knowledge (Borko et al., 2010), and improve the learning outcomes of students (Kennedy, 2016; Borko et al., 2010; Guskey, 2000). Professional development is important for teachers to keep up with changes in education, policies, and students' learning needs (Guskey, 2000). However, not all professional development is effective and results in changes in teachers' teaching practices. Guskey (2000) argues that schools that seek to improve student outcomes will require high-quality professional development opportunities for their teachers.

According to previous research, effective professional development should include five characteristics. It should be supportive, job-embedded, instructionally focused, collaborative, and ongoing (Guskey, 2000; Hunzicker, 2010). First, supportive professional development usually focuses on teachers' learning needs (Kedzior & Fifield, 2004). Professional training success depends on a teacher's desire and motivation to learn. If the training is not perceived as necessary or important, it can make teachers reluctant to act upon what they learned (Kennedy, 2016). Thus, supporting teachers' needs in the focus of professional development is essential for its success.

Second, effective professional development is job-embedded (Hunzicker, 2010). Effective professional training should allow teachers to engage with the learning materials and apply what they learn in their classrooms. Therefore, implementing what is learned in the

training is a way to show that teachers gained knowledge from the training. Third, effective professional development should be instructionally focused (Hunzicker, 2010). Instructionally focused means focusing on the “subject content, pedagogy, and student learning outcomes” (Hunzicker, 2010, p.5). Similarly, Kedzior and Fifield (2004) agree that focusing on the content area when designing professional development is an important aspect of its effectiveness. When teachers are unsatisfied with training, it is because it is not focused on the content area or tailored to their needs. For example, Anati and Ain (2012) reported that teachers in the UAE specifically requested courses and professional training to support children with disabilities.

Fourth, effective professional development encourages collaboration through its design (Hunzicker, 2010). Teachers collaborating during professional development gives them a chance to discuss questions and share knowledge about the learning materials (Garet et al., 2001). Creating a collaborative environment during the training can support the learning of teachers and the later implementation of the strategies if teachers feel like they have a community of practice (Gorozidis et al., 2020). Last, professional development should be ongoing (Hunzicker, 2010), including continuous support and feedback after the initial training.

Participation in professional development is often a part of teachers’ job requirements. For instance, teachers in Abu Dhabi in the UAE are required to participate in 30 hours of professional development each year (Buckner et al., 2016). Teachers often report that they do not feel interested in the topic or engaged during the training, inhibiting their ability to connect what they learned and their classroom practices (Colbert et al., 2008). Research has shown that not all professional development is beneficial or relatable to teachers who attend them (Avalos, 2011). Thus, it is crucial that teachers are provided with support when learning a new strategy or skill. Professional development has to be driven by implementation support such as coaching and

feedback to increase the likelihood that there will be positive and long-term effects from the training. There are several benefits to providing teachers with implementation support when participating in professional development. Supporting teachers during professional development sets them as being capable of implementing evidence-based practices with high fidelity (Barton et al., 2013; Rakap, 2017; Scheeler et al., 2006). Research has proven that supporting teachers' implementation fidelity is not limited to improving teachers' outcomes but also enhances children's developmental, social, and educational outcomes (Guo et al., 2016; Stein et al., 2008; Anderson et al., 2020).

### **Statement of Problem**

Although governments are clear about the requirement of attending training and professional development workshops for special education teachers, lack of training and low training quality remain an issue (Anati & Ain, 2012; Berry et al., 2011; Bruder et al., 2009). If support is not extended after initial training for special education teachers, this can lead to a series of problems including attrition (Berry et al., 2011; Billingsley, 2004; Feng & Sass, 2013), role ambiguity (Rock et al., 2016; Shepherd et al., 2016), and burnout (Bataineh & Alsagheer, 2012; Langher et al., 2017).

Stand and deliver one-time professional development approach may not be enough to meet teachers' needs. According to Fittell (2009) that this type of professional development has minimal impact on teachers learning and it is not effective to be implemented. Existing literature showed that teachers in Abu Dhabi reported that training sometimes could be repetitive, include unrelated information or material, or be offered by unspecialized personnel (Buckner et al., 2016). Surprisingly, training that considers implementation support such as coaching are not always considered when designing training for teachers, which can lessen the effectiveness of the

training and drift away from its purpose. There is a need to provide teachers with better training experience and improve the quality of service delivery. No one can deny the fact that the UAE strives to improve the lives and services provided for children with disabilities. One way to overcome the problems that arise from a lack of support is to implement high-quality training that extends support to teachers in their classrooms. This study aimed to design high-quality training that considers the UAE's unique culture and continues to support teachers' implementation of the newly learned skills.

### **Purpose of the Study**

This multiple-method study aimed to examine the effect of coaching on ECSE teachers' implementation fidelity in Abu Dhabi. The study included ECSE teachers who work at Zayed Higher Organization for People of Determination (ZHO) in Abu Dhabi. This study focused on assessing teachers' knowledge, the functional relation of coaching on teachers' fidelity of implementation, examining ECSE staff rating acceptability, appropriateness, and feasibility. Additionally, exploring the functional relation of teachers' implementation fidelity on children's outcome.

### **Importance of the Study**

It is essential to provide high-quality training for special education teachers as it has been proven to support teachers' knowledge, which can positively improve the learning of children with disabilities (Ozcan & Uzunboylu, 2015; Feng & Sass, 2013). According to the Organization for Economic Co-operation and Development [OECD] (2015), results from the Teaching and Learning International Survey (TALIS) showed that teachers in Abu Dhabi reported a high percentage of attending professional development. Around 92% of the teachers attended training in various topics (OECD, 2015). These results confirm that the UAE is aware of the importance

of training and that it is necessary to have highly qualified teachers. Moreover, providing training can ensure that teachers in the UAE are up to date on the latest information about teaching and learning.

Children with autism often have challenges in social communication skills (CDC, 2022). Research in autism has focused generally on teaching communication skills to children with autism, but verbal initiation specifically is an issue that many children with autism encounter (Koegel, 2000; Taylor & Levin, 1998). Training teachers to support children's verbal initiations is crucial as previous research heavily focused on teaching pointing when prompted and responding when prompted (Akmanoglu & Batu, 2004; Bethune & Wood, 2013; Ingvarsson & Le, 2011). Children with autism lack independence when performing some skills or tasks (Hume et al., 2009); however, it is vital that research shifts its focus to increasing independence and spontaneous initiation for children. Training is needed to support communication for children with disabilities in Abu Dhabi (Alhmoudi, 2023), and centering the training around children's spontaneous commenting should be prioritized. Fostering the independence of children with autism in Abu Dhabi is one of the goals of this dissertation.

Administrators may benefit from this research by providing better strategies to support special education teachers. Existing literature has shown that a lack of support from administrators affects special education teachers negatively (Billingsley, 2004; Hester et al., 2020; Conley & You, 2017). Special education teachers tend to leave or think about leaving their jobs because of the lack of support from their administrators in their schools (Conley & You, 2017). Hester et al. (2020) mentioned in their study that special education teachers tend to decide to leave their jobs because administrators do not provide resources such as materials for the classroom and professional development opportunities. One way to alleviate the problem of

teachers' attrition is to provide them with access to high-quality professional development where they can gain knowledge, improve their teaching, and ultimately reduce the stress involved in completing a job that they may not be well equipped to handle (Geiger & Pivovarova, 2018). By understanding what contributes to special education teachers' retention, administrators will be better equipped to recognize that providing training is one of the most important factors to support the retention of special education teachers.

Special education teachers are more vulnerable to attrition than other teachers (Ingersoll, 2001). They leave their job for many reasons; on the top list is a lack of training (Hagaman & Casey, 2018). This problem can lead to a shortage of special education teachers in schools. As a result, it can impact children with disabilities and their learning (Billingsley, 2004). Coaching support is not available for these teachers even when provided with professional development opportunities. Research has shown that there is a connection between coaching and the increase in teacher self-efficacy (Tschannen-Moran & McMaster, 2009; Collins, 2021). This study can be an example to demonstrate the effect of coaching after professional development and its impact on ECSE teachers' personal and professional growth.

This study might also be valuable to colleges and teacher preparation programs. For example, they can incorporate different coaching models into their workshops. This will give pre-service special education teachers insights into the importance of working with coaches to improve implementation fidelity. Additionally, being trained by highly qualified coaches will ease the stress of pre-service teachers and make them more prepared to serve children with disabilities when they start their jobs after graduating. Moreover, pre-service teachers can start learning and practice implementing evidence-based interventions at their practicum sites.

## Theoretical Framework

We seek change in teachers' instructional behaviors from professional development programs. Many studies have investigated changes in teachers' instructional practices after receiving training (Brock et al., 2018; Harjusola-Webb & Robbins, 2012). The change indicates that the offered professional development was valuable, and teachers benefited from the provided information. This research study is driven by Guskey's (1986) teacher change framework. The framework model includes staff development, changes in teachers' classroom practices, changes in student learning outcomes, and changes in teachers' beliefs and attitudes (Guskey, 1986).

Figure 1

*Modified Guskey's Process of Teacher Change (1986)*



Change in children's outcomes is not limited to achieving high test scores; instead, it can include other observed behaviors. For example, attending and participating in class can be considered a change in students' outcomes (Guskey, 1986). Thus, in providing professional development to special education teachers, the expectations for change and the specific target behavior for the child outcomes should be defined, including academic and social outcomes. Without implementation support, the desired outcomes of the training may not be achieved. Thus, in this study, we modified Guskey's (1986) framework and added coaching support for teachers after the professional development and sustained change in teacher attitudes, beliefs, and knowledge as the last outcome.

There are three recommendations to take into consideration when applying the teacher change framework. First, Guskey (1986) mentioned that change is challenging, and it takes time for teachers to implement new ideas. Individuals can agree with the idea that change has to be made but may not fully accept it or work toward making that change happen. They may be hesitant to change because they have some concerns, not fully understanding the change, or have no patience (Kin & Kareem, 2017). Teachers may feel that implementing new information to their teaching practices or behavior is stepping outside their comfort zone; thus, it might take time to see change.

The second recommendation is to provide constant feedback to teachers on students' learning (Guskey, 1986). In that way, teachers can see students' learning outcomes as evidence of the usefulness of the professional training and, therefore, change their behavior (Guskey, 1986). Last, follow-up with teachers after providing the training is recommended (Guskey, 1986). With follow-ups, teachers can connect with the trainer, make modifications, and get feedback to implement the learned skills better. Follow-up can be through coaching or connecting with other teachers to share their ideas and thoughts (Guskey, 1986). It is crucial to continue working with teachers after the training to provide needed support, answer questions, and ensure proper changes are made for future professional development training.

Culture is an integral part of research. According to Pelzang and Hutchinson (2017), researchers who disregard culture when conducting research may not be able to understand the participants' points of view. Thus, this research design implies a culturally affirming approach.

Involving participants in the research is not always considered, even though participatory research has proven to be beneficial for the community and research (Macaulay et al., 1999). Using a community participatory approach in this research can remove barriers between the

researcher and teachers that can be apparent because of the power dynamic between a researcher in the U.S. and teachers in Abu Dhabi. Some factors that influence teacher agency include “personal capacity,” “beliefs,” and “values” (Priestley et al., 2015, p. 4). Researchers have to consider teacher agency, which can be achieved through community participatory research.

Awareness of the cultural differences between the U.S. and the UAE is important when conducting this research, and values, beliefs, and teacher experiences in the UAE should be incorporated into the training. For example, the UAE is considered collectivist, and people value hierarchy where their opinions and ideas are influenced by those they deem to be in power, and it is customary to follow their lead and look for their direction (Matsumoto, 2019). Designing training that aligns with the characteristics of the culture and people in the UAE is vital for its success. The UAE and Abu Dhabi specifically strive to keep their own heritage and values (Matsumoto, 2019). This shows the important role of culture in the UAE and its impact on every aspect of life there, including education and research.

In respect to the culture of the UAE and its unique characteristics, this study evaluated teachers’ change in knowledge after training, examined the effect of practice-based coaching on teacher implementation fidelity after initial training, explored the impact of practice-based coaching on children's outcomes, and assessed the acceptability, appropriateness, and feasibility of the training.

### **Research Questions**

This study goal was to answer the following research questions:

Primary

1. How do early childhood special education teachers improve their knowledge of shared book reading after training?

2. Is there a functional relation between the implementation of practice-based coaching after an initial training and teachers' fidelity of intervention implementation?

#### Secondary

1. How will ECSE staff rate the acceptability, appropriateness, and feasibility of the training on using shared book reading to support spontaneous commenting for children with autism?
2. Is there a functional relation between the rate of spontaneous commenting during shared book reading after teachers receive coaching to deliver a shared book reading activity?

#### **Definition of Terms**

The following terms are defined to allow the readers to understand the content better.

**In-service Special Education Teachers:** professionals who work with children who have some type of disabilities such as learning, mental, emotional, and physical (U.S. Bureau of Labor Statistics, 2022).

**High quality professional development:** A training that targets teachers' needs and provides implementation support such as coaching to improve their personal competencies.

**Attrition in Special Education:** "Leaving" the field of education entirely, "moving" to another school with a special education position, "transferring" from special education to a general education position, or "intent" to stay for a specific number of years (Billingsley& Bettini, 2019, p.3).

**Teacher Retention:** Staying at the job/school instead of leaving (Lochmiller et al., 2016).

**Role Ambiguity:** "inadequate role sending; lack of agreement or coordination among role senders produces as a pattern of sent expectations which contains logical incompatibilities, or

which takes inadequate account of the needs and abilities of the focal person." (Kahn et al., 1964, p.21)

**Burnout:** The decrease in physical or psychological well-being, which can reduce personal accomplishment and cause over-depersonalization (Perlman & Hartman, 1982).

**Coaching:** Providing support from a qualified professional to teachers using modeling, commenting, visual or gestural prompting, or offering a suggestion to improve the implementation of learned skills

**Acceptability:** participants' belief of a particular intervention or training as "agreeable, palatable, or satisfactory" (Proctor et al., 2011, p. 3).

**Appropriateness:** The extent to which an intervention or training is considered a suitable and good match for participants or community (Proctor et al., 2011).

**Feasibility:** The possibility that training can be implemented easily and successfully (Proctor et al., 2011).

**Implementation Fidelity:** Following the steps of an intervention and delivering it as expected (Carroll et al., 2007).

**Child initiations:** A child independently uses verbal language to comment.

## **Summary**

The aim of this study was to assess teachers' knowledge of the training, provide coaching support for teachers after training, assess implementation outcomes, and explore children's spontaneous comments using a multiple-method design approach. As most previous research focused only on stand and deliver one time training, there is a gap in research to include implementation support. The study's results could help policymakers, administrators, special education teachers, and teacher preparation programs. The remainder of this dissertation included

four chapters. Chapter II included a thorough review of the literature on teacher training, chapter III discussed the method and procedures of the study, chapter IV presented the results of the study, and chapter V included a discussion of the results and future directions for research.

## CHAPTER II

### LITERATURE REVIEW

Before the discovery of oil, the UAE experienced a scarcity of basic living needs and poverty. Traditional jobs included farming, such as date palm, fishing, and pearl diving (Sowa & De La Vega, 2008). Formal schools were not established then, and children were taught reading by teaching them how to read the Holy Quran (Sowa & De La Vega, 2008). Oil was first discovered in 1950 in Abu Dhabi (Ghanem, 2001). The UAE witnessed substantial improvements and developments in health, education, infrastructure, and social life (Sowa & De La Vega, 2008). The UAE formed a federation on December 2nd, 1971, including six Emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Fujairah (The United Arab Emirates' Government portal, 2022a). A year later, Ras Al Khaimah joined the federation (The United Arab Emirates' Government portal, 2022a). Sheikh Zayed bin Sultan Al Nahyan (May Allah have mercy on him) was the appointed first president of the UAE, and now Sheikh Mohammed bin Zayed bin Sultan Al Nahyan is the current ruler.

#### **Education in the UAE**

After the start of oil production in the UAE, formal schools emerged. There were only about 20 schools with fewer than 4000 students, and most of them were males (Sowa & De La Vega, 2008). After the federation of the UAE in 1971, the Ministry of Education was established (Gobert, 2019). The number of schools and students in 1971 increased to 69 schools, with 28,000 students attending (Sowa & De La Vega, 2008). The education system in the UAE consists of public and private schools, with the government providing funding to the public schools (Gaad et al., 2006). On the other hand, private schools are funded by non-governmental sources (Sowa & De La Vega, 2008). All UAE nationals are offered free public education starting from

kindergarten through college. In 2018, changes have been made to the educational structure in the UAE. Now, children ages (4-5 years old) join Kindergarten 1 and Kindergarten 2; Cycle 1 is the basic level and includes elementary grade levels [1<sup>st</sup> - 4<sup>th</sup> grade], intermediate is Cycle 2 [6<sup>th</sup>-8<sup>th</sup> grade], and secondary level is Cycle 3 [10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade] (The United Arab Emirates' Government portal, 2023).

**Special Education in the UAE.** Previously, children with disabilities from Arab countries were considered a burden to their families and communities (Hadidi & Al Khateeb, 2015), and services were unavailable to support them or their families. In 1980, the Ministry of Education in the UAE introduced early intervention services for children at elementary and intermediate levels (Alborno, 2017). Children identified with disability were referred to segregated special education classrooms, where special education teachers provided support to them (Alborno, 2017). According to Hadidi and Al Khateeb (2015), many of the schools and centers in Arab countries were initially only for individuals who have intellectual disability, hearing impairment, visual impairment, or physical disability, and in general, they were limited and not easily accessed.

In 2000, the Ministry of Education established the Department of Special Education to support children with disabilities academically and socially (Alborno, 2017). The UAE has become more aware of protecting the rights of children and individuals with disabilities; thus, the first federal law, No. (29) of 2006 regarding protecting the rights of people with disabilities was issued (The United Arab Emirates' Government portal, 2022b). The new federal law improved the welfare of children and individuals with disabilities in the UAE. For instance, the federal law assures individuals with disabilities the right to services similar to those offered to typical

individuals, such as social, health, education, and employment (The United Arab Emirates' Government portal, 2022b).

There are different types of schools, organizations, and centers for children with disabilities. The two well-known governmental organizations that serve individuals with disabilities are the Zayed Higher Organization for People of Determination (ZHO), located in the Emirate Abu Dhabi, and Sharjah City for Humanitarian Services (SCHS), located in the Emirate Sharjah (The United Arab Emirates' Government portal, 2021).

According to the document in the United Arab Emirates' Government portal (2021), 71 schools and centers provide services to children with disabilities as a group, and 24 centers provide one-on-one service. These schools and centers are classified as governmental, local, or private. There are seven governmental, 14 local, and 50 private schools and centers for group services offered to children with disabilities (The United Arab Emirates' Government portal, 2021). Twenty-four centers provide one-on-one service, which is all private (The United Arab Emirates' Government portal, 2021). The Emirate Abu Dhabi and Al Ain City have 12 local and 18 private centers for group services and only five private one-on-one centers (The United Arab Emirates' Government portal, 2021).

**Special Education Teachers in the UAE.** A robust special education system relies on well-prepared and qualified teachers. Several universities in the UAE offer special education programs to prepare future teachers to serve in the field. According to the Commission for Academic Accreditation [CAA] (2020), the UAE offers special education programs in five universities: United Arab Emirates University, Abu Dhabi University, Al Ain University, The British University in Dubai, and the University of Birmingham Dubai. The program levels are Bachelor's, Postgraduate Diploma/Postgraduate Certificate, Master's, and Doctor of Philosophy

(CAA, 2020). Only one university offers a Ph.D. in special education, which is the United Arab Emirates University in Al Ain (CAA, 2020). No special education programs are provided in universities or colleges in Sharjah, Ajman, Ras Al Khaimah, Umm Al Quwain, or Fujairah. Students interested in pursuing their studies in special education may enroll in universities either in the Emirate of Abu Dhabi, Al Ain City, or the Emirate of Dubai.

**In-Service Special Education Teachers in the UAE.** In-service teachers are teachers who completed the required training, received their degrees, and are working full-time to serve children with disabilities (Glass et al., 2021). The Ministry of Education issued General Rules for the Provision of Special Education Programs and Services for public and private schools in the UAE. This document listed the roles and responsibilities of in-service special education teachers, and these roles differ based on the setting. For example, the roles of special education teachers in resource rooms differ from those of general education classrooms or special education teachers who work with gifted and talented children.

Most in-service special education teachers who are serving in different settings are required to welcome children with disabilities in their classrooms, assess and monitor their progress, ensure implementation of the special education programs, collaborate with subject teachers/general education teachers, collaborate with families of children with disabilities and professionals, attend professional development workshops, create vocational programs for children with disabilities who are in inclusive settings, and provide reports about children's performance (Ministry of Education, n.d.). There are some differences in the roles of in-service special education teachers. For example, in-service special education teachers working with gifted and talented children must prepare Advanced Learning Plans (ALPs) (Ministry of

Education, n.d.). Additionally, in-service special education teachers are required to identify and nominate gifted and talented children (Ministry of Education, n.d.).

### **Challenges Faced by In-service Special Education Teachers**

**Role Ambiguity.** The Ministry of Education in the UAE indeed has a set of roles that special education teachers should meet. Nevertheless, research has reported that special education teachers struggle with role clarity (Shepherd et al., 2016; Rock et al., 2016). With shifts in policies to improve the special education system in the UAE and the learning experiences for children with disabilities, the roles of special education teachers are also changing. Shepherd et al. (2016) mentioned that help is needed from researchers, faculty members, and experts in the field of special education to state the roles of special education teachers distinctly.

Role ambiguity is defined as "inadequate role sending; lack of agreement or coordination among role senders produces as a pattern of sent expectations which contains logical incompatibilities or which takes inadequate account of the needs and abilities of the focal person." (Kahn et al., 1964, p.21). Role ambiguity is not limited to the lack of knowledge about job responsibilities but includes various dimensions that one should consider. According to Papastyliaou et al. (2009), there are four different aspects of role ambiguity that teachers may experience: the ambiguity of objectives and expectations, the ambiguity of responsibilities, the ambiguity of processes and objectives, the ambiguity of priorities, and the ambiguity of behavior. Teachers may lack knowledge of what is anticipated from them and the necessary steps to complete a specific task. Additionally, teachers may not be aware of procedures or what should be dealt with first in order to meet a goal or complete a task successfully. Moreover, communicating with people they work or interact with can add to the ambiguity of their roles.

Hemdan et al. (2021) interviewed special education teachers in the UAE, and some of the challenges they encountered in their job were modifying the curriculum to meet students' needs, writing reports, writing IEPs, filling out assessment forms, and collaborating with family members and other service providers. Special education teachers clearly struggle with role ambiguity. Modifying the curriculum, writing reports, and IEPs fall under the ambiguity of process and objectives. Moreover, working with parents and other professionals is considered an ambiguity of behavior. One way to alleviate the issue of role ambiguity is to identify the type of ambiguity and provide teachers with training on the areas they struggle with.

**Teacher Burnout.** Burnout is another problem that in-service special education teachers encounter. Burnout is the decrease in physical or psychological well-being, which can reduce personal accomplishment and cause over-depersonalization (Perlman & Hartman, 1982). According to Park and Shin (2020), stress is much easier to manage, while burnout affects the teacher's mental health and well-being. There are several factors related to special education teachers' burnout. These burnout factors can be related to students, teachers, or schools (Park & Shin, 2020). Different types and severity of disability can have different levels of burnout for special education teachers. For instance, working with students who have autism increases the level of burnout than working with students who have challenging behaviors, Attention-Deficit/Hyperactivity Disorder (ADHD), emotional difficulties, intellectual disabilities, visual impairment, physical disability, speech and language problems, health problems, or hearing impairment (Kokkinos & Davazoglou, 2009).

Additionally, socioeconomic status (SES) can add to the level of burnout. Students from low SES tend to be offered special education services, and teachers feel stressed when the students do not make adequate progress or do not have enough resources to support them (Park

& Shin, 2020; Skiba et al., 2008). Moreover, teachers' education can also influence the level of burnout (Park & Shin, 2020). According to Zabel and Zabel (2001), teachers with master's or higher education degrees scored higher on personal accomplishment items. A higher personal accomplishment indicates a high level of job satisfaction and may be less susceptible to burnout. The school-related factors that contribute to burnout include challenges at work, lack of availability of resources to teachers, and lack of support from other teachers and administrators (Park & Shin, 2020). One way to support special education teachers and prevent them from depersonalization is by providing in-service training in the areas they need support (Langher et al., 2017).

Training for special education teachers can also boost their self-efficacy and reduce burnout (Park & Shin, 2020). Furthermore, research has shown that teachers with high self-efficacy can support children's learning regardless of the learning challenges the children may have (Tschannen-Moran & Hoy, 2001). Moreover, when special education teachers are provided with adequate support and training, their chances of suffering from burnout will be low, and they will be better equipped to support children with disabilities.

### **Training for Special Education Teachers**

The quality of instruction and the experience of special education teachers are crucial for children's achievement, especially when many governments, including the UAE, are working toward ensuring children with disabilities are provided with the best services that promote their academic and social skills. Professional development or training plans should be prioritized to improve the special education teacher's performance and the outcomes of children with disabilities. Professional development is defined as a structured plan that targets teachers' skills and knowledge to improve student outcomes (Guskey, 1986). Many studies have mentioned that

teachers' roles will be changing due to the new needs in the special education field. For instance, Woulfin and Jones (2021) stated that special education teachers are dealing with changes, and their job is not only to teach children with disabilities but also to collaborate with parents and complete paperwork. Thus, they should be provided with professional development opportunities (Woulfin & Jones, 2021). With the changes in policy regarding teaching and supporting students, it is essential to provide teachers with professional development to help them fulfill their different roles (Peterson-Ahmad et al., 2018). Training special education teachers is essential to ensure they deliver services as intended and to maximize children's benefit from the provided services. Ali and Opoku (2023) interviewed special education teachers and general education teachers in the UAE, and the interview results showed that they requested more training to support children with disabilities. Teachers indicated that support is needed in various areas, and one of them was implementing evidence-based practices (Ali & Opoku, 2023). Lack of training and preparation affects the special education teachers and the children they serve.

Coco (2019) investigated the professional development needs of special education teachers worldwide using data from the Teaching and Learning International Survey (TALIS) from 2013. Data revealed that about 23% of teachers internationally need professional development related to special education. In the UAE, specifically Abu Dhabi, a similar percentage (23%) of teachers reported a high need for special education professional development compared to the United States, where it was only 9% (Cooc, 2019). High-quality professional development should be provided to teachers to support teachers and their training needs. Training has several benefits, such as improving and increasing work quality, communication, and a sense of belonging (Woulfin & Jones, 2021). Teachers who do not have proper training are prone to attrition (Feng & Sass, 2013). In contrast, providing adequate

training through professional development can help individuals stay in their jobs (Woulfin & Jones, 2021). When challenges are addressed and a plan of action is set, teachers will feel acknowledged and well-prepared to support children with disabilities.

### **Training on Supporting Children with Autism**

Autism training is an essential topic for teachers in the UAE. Eapen et al. (2007) used a questionnaire and showed that 58 in 10000 children who are three years old in the UAE had autism characteristics. The second phase used a clinical interview, which revealed that 29 in 10000 children had Pervasive Developmental Disorders (PDD). Indeed, the number of children diagnosed with autism is increasing in the UAE, and teachers need to be prepared to support them in the classroom. Al Salahat and Zaharudin (2022) reported that 68% of special education teachers in Abu Dhabi have knowledge of autism (e.g., characteristics of autism). Similarly, the survey results by Abduekarem et al. (2019) showed that special education teachers in the UAE are well prepared to manage behavioral challenges that students with autism may exhibit. However, knowledge and attitude are not enough to support children with autism. Lack of specific training on autism can hinder teachers from serving children (Scheuermann et al., 2003).

There is limited research on the instructional strategies teachers use in the UAE to support children with autism. Evidence-based practices (EBP) are interventions or instructional strategies supported by research to improve student outcomes (Cook & Cook, 2013). Sopaul (2019) indicated that parents of children with autism in the UAE seek alternative treatments, such as traditional treatments, when no effective intervention plans are offered. Some traditional treatments are Camel milk, Hijama (cupping), and Epsom salt (As cited in AlQahtani & Efstratopoulou, 2023). The availability of EBP for children with autism is limited in the UAE and other countries in the Gulf Cooperation Council (GCC)(AlQahtani & Efstratopoulou, 2023).

Assessing the knowledge and awareness of teachers on autism is not enough to conclude that special education teachers are capable of supporting children's learning. Therefore, teachers should be provided with training on specific interventions and skills related to autism.

**Support Initiations for Children with Autism Through Shared Book Reading.** Shared book reading is an evidence-based practice defined as an adult reading a book to a child or a group of children while implementing various techniques to support child interaction and engagement during reading time (What Works Clearinghouse, 2015). Children are required to have social and communication skills to be able to engage and participate by asking questions or commenting during shared book reading (Fleury & Ford, 2021). Children with autism show deficits in social and communication skills (CDC, 2022) that hinder their participation during shared book reading activities in the classroom.

Shared book reading interventions have been discovered to have evidence to support children's comprehension, alphabet knowledge, general reading achievement, and language development (WWC, 2015). Researchers have implemented shared book reading with children with autism to measure comprehension (Spooner et al., 2015; Whalon et al., 2016; Laçin, 2023), on-task behavior (Fleury et al., 2014; Kim et al., 2018), and initiations (D'Agostino et al., 2020; Akemoglu & Tomeny, 2021; Fleury & Ford, 2021). There is limited research on shared book reading in the UAE. Altamimi and Ogdol (2023) examined a shared book reading strategy to improve reading comprehension for typically developing children in the UAE. Even though there is a paucity of research on shared book reading in the UAE, the researchers recommended investigating its impact on children with autism.

## **Implementation Support**

**Coaching.** Coaching is an implementation support that aims to improve teachers' ability to implement new skills or interventions in their classrooms. Several studies implemented coaching to support special education teachers (Cornelius et al., 2020; Reddy et al., 2021; Peterson Miller et al., 1991; Morgan et al., 1994). Coaching can be peer coaching, cognitive, literacy, or instructional (Cornett & Knight, 2009). Instructional coaching involves collaborating with teachers to apply research in their teaching instructions (Knight, 2009). This coaching model focuses on the fidelity of implementation and child outcome (Devine et al., 2013). Supporting special education teachers ensures the successful implementation and maintenance of learned skills.

**Practice-Based Coaching (PBC).** Coaching supports early interventionists with skills learned after training or motivates them to continue their professional growth (Gallacher, 1997). PBC is defined as a "cyclical process for supporting preschool practitioners' use of effective teaching practices that leads to positive outcomes for children" (Snyder et al., 2015, p. 2). In this type of coaching, the coach and the coachee work collaboratively to achieve the coaching goals. The three components of PBC include shared goals and active plan, focused observation, and reflection and feedback (Head Start Early Childhood Learning and Knowledge Center, 2023). This type of coaching focuses on a collaborative partnership between the coach and the coachee, where they work together to identify the needs and set an action plan to meet the goal (Snyder et al., 2015). PBC is characterized by not being overly critical; rather, it focuses on working collaboratively to improve teachers' implementation. Constructive and supportive feedback is essential when the learner is considered an "active players" (Molloy & Boud, 2014, p.8). This type of coaching aims to set teachers as active learners and allow them to be responsible for their

professional growth. Thus, PBC is a valuable model that partners with teachers to extend support after training and to improve their implementation of learned skills.

### **Assessing the Training Through Implementation Outcomes**

Implementing a new training or intervention should be assessed and evaluated. Assessing the training implementation is a way to improve the quality of the training and evaluate its success. Implementation outcomes are acceptability, adoption, appropriateness, costs, feasibility, fidelity, penetration, and sustainability (Proctor et al., 2011). In this study, we focus on acceptability, appropriateness, and feasibility, as they have been used in research as guiding factors toward successful implementation (Proctor et al., 2011). Acceptability is participants' belief that a particular intervention or training is "agreeable, palatable, or satisfactory" (Proctor et al., 2011, p. 3). Appropriateness is the extent to which an intervention or training is considered a suitable and good match for participants or the community (Proctor et al., 2011). Feasibility is the possibility that training can be implemented easily and successfully (Proctor et al., 2011). These three implementation outcomes provide measures at the "personal," "social," and "practical" levels of the implementation of training or intervention (Weiner et al., 2017, p.2). Measuring the acceptability, appropriateness, and feasibility of training can provide researchers with detailed information regarding individuals' personal views on the training, its fit socially, and its functionality in the new culture.

### **Single Case Design in Special Education**

Single Case Design (SCD) has been used in special education research and many other disciplines, and it is considered a quantitative experimental research design where the participants act as their own control (Ledford & Gast, 2018). Participants in SCD research participate in baseline (control) and intervention where they receive the treatment (Ledford &

Gast, 2018). SCD has many benefits that make it suitable to be implemented in the special education field. Odom (2005) pointed out that SCD is appropriate to be used in the special education setting because it provides an individualized intervention that aligns with the individual needs, examines the intervention and its effect on different participants, assesses the intervention effect in natural settings, and it is a cost-effective design that can be used to direct larger group studies. SCD is not limited to measuring child outcomes but has been used to measure improvements in teachers' outcomes. Some studies that measured teacher outcomes using SCD are (Harjusola-Webb & Robbins, 2012; Gage et al., 2018; Brock et al., 2018; Law et al., 2019). All reported improvement in teacher behavior, knowledge, or implementation. SCD can be an appropriate research methodology when examining teachers' outcomes.

### **Ecological Validity Model**

Delivering culturally sensitive interventions or training has been a priority for many researchers working with individuals from culturally diverse backgrounds. The Ecological Validity Model (EVM) (Bernal et al., 1995) sheds light on the eight cultural dimensions that can be adapted when implementing a new intervention in a new context. The eight cultural dimensions include language, persons, metaphors, content, concepts, goals, methods, and context. Language refers to the use of a preferred language to communicate. Persons are people involved in the intervention and their relationship with each other. Metaphors are famous sayings or quotes within that culture. Content includes cultural knowledge, values, and traditions. Concepts are the extent to which intervention components are compatible with the beliefs and values of the culture. Goals refer to the purpose of an intervention and its alignment with the culture. Methods are the procedure of delivering the intervention. Lastly, context refers to the factors that may impact the individual (e.g., acculturative stress). The EVM has been used in

LatinX communities when adapting interventions (Magaña et al., 2017; O'Connor et al., 2020; Martinez-Torres et al., 2021) and showed positive outcomes that supported implementation. Regardless of the limited literature on the use of EVM in the UAE when adapting or developing interventions, EVM can guide the implementation of training in this study within the UAE communities.

### **Conclusion**

This literature review aimed to examine the special education system in the UAE, the challenges the special education teachers face, training to support autism, shared book reading strategy and spontaneous commenting, implementation support, ecological validity model, implementation outcomes, and SCD. It was necessary to explore the history of the special education system in the UAE to understand where help could be provided. The first federal law regarding individuals with special education law No. (29) of 2006 was issued 17 years ago. That shows that the special education field is a new and emerging field. After the law was issued, more changes were made to improve the lives and welfare of individuals with disabilities.

Special education teachers face many challenges, such as role ambiguity and burnout. They face many obstacles because of a lack of support and training. It is apparent that teachers are not prepared enough to keep up with the changes and the new roles they have. Lack of preparation affects special education teachers and the children they serve. A recent survey showed that early childhood special education (ECSE) teachers in the UAE need training in supporting communication for children with disabilities (Alhmoudi, 2023). Improving the training and extending support after training are vital to ensure teachers benefit from the training. In summary, this research aimed to support ECSE teachers in Abu Dhabi by implementing improving the quality professional development in the area of supporting communication skills

for young children with autism that takes into account the social and cultural values of individuals in the UAE, training ECSE teachers on the use of shared book reading strategy to encourage children's spontaneous commenting, extending support after training for by providing practice-based coaching, and testing implementing the shared book reading strategy using single case design.

## CHAPTER III

### METHOD

#### **Introduction**

This chapter introduces the research methodology used to conduct the study on the training and coaching of early childhood special education (ECSE) teachers in the UAE. It covers the foundational adaptation work, design, description of participants, recruitment, setting, instrument development, study dependent variables, measures, procedure, data collection, and data analysis.

This study included the design and tailored delivery of training on supporting communication skills of children with autism, a training gap identified by ECSE teachers in the UAE in preliminary exploratory work conducted by the author (Alhmoudi, 2023). The purpose of this study was to assess teachers' knowledge, examine coaching on teacher implementation fidelity shared book reading training, explore the rating of acceptability, appropriateness, and feasibility. Additionally, examine children's rate of spontaneous commenting on teachers' implementation fidelity.

#### **Foundational Adaptation Work**

**Cultural Considerations for Training in the UAE.** Training developed in countries other than the US should consider cultural factors. Yang et al. (2009) pointed out some factors that might influence the training, which include (a) individualism and collectivism, (b) uncertainty avoidance, (c) time orientation, (d) power distance, (e) masculinity/femininity, (f) shared assumptions about the nature of knowledge, and (g) impacts of cultural factors on cross-cultural training. It is suggested that trainees from collectivist cultures will seek to benefit the group more than themselves (Yang et al., 2009). The UAE is considered a collectivist society

that values the group over personal interests (Al Jerjawi, 2016). Therefore, teachers who participated in the training focused on the benefit of the group rather than their own goals. The second cultural factor is uncertainty and avoidance, where people in these cultures may fear the unknown and hesitate to take risks (Yang et al., 2009). The UAE and other Arab countries have a high intolerance for uncertainty (Al Jerjawi, 2016). Thus, all training and intervention steps were explained thoroughly to the teachers before the start of the study. The third factor is time orientation; in some cultures, it can be short-term or long-term oriented (Yang et al., 2009). Individuals in the UAE appreciate short-term goals and seek immediate benefits (Alteneiji, 2015). Therefore, small, realistic, and measurable goals were used to motivate teachers to continue participating in the study.

The fourth factor is power distance. The UAE scored 90 while the US 40 in the power distance index (Al Jerjawi, 2016). This confirmed that individuals in the UAE value hierarchy and people who have knowledge, such as the trainer, had more respect and advantages. The fifth factor is masculinity/femininity, which focuses on being competitive or nurturing (Yang et al., 2009). The UAE culture is neither masculine nor feminine, as it scored 50 on the masculinity index (Al Jerjawi, 2016). Teachers valued success and caring for others equally. The sixth factor is shared assumptions about the nature of knowledge, whether knowledge is objective or subjective (Yang et al., 2009). In the UAE culture, knowledge can be considered objective when supported by research-based evidence and subjective if it is only an opinion or assumption. Thus, the knowledge was derived from the trainer's experience and research. The last factor is the impact of cultural factors on cross-cultural training and challenges between the parent and the host cultures (Yang et al., 2009). Acceptance plays a considerable role in the success of the training. The host and the parent cultures must match to achieve change and remove barriers

(Yang et al., 2009). Delivering training in English while teachers speak Arabic may not be logical. Many teachers are fluent in Arabic, and providing training in English would have hindered the simplest goal of the training, which was comprehending the presented learning materials. Research has found that trainees understand the training material better when provided in their first language (Al Neaimi & Lutaaya, 2018). Therefore, the researcher delivered the training for teachers in their first language to remove some of the resistance to change when participating in the training. See Table 1 for considerations for the training in the UAE.

**Table 1**

*Cultural Factors Impact Training in the UAE*

Factor	Characteristics of individuals in the UAE	Considerations and adaptation for the training in the UAE
Individualism and collectivism	Collectivist	The training outcomes must benefit the group, not the teachers themselves. After the end of the study, teachers were encouraged to share videos and learning materials with other teachers.
Uncertainty avoidance	High level of intolerance to uncertainty	The researcher thoroughly explained all training and intervention steps to the teachers. For instance, definitions of new terminologies were provided using simple and clear language. Additionally, teachers were provided with a timeline, explanation, and expectations (e.g., if there was no immediate change in child initiations, observe

		teacher fidelity of implementation)
Time orientation	Short-term oriented	Providing small, realistic, and measurable goals encouraged the teachers to continue participating in the training. Each training module had goals stated at the beginning (e.g., By the end of this training module, you will be able to identify the benefits of reading to children in non-standard Arabic).
Power distance	Value hierarchy	The researcher worked with the development team to gain support for implementing the training. Also, the researcher, who was the trainer and the coach, was the primary source of support and information for the teachers during the training.
Masculinity versus femininity	Neither masculine nor feminine	Teachers value success and, at the same time, care for others. Therefore, the training was equally balanced between masculinity (improving personal competencies) and femininity factors (enhancing relationships with others).
Shared assumptions about the nature of knowledge	Knowledge is objective and subjective	The source of training materials was from research and individual experiences.
Impacts of cultural factors on cross-cultural training	Parent and host cultures should match	Matching the parent and host culture was done by providing teachers with training in Arabic in order to minimize stress and

resistance to change. Additionally, most books provided for children were written originally in Arabic and based on their interests.

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**Developing Training for the Cultural Context in the UAE.** The training was designed with the participant population's specific cultural and social factors in mind. Bernal et al. (1995) developed a culturally sensitive model, the Ecological Validity Model (EVM), that serves as a cornerstone when adapting and implementing interventions in different cultures. The EVM focuses on language, persons, metaphors, content, concepts, goals, methods, and context. Using the EVM model has been shown to increase the ecological and external validity of what is being implemented (Magaña et al., 2017). This study used the EVM to develop the training for ECSE teachers in the UAE with the development team. Involvement of the development team and ECSE teachers included assisting with recruitment, constructing the training modules (e.g., adding ideas, reviewing modules scripts, writing the goals of training), selecting books for the intervention, collaborating with the coach to write goals of the coaching sessions, and disseminating results. Table 2 shows the eight EVM dimensions that were adapted in the training.

**Table 2**

*Ecological Validity Model for Cultural Adaptation*

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Dimensions	Consideration in the training
Language	The training was implemented in the UAE, where Arabic is the official language. All

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Persons	<p>training and intervention materials were provided in Arabic for teachers.</p> <p>At a minimum, persons involved in the training and intervention were the trainer, ECSE teachers, children with autism, special education teachers, and school administrators. Building rapport and trust is essential when doing community-based participatory research; thus, the trainer spent time observing in the classroom, getting to know the teachers, assessing any additional needs to the training by doing interviews and building on what was already done regarding shared book reading. Additionally, the trainer was a speaker of Arabic and from the UAE, and the teachers were more willing to adapt and implement what they learned in the training when the trainer shared the same language and culture.</p>
Metaphors	<p>Different sayings from the Arabic language were incorporated into the training modules. For example, a famous saying on learning was used: "العلم في الصغر كالنقش على الحجر" or "Knowledge at a young age is like engraving on stone." This saying references the importance of learning and teaching young children, and it was used to remind teachers that the effort they put into learning in training will be carried out with the children in the future. The development team was asked during the process of constructing the training to add additional metaphors/ proverbs.</p>
Content and Concepts	<p>The training considered all factors that may influence the training in the UAE, such as collectivism (valuing the group more than the individual).</p>
Goals	<p>The training goals were written to be realistic, specific, measurable, achieved in a short time frame, and relevant to the training context. The development team was involved in reviewing the goals of the training and coaching with the researcher.</p>

Methods	The training included knowledge of the culture in the UAE. Culture in the UAE is hierarchal, and the trainer provided support and guidance to the teachers. The development team assisted in the creation of training content by reviewing the scripts and modifying them to best suit teachers' learning needs.
Context	The training for teachers was designed online to accommodate their busy schedules and enable them to complete it at their own pace. This decreased their need to travel to the training site or be restrained by a time limit.

**Community-Based Participatory Research in the UAE.** To address the research questions and examine the impact of training on teachers in the UAE, this study was guided by a community-based participatory research (CBPR) approach that collaborated with the development team in the UAE to ensure equitable involvement of the development team from the launching to the end of the study. Table 3 shows steps CBPR.

**Table 3**

*Steps to CBPR in the UAE*

Step	Description
Recruitment	The development team, including the head of the psychological and social care department, social workers, and special education teachers, participated in the recruitment procedure by nominating qualified ECSE teachers and children with autism to participate in the research.

Needs assessment	The researcher collaborated with ECSE teachers to learn about their needs regarding shared book reading strategy training. The needs were assessed by observing classroom teachers and conducting interviews.
Training modules	The development team, including Arabic-speaking special education teachers and school administrators (head of the psychological and social care department and social workers), collaborated with the researcher in constructing the training modules. Results from the needs assessment step were incorporated when constructing the modules. Five focus groups meetings were done to review the scripts and the goals of the training modules with the researcher and modify them to best fit the needs of ECSE teachers.  Additionally, ECSE teachers were involved in selecting the books with the researcher for the intervention.
Coaching	ECSE teachers partnered with the coach (the researcher) to write the goals for coaching during the intervention.
Disseminating results	ECSE teachers who participated in the study planned to share the training modules with their colleagues after the training. Additionally, the researcher sent out summary of the results to the General Secretary of Zayed Higher Organization office.

## Research Design

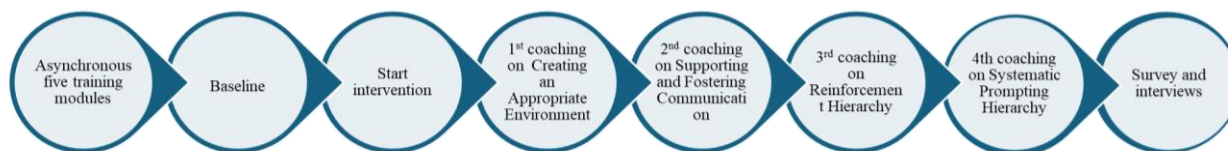
Multiple methods, including a Single-Case Design (SCD), quantitative, and qualitative design approaches, were used in the study. SCD is a quantitative research design where the participants serve as their own control (Ledford & Gast, 2018). The qualitative approach was used to understand and expand on the quantitative results using interviews and surveys. Using a multiple-method approach allowed collecting and combining numerical data and text in the same

research. This method strengthened the research and better explained the problem and the study results. See Figure 3. for the Study Flow.

This study utilized a concurrent multiple baseline design (MB) across three participants. MB design is also called a time-lagged design, where the researcher compares the baseline phase data with intervention phase data (Ledford & Gast, 2018). Employing this type of design allowed assessing the impact of coaching on implementation fidelity across ECSE teachers in the UAE and exploring children's outcomes. See Figure 2 for the study flow.

**Figure 2**

*Study Flow*



## **Participants**

This study's participants included the development team that helped design the training modules, ECSE teachers, and children with autism. The inclusion criteria for the development team were (a) working in the special education field in Abu Dhabi and (b) being fluent in Arabic. The exclusion criteria included anyone who did not work in the special education field and was not a speaker of Arabic.

The training was prepared for ECSE teachers who support children who have been identified as having a delay or disability. Non-probability sampling (purposive sampling) was utilized to recruit ECSE teachers. This type of sampling allowed the researcher to select participants with specific criteria that helped understand the problem (Merriam & Tisdell, 2015). ECSE teachers were included in the study if: (a) they serve at least one child with autism, age 3-

5 years old, (b) work at Abu Dhabi Autism Center at Zayed Higher Organization, and (c) are fluent in Arabic. All training materials were provided in Arabic, so teachers needed to be fluent in Arabic to access the learning materials. The exclusion criteria for teachers included teachers who did not work with children with autism ages (3-5) years old, were not speakers of Arabic, and did not work at Abu Dhabi Autism Center at Zayed Higher Organization.

The inclusion criteria for children included: (a) having an autism diagnosis, (b) speaking Arabic as their first language, (c) being between the ages of 3-5 years old, (d) attending ECSE program Abu Dhabi Autism Center at Zayed Higher Organization with a consented teacher, (e) at minimum uses two-to-three-word combinations to communicate in the form of (phrase, single words, or mix), and (f) showing interest in books per teacher report. The exclusion criteria included children with uncontrolled seizures or with diagnoses other than autism (e.g., deafness, blindness, Down Syndrome). The researcher collected school records on children's language and communication skills from Childhood Autism Rating Scale – 2. This scale is used to identify children with autism based on direct observation (Schopler et al., 2010). Additionally, the Emirati Child Adaptation Scale (ECAS) was used to assess communication skills (AlMuhairy et al., 2023). ECAS is designed for individuals ages from 1-18 years old to assess communication, pre-academic, listening, selfcare, self-orientation, motor, social, life, and health and safety adaptive behavior skills. ECAS reported to have a mean of 100 and standard deviation of 15 (AlMuhairy et al., 2023). Additionally, mean length of utterances in words were collected from qualified children before the start of the study following Khater and Shaalan (2007) work on collecting and calculating language samples for children in the gulf region. Teachers reported in the provided survey whether the selected children had the ability to spontaneously comment or not.

## Recruitment

The center has 14 classrooms and 20 ECSE teachers serving 56 students. Out of the 14 classrooms, only three were eligible for the study. The development team, such as the social worker and special education teachers, nominated ECSE teachers and children to participate in the research. The social worker delivered recruitment papers to the teachers in their classrooms, including information regarding the study's purpose, the training topic, outcomes, length of the training and intervention, and the rights of the participants. Teachers who were interested signed the informed consent and gave it to the social worker. Moreover, the researcher met via teams with the nominated teachers who agreed to participate to introduce herself, go over study components, and answer any questions. Additionally, teachers were informed that participating in the study is voluntary and will not affect their employment.

Four child participants were recruited using consent forms. The social worker sent recruitment letters home to eligible families. Teachers completed a survey about children's interests related to books and reading. Moreover, all consent forms signed by the families were collected by the social worker and given to the researcher. The demographics of all participants can be found in Tables 4, 5, and 6.

**Table 4**

*Development Team Demographics*

Role	Nationality	Age	Education	Years of Experience
Head of psychological and social care department	UAE	45-54	Bachelor's	20 years

Senior psychologist	UAE	45-54	Bachelor's	20 years
Social worker	UAE	27-34	Bachelor's	5 years
Special education teacher 1	Egypt	45-54	Bachelor's	16 years
Special education teacher 2	Jordan	27-34	Bachelor's	9 years

**Table 5**

*Early Childhood Special Education Teachers' Demographics*

Participants	Gender	Nationality	Age	Education	Number of Students Working With	Years of Experience
Participant A	Female	Egypt	27-34	Professional Diploma in Special Education	3	10
Participant B	Female	Iraq	45-54	Bachelor's in psychology	3	17
Participant C	Female	Egypt	35-44	Academic Diploma in Autism and Professional Diploma in Autism Special Education	4	14
Participant D	Female	UAE	35-44	Bachelor's Mathematics	3	10

**Table 6***Children's Demographics*

Participant	Gender	Nationality	Age	Year of the report	SES	Disability	<sup>a</sup> General Description of Social, Communication, and language Skills	<sup>a</sup> The Childhood Autism Rating Scale (CARS2)	<sup>a</sup> Emirati Adaptive Behavior (Communication skills)	<sup>b</sup> Mean Length of Utterances in Words (MLU-W)
Child A	Female	UAE	5 years old	2023	Middle class	Autism Spectrum Disorder	Lack of using eye contact, facial expressions, and body postures to engage in social interaction with others  Has the ability to speak using two words	39.5	32	1.4
Child B	Female	UAE	5 years old	2023	Middle class	Autism Spectrum Disorder	Lack of using eye contact, facial expressions, and body postures to	31.5	54	1.28

Child C	Male	UAE	5 years old	2021	Middle class	Autism Spectrum Disorder	engage in social interaction with others. Can speak using two to three words. Difficulty forming any social relationships with peers. His expressive language is not appropriate for his age.	38	12	1.02
Child D	Female	UAE	5 years old	2022	Middle class	Autism Spectrum Disorder	Lack of using eye contact. Her expressive and receptive language are not appropriate for her age.	40	18	1.24

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<sup>a</sup>Assessments reported in child comprehensive diagnostic report when admitted to the program. <sup>b</sup>Collected by the researcher before the study started.

## **Children's Demographics**

### ***Child A***

Child A is an Emirati 5-year-old female. She was diagnosed with autism by the general doctor. According to the program report, she had challenges in making eye contact, facial expressions, and body posture to engage in social interactions with others. Her Childhood Autism Rating Scale (CARS2) score was 39.5, which indicated that she has autism. Moreover, the Emirati Adaptive Behavior score for communication skills was 32, which showed a delay in this skill. Additionally, the Mean Length of Utterances in Words (MLUw) was 1.4 and had the ability to speak using two-word utterances (e.g., عبدالله ولد, Abdulla boy). Child A received weekly two individual occupational therapy sessions, one sensory therapy session, and three speech and language therapy sessions.

### ***Child B***

Child B is an Emirati 5-year-old female. She was diagnosed with autism by the general doctor. According to the program report, she had challenges in making eye contact, facial expressions, and body posture when talking and interacting with others. Her CARS2 score was 31.5, which indicated that she has autism and needed support. Moreover, the Emirati Adaptive Behavior score for communication skills was 54, which showed a delay in this skill. The MLUw was 1.28 and had the ability to speak using two-word utterances (e.g., يلعب كرة, play ball). Child B received weekly three occupational therapy sessions and two speech and language sessions.

### ***Child C***

Child C is an Emirati 5-year-old male. He was diagnosed with autism by the general doctor. According to the program report, he had challenges forming any social relationships with peers, and his expressive language was inappropriate for his age. His CARS2 score was 38,

which indicated that he has autism and needed support. Moreover, the Emirati Adaptive Behavior score for communication skills was 12, which showed a delay in this skill. The MLUw was 1.02 and started to use two-word utterances (e.g., أبا حمام, want bathroom). Child C received weekly three occupational therapy sessions and three speech and language sessions.

### ***Child D***

Child D is an Emirati 4-year-old female. She was diagnosed with autism by the general doctor. According to the program report, she had challenges using eye contact, and her expressive and expressive language was inappropriate for her age. Her CARS2 score was 40, which indicated that she has autism and needed support. Moreover, the Emirati Adaptive Behavior score for communication skills was 18, which showed a delay in this skill. The MLUw was 1.24 and could use want (أبا) to request things (e.g., أبا كوكيز, want cookies). Child D received weekly three occupational therapy sessions and three speech and language sessions.

### **Attrition**

At the beginning of the study, the researcher recruited 4 ECSE teachers and 4 children. However, Child D dropped out before the start of the intervention sessions due to relocation. Therefore, the researcher had to inform the participating teacher about termination from the study. Resources such as books and training materials remained available for the teacher to use in the future.

### **Setting**

The study setting was in the Emirate Abu Dhabi in the UAE. Abu Dhabi is the capital of the UAE and occupies 86% of the UAE area, making it the largest Emirate of all seven Emirates (Sharpley, 2002). Selecting the study settings was based on the researcher's previous connections

when conducting previous research. Zayed Higher Organization for People of Determination (ZHO) is a governmental organization that provides services to children with all kinds of disabilities (e.g., autism, intellectual disability, visual impairment, and deaf and hard of hearing). Additionally, they provide early intervention services, assessments, speech therapy, vocational programs, physiotherapy, and functional therapy. Abu Dhabi Autism Center, operated by Zayed Higher Organization, was selected as the study site.

## **Implementation Strategy Development**

### ***Professional Development (PD) on Supporting Communication***

In partnership with the development team, the training modules were created and uploaded to OneDrive to accommodate teachers' busy schedules and have them complete them at their own pace. The researcher designed five training modules, and teachers engaged with the learning materials for 30-35 minutes per module for two weeks. Additionally, pre-and posttests were implemented to check the participants' knowledge before and after the training on the first four training modules. Moreover, the researcher followed up with participants by the end of each training week using WhatsApp, phone calls, or visits to the classroom to answer questions and ensure the participants were able to complete the training modules efficiently.

The learning materials for the training modules were developed following Guskey's (2000) considerations of professional development. According to Guskey (2000), training should have clear goals for the participants. The training modules' goals were written to be specific, measurable, attainable, realistic, and time-based. Having clear goals allowed the participants to visualize the gains of the training. The training goal was to train teachers on the strategies they need to support children's spontaneous commenting and to implement shared book reading strategy with fidelity. For example, teachers learned to apply strategies such as setting up the

environment and using both prompting and reinforcement hierarchies to support child spontaneous commenting during shared book reading.

This training was also driven by Guskey's (1986) modified professional development and teacher change framework. Coaching support should be provided to observe the training's effect. Consequently, teacher classroom practices and children's outcomes may change, leading to sustained change in teachers' attitudes, beliefs, and knowledge. Figure 4 shows the training development process based on Guskey's theory.

## **Summary of the Professional Development**

### ***Creating an Appropriate Environment***

This training module covered the definition of classroom environment (Roskos & Neuman, 2011), the different ways to organize the physical space (e.g., separating the reading area from other areas in the classroom) (Fleury, 2015; Kabot & Reeve, 2010), child and teacher placement, flexible seating (e.g., yoga mats, bean bag chairs, synthetic grass) (Horowitz, 2018), honoring children's interests and choices (e.g., choosing books with favorite characters) (Fleury, 2015), minimizing distraction to increase engagement (e.g., removing highly preferred toy from the reading area) (Fleury et al., 2021), and reading in modern standard Arabic versus non-standard Arabic (Shendy, 2019). Teachers had the opportunity to assess their learning by completing the pre and posttest in module 1.

### ***Supporting and Fostering Communication***

This training module covered ways to offer children with autism opportunities to communicate and expanding on the child's communication attempts. In this training module, teachers learned about the definition of modeling (Cox, 2013). Modeling is defined as the demonstration of a specific behavior that results in the child imitating that behavior and learning

the targeted skill or behavior (Cox, 2013). An example of modeling in shared book reading can be a teacher modeling initiating comments (Fleury et al., 2021). Teachers learned about different strategies to offer communication opportunities, such as asking open-ended questions about the book (e.g., "What do you see?"), commenting on child responses (e.g., "I like cats!") (Douglas & Gerde, 2019) and taking turns to communicate (United States Department of Education, n.d.). Turn-taking in shared book reading is when the teacher and the child take turns commenting on the book or matching scanned photos of animals while reading. Expanding on child communication attempts is key to encouraging engagement and spontaneous commenting during shared book reading. Expanding is defined as adding more information to the child's verbal communication (United States Department of Education, n.d.). For example, if a child said "bird," the teacher could expand on the child's verbal communication and say, "Red bird." Expanding on the previous examples included adding new information about the color and size of the bird to expand on the child's knowledge. It is essential when expanding that teachers take into consideration child prior knowledge (United States Department of Education, n.d.). For children with autism in the center, it was important to keep the newly added information simple and less complex. Teachers had the opportunity to assess their learning by completing the pre and posttest in module 2.

### ***Reinforcement Hierarchy***

This module covered the reinforcement hierarchy (social to tangible) to align with the focus of this study on natural and less intrusive strategies when working with children with autism. This module provided teachers with the definition of reinforcements which was providing a learner with something when a desired behavior happens to increase the likelihood of observing that behavior again in the future (Adibsereshki et al., 2015) and different types of

reinforcements (e.g., natural, social, and tangible) (Florida Atlantic University, n.d.). Definitions of the reinforcements and examples were provided to enhance the learning of teachers (e.g., a natural reinforcement is a positive behavior of the child where it is reinforced naturally) (Florida Atlantic University, n.d.). An example of natural reinforcement, a child says "Ball," and an adult gives the ball to the child. Access to the ball reinforces and increases the likelihood of the child requesting a "ball" in the future. Social reinforcement can include facial expressions, physical contact, and vocalizations (Vollmer & Hackenberg, 2001). Tangibles are defined as delivering a highly preferred food item or toy when positive behavior occurs (Stephens et al., 2023). Choosing the appropriate reinforcer is essential when the goal is to increase a specific behavior, thus; teachers learned about how to select the right reinforcer when working with children (e.g., a child may prefer tickling over receiving a piece of cookie) (DeLeon et al., 2014; Florida Atlantic University, n.d). The teachers assessed their learning by completing the pre-posttest.

### ***Adding Support: Systematic Prompting Hierarchy***

This training module covered materials on prompting hierarchy. Teachers learned about pausing and giving children with autism time to answer is a type of support to encourage communication. Time delay is defined as the time between the prompt delivery and the response to the prompt (Walker, 2008). With time delay, teachers learned about pacing in teaching. Pacing in teaching is matching the speed of teaching with the learner's abilities (Hoadley, 2003). Time delay and pacing were taught to the teachers to utilize during shared book reading (e.g., some children may require more than 5s or less than that time to comment). Additionally, teachers learned about least to most prompting, which is defined as starting with less intrusive prompts and moving to more intrusive prompts if the child does not respond to a specific task or command (Jones & Zarcone, 2014). Least to most prompting includes environmental cues,

verbal, gestural, modeling, partial physical, and full physical. The teachers learned the definitions of all prompting hierarchy (environment, verbal, gestural, modeling, partial physical, and full physical) with examples and how to apply them during shared book reading. For example, verbal prompting can be defined as direct prompting or telling the child exactly what to say or do (e.g., "Say bird") and indirect prompting is defined as cuing the child to do or say something (e.g., "What do you see?") (Meadan et al., 2013). Fostering independence and providing less intrusive prompts were also goals of this study, so teachers learned about utilizing the environment, such as using visual support (Ruble & Akshoomoff, 2010). Types of visual supports can be used when working with children with autism (e.g., real objects, photographs, line drawings, and words) (Meadan et al., 2011). Similar to the previous models, the teachers assessed their learning by completing the pre-posttest.

### ***Shared Book Reading Strategy to Increase Spontaneous Commenting***

This training module provided teachers with a video demonstrating the shared book reading strategy. The teachers supported children's engagement and participation during storybook reading by teaching them to comment. Many books used in studies to support children's communication and language use were translated from English to Arabic or used regardless of their insensitivity to the host culture. For instance, the wordless picture book "Frog, Where Are You?" (Meyer, 1969) was usually used with Arabic-speaking children. However, none of the animals, characters, or scenes were relevant or familiar to children in the region. Thus, the researcher, with the ECSE teachers, selected four culturally responsive books that were (a) originally written in Arabic, (b) age-appropriate, (c) similar in length (14-26 pages), and (d) aligned with child interest. A Post-it note was used to cover some pictures in the books during the intervention sessions to provide children with opportunities for spontaneous commenting.

Additionally, to increase engagement and utilize the environment to offer the child opportunities for spontaneous comment, a box with tools was created by the researcher and delivered to all teachers. This box included books with Post-it that teachers can place on different pages of the books, scanned pictures of characters, scenes, and objects from the selected books to be used for matching, placing on the wall, and stocking inside plastic jar. Also, coloring pages for children were created from the scanned photos. Materials for each story were placed in different envelopes and delivered to the three ECSE teachers to be used during the intervention. The materials were kept in the classroom after the study ended.

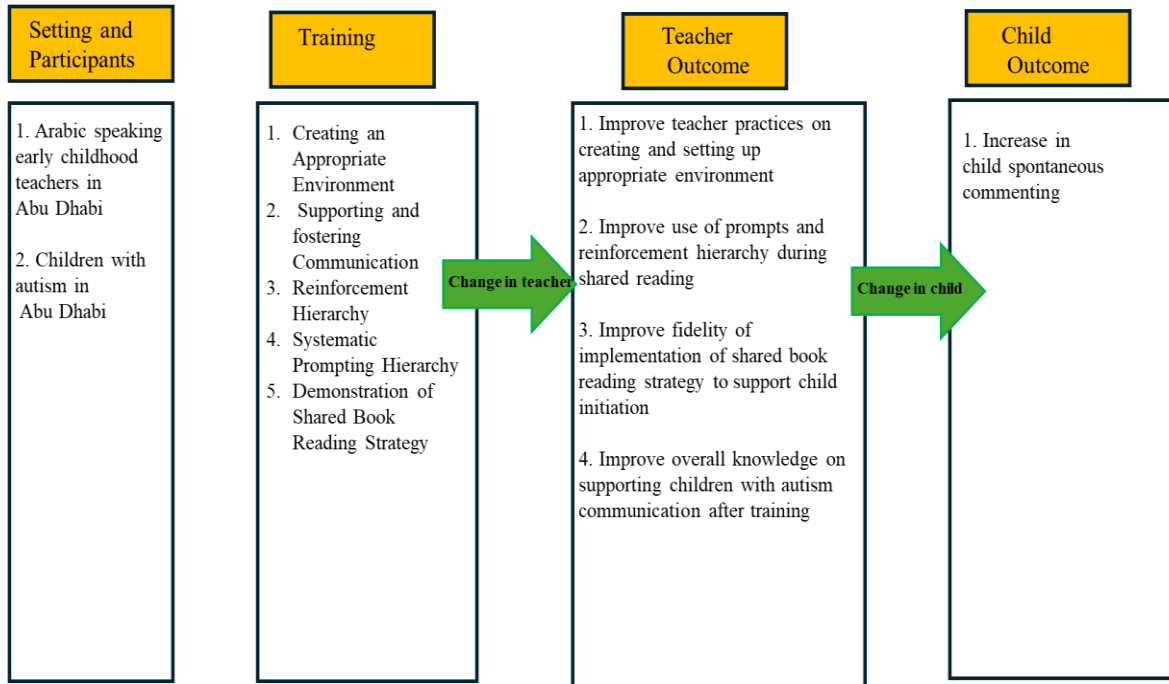
After selecting the books, the teachers received training from the researcher on using the shared book reading strategy to encourage children to spontaneously comment during reading time. The researcher uploaded a video of herself incorporating all the strategies learned in the first four training modules to demonstrate the shared book reading strategy. The video was edited using Adobe Premiere Pro and uploaded to OneDrive. After watching the video, the teachers started the baseline. Table 7 shows the components of teacher training. Table 8 shows the selected books used in the study. An example of a lesson plan shared with teachers can be found in APPENDIX G

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selected books used in the study. An example of a lesson plan shared with teachers can be found in APPENDIX G.

**Figure 3**

*Training Development Process Graphic*



### **Iterative Design of the Professional Development Modules in Partnership with the Development Team in the UAE**

The iterative process of the development of the training modules included three steps. The development team provided written feedback and participated in a total of five focus groups meetings, one of them was done via Microsoft Teams due to inclement weather. First, the researcher wrote the script of module 1 in Arabic. Second, after writing the complete draft of module 1, the development team reviewed it, and feedback was delivered during the meeting. Third, changes were incorporated after receiving the feedback on the module 1 draft. Lastly, the

final version of module 1 was recorded and uploaded on OneDrive. Modules 2, 3, 4, and 5 followed a similar iterative process.

**Table 7**

*Components of Teacher Training*

Components	Description
Before Book Reading	<p>Teachers learned about the different ways to arrange the environment to maximize child engagement and minimize distractions during shared book reading. For example, selecting a specific area in the classroom for reading. If an assigned reading area is in the classroom, flexible seating options should be considered. For example, sitting at a regular desk, bean bag chair, on the floor (typical in the UAE culture), on a rocking chair, standing, or any preferable and available seating option for the child in the classroom. Teachers should use their best judgment when offering or not seating options to the child, as some children perform better when sitting at their regular desks. Seating arrangements for the child and teacher can be face-to-face, and books written in Arabic should be turned from right to left.</p>
Preparation of intervention materials and setting up the environment	<p>All training materials (e.g., books with post-it, scanned pictures from the books) were prepared by the researcher for teachers to use during the intervention. Teacher could change the placement of the Post-it and put it on different pages.</p>
Book selection and offering choice	<p>Teachers offered children the choice between the books to read during shared book reading. For example, placing all different books on the table and asking the child to select one.</p> <p>After selecting a book, the teacher selected one or more engagement tools to be used during the shared book reading time.</p>
During Book Reading	

Preview the book	<p>Teachers familiarized the child with the book. For example, the teacher read the title and had the child point at it, talk about characters or drawings on the cover page.</p>
Spontaneous commenting during shared book reading	<p>Children had opportunities to comment during shared book reading. Teacher and child took turns commenting about the pictures under the Post-it notes, or the ones hung on the wall. In addition to that matching and coloring pictures or taking turns to place the scanned pictures in the plastic jar were also other strategies to encourage children to spontaneous comment. Children were taught to use these materials and were prompted when they did not respond.</p>
Level of support to child commenting	<p>Teachers learned about how to support children' spontaneous commenting. Least to most support was used. For example, if the child did not comment after 5s, the teacher showed a similar picture on the wall or on the matching board, indirect verbal prompt (e.g., what do you see?), use gestural prompt (e.g., point to the bird), model the correct response, encourage the child to repeat (e.g., can you say a red bird?), and expand on the child's answer (e.g., Red bird on tree). If the child did not respond, remove the picture from the wall, show the child the picture and say, " Red bird", point to the same picture in the book " Red bird", and stick the picture back on the wall.</p> <p>Pacing: Teachers learned to accommodate each child's needs. For example, some children needed 5s to respond, and some needed 7s to respond.</p>
Reinforcements	<p>Part of keeping children with autism engaged and motivated during shared book reading was to use reinforcements. For example, teachers learned to use hierarchical reinforcements. Least to most reinforcement was used. For example, social (e.g., you are correct, he was crying! high five or pat on the shoulder) or tangible praise (e.g., edible, stickers, stamp on the hand) after each spontaneous comment.</p>

Pacing: Teachers learned to attend to the child's pacing and choose the most appropriate reinforcement. For example, some children preferred social reinforcement over tangible. Thus, providing physical reinforcement to the child was more appropriate and rewarding.

After Shared Book Reading

Story Time Closer  
 The teacher ended the story by saying (e.g., all done, the end). The teacher asked the child to put the book in the box. Also, the teacher praised the child for sitting, listening, and participating during the storybook reading (e.g., Fatima, I like how you were sitting nicely and commenting on the story!)

**Table 8**

*List of Books Used in the Intervention*

Title	Writer	Illustrator	Publisher	Age	# of pages	Written originally in Arabic	Theme
The Fourteenth Symphony (السمفونية الرابعة عشرة)	Nahed Alshawa	Sanaa Qoli	Noon House	3-6	24 pages	Yes	Celebrating Eid
What else, Salman? (ماذا بعد يا سلمان؟)	Nahed Alshawa	Imad Alwahabi	Noon House	3-6	24 pages	Yes	Sleepover at Grandmother House
Where is Jad? (أين جاد؟)	Fatima Alturk	Zeina Maedad	Asalah	3-6	16 pages	Yes	Parts of the House

Friends and transportation (الأصدقاء وسائل التنقل)	Lisa Charlesworth	NA	Hachette Antoine Disney	3-5	16 pages	No	Vehicles
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## Teacher Coaching

Guskey (2000) emphasized that training should be "extended, appropriately spaced, or supplemented with additional follow-up activities to provide the feedback and coaching necessary for the successful implementation of new ideas" (p.23). Therefore, the training included practice-based coaching (PBC) to support the implementation of the shared book reading strategy. This type of coaching is cyclical and includes three components: shared goals and action planning, focused observation, and feedback (Snyder et al., 2015). In the first cycle, the coach, in partnership with the teacher, assessed needs by gathering data, setting a specific, measurable, achievable goal within a specific time frame, and creating an action plan to meet the goal. Assessing needs was done by observing and interviewing the teachers. To give a brief example, in one of the coaching sessions, the coach and the teacher wrote a goal to improve the teacher's setting up the environment before the start of the session. In the second cycle of the coaching, focused observation was conducted by the coach to gather information about the identified goal in the first cycle. For example, if the goal of the coaching session was to improve the setting of the environment, then the observation focused specifically on that area of the intervention. Observing and coaching teachers in this study was at the setting and then by reviewing the recorded videos of their implementation of the shared book reading strategy to write the coaching letter. Using the video recording method allowed multiple viewings and ensured specific and constructive feedback. The last cycle of coaching was providing feedback. PBC provides performance feedback on implementation fidelity (Snyder et al., 2015). In this

process, the coach shared areas of strengths and improvements with the teacher. Additionally, support strategies were provided for teachers (e.g., additional materials and resources, problem-solving conversations, or role-play) (Head Start Early Childhood Learning and Knowledge Center, 2023). Written feedback was sent to the teacher within 24 hours or less via WhatsApp, and the coach went over the feedback in the next scheduled meeting. In this study, the teachers received four coaching sessions delivered by the coach during the intervention phase. The four coaching sessions were delivered on the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup>, and 12<sup>th</sup> intervention sessions. The coaching sessions focused on supporting teachers on the four topics of the training modules (creating an appropriate environment, supporting and fostering communication, reinforcement hierarchy, and adding support: systematic prompting hierarchy). Cycles 1, 2, and 3 were repeated for each coaching session. Observations continued to assess the fidelity of implementation. Table 9 shows the PBC protocol. The focused observation sheet adapted from Head Start Early Childhood Learning and Knowledge Center can be found in APPENDIX F. Coach fidelity checklist can be found in APPENDIX G.

**Table 9**

*PBC Protocol*

Cycle	Coach role
Building a collaborative coaching partnership	<p data-bbox="911 1493 1175 1535">Establishing rapport</p> <ul data-bbox="813 1545 1325 1803" style="list-style-type: none"> <li data-bbox="857 1545 1325 1654">• During this session the coach introduced herself and the purpose of the coaching.</li> <li data-bbox="813 1654 1325 1803">• The coach shared about the purpose of the coaching and asked the teacher about their experience related to shared book reading.</li> </ul>

### Needs Assessment

- The coach did needs assessment by observing and interviewing teachers.  
Example questions:
  1. What do you know about shared book reading?
  2. How do you read to children in your classroom?
  3. In what languages do you read to children in your classroom?
  4. What are things you find challenging when arranging and setting the reading environment?
  5. What do you need help with when doing shared book reading strategy?
- The coach took notes on a sheet of paper and highlighted important information.

### Cycle 1 shared goals and action planning

#### Collaborative goal setting

- The coach collaborated with the teacher on identifying a goal to work on when implementing shared book reading.
- The goal was (SMART) specific, measurable, achievable, relevant, and time-based.

Example of SMART goal: “By the end of third intervention session, Teacher A will deliver at least 80% during the observation the social reinforcer immediately to the child after spontaneously comment on the book.”

#### Action plan

- The action plan to remember immediate delivery of the reinforcer was to write on a sticky note the word “REINFORCER” in capital letters and a picture of child and teacher doing high five placed it on the table.

## Cycle 2 focused observation

- Before focused observation session
  - The coach made sure to set the tripod and turn on the camera.
    - The coach had a focused observation sheet and a pen ready to take notes.
- The coach briefly reviewed the goal of the observation with the teacher.  
For example, “the goal of this observation is to help you achieve the goal which is delivering the reinforcer immediately after the child spontaneously comment on the book.”
- The coach filled out the observation focus on the sheet.
- During focused observation session
  - The coach instructed the teacher to start implementing the shared book reading strategy.
  - The coach focused specifically on the delivery of the reinforcer during the observation.
    - Live coaching
  - The coach provided support to the teacher during the observation (e.g., modeling the strategy, verbal, visual or gestural prompting, or offering a suggestion)
  - The coach filled out the section “What I observed” on the observation sheet.
- After the end of the observation the coach thanked the teacher.
- After focused observation session
  - The coach reviewed the recorded video of the teacher’s implementation at their own time.
    - The coach added more to the section “What I observed” and complete the section “What I want to share” and “Follow up needed”

### Cycle 3 feedback and follow up

- Feedback was sent to teachers via WhatsApp within 24 hours of the observation.
    - Debriefing meeting
  - The coach thanked the teacher for their hard work on implementing shared book reading strategy.
  - The coach allowed the teacher to reflect first on their performance.
  - The coach went over feedback by summarizing what happened in the observation.
  - The coach shared areas of strengths to the teachers and gave example “You did very well on delivering the reinforcer immediately when your student spontaneously commented.”
  - The coach went over areas for improvement (e.g., I saw you getting a little overwhelmed trying to remember the steps of the strategy. It is fine to feel that way and I am here to help you).
  - The coach provided the teacher with a simplified version of the shared book reading strategy steps and suggest practicing during the day.
  - Coach asked the teacher if they had any questions or challenges.
  - The coach ended the meeting and thanked the teacher for their time.
- 

### **Dependent Variables**

#### *Teachers’ Outcomes (Primary Research Questions 1 & 2)*

*How do early childhood special education teachers improve their knowledge of shared book reading after training?*

***Is there a functional relation between the implementation of practice-based coaching after an initial training and the outcome of teachers' fidelity of intervention implementation?***

Participating in the training on supporting communication skills for children aimed to achieve four essential outcomes: (a) improve teacher practices on creating and setting up an appropriate environment, (b) improve the use of prompts and reinforcement hierarchy during shared book reading, and (c) overall improve the fidelity of implementation of shared book reading strategy to support child spontaneous commenting.

***Implementation Outcomes (Secondary Research Question 1)***

***How will ECSE staff rate the acceptability, appropriateness, and feasibility of the training on using shared book reading to support spontaneous commenting for children with autism?***

Implementing the training in the UAE aimed to examine teachers' ratings of (a) accessibility, (b) appropriateness, and (c) feasibility. Additionally, ECSE perceptions on the training.

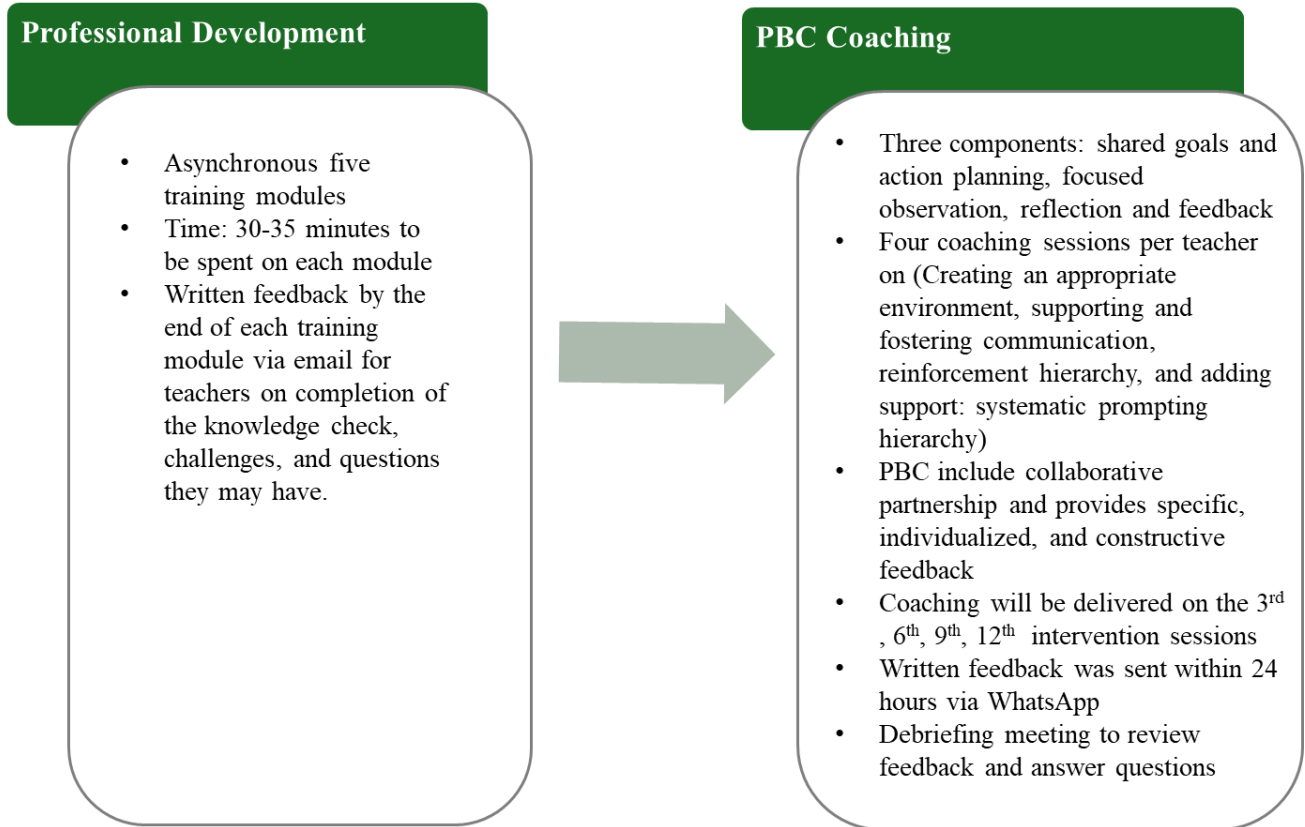
***Child Outcome (Secondary Research Question 2)***

***Is there a functional relation between the rate of spontaneous commenting during shared book reading after teachers receive coaching to deliver a shared book reading activity?***

After completing the five training modules, the rate of children's spontaneous and prompted comments was counted during shared book reading.

**Figure 4**

*Implementation Support Strategies*



**Measures**

Data was collected on teachers' knowledge, teacher fidelity of implementation, acceptability, appropriateness, feasibility, and perceptions of the training, and children's rate of spontaneous and prompted commenting.

***Primary Research Question 1 (Dependent Variable: Teacher Knowledge)***

As part of Guskey's theory of teacher change (1986), change in teacher knowledge should be observed after professional training. Therefore, pre-and posttests scores were compared to examine changes in knowledge before and after participating in professional

development. Data was collected from the four training modules that teachers completed in the first two weeks of this study. Percentage scores were calculated and reported.

***Primary Research Question 2 (Dependent Variable: Teacher Fidelity of Implementation)***

Another important outcome of this study was to assess teachers' implementation fidelity. Single Case Design (SCD) was used to measure the fidelity of implementation. The researcher created a fidelity checklist that focused on strategies and considerations to engage and encourage children with autism to spontaneously comment during shared book reading.

Teachers received practice-based coaching (PBC) during their implementation of the shared book reading strategy to support children's spontaneous commenting. In PBC, teachers were observed at minimum four times during the implementation of the strategy. After collecting all baseline data, coaching sessions started. Coaching sessions were delivered on the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup>, and 12<sup>th</sup> intervention sessions for all teachers. The coaching sessions focused on improving the setting of the environment during shared book reading, fostering and supporting communication, improving the delivery of reinforcements, and prompting hierarchy. During the PBC, the coach and the teacher were involved in three cycles: shared goals and action planning, focused observation, and reflection and feedback (Snyder et al., 2015) to collaboratively assess the teacher's needs, observe, and provide feedback. The fidelity checklist included ten items with a possible 40 points to be earned by the teachers. The percentage of fidelity of implementation was calculated by  $(\text{points earned} / \text{total points}) * 100$ . The fidelity checklist can be found in APPENDIX A.

***Secondary Research Question 1 (Dependent Variable: Implementation Outcomes)***

Acceptability Intervention Measures (AIM), Intervention Appropriateness Measures (IAM), and Feasibility Intervention Measures (FIM) rates were measured quantitatively and be

collected from ECSE staff using the adapted valid and reliable (Weiner et al., 2017) implementation outcomes measures. The scale was designed to be simple and easy to understand, apply in any setting, and available online for researchers to use in their studies (Weiner et al., 2017). Each of the three implementation outcomes has four items to be rated from 1 - 5, with one being completely disagree and five completely agree. Since the scale was developed in English, was translated into Arabic first and then back-translated to ensure the meaning of statements remained the same. The adapted AIM, IAM, and FIM was created using the UO Qualtrics website for teachers to complete online. The measures can be found in APPENDIX C.

A 15–20-minute semi-structured interview format was used to qualitatively measure ECSE staff perceptions of the training. In this type of interview, the questions were written in structured and less structured formats, specific information was sought from the participants, and most of the questions in the interview were designed to investigate a problem (Merriam & Tisdell, 2015). The interviews were conducted in person and by phone depending on participants' availability. The interview aimed to examine ECSE staff perceptions of the training, use of the new knowledge, and challenges and areas of improvement for future implementation. To analyze the interviews, the researcher transcribed all interviews and started to code using the open coding method. Second, in the open coding method, the researcher wrote down ideas, keywords, and comments from the transcripts. Last, after assigning codes, the researcher constructed categories or themes and grouped similar ideas and comments together. The interview questions can be found in APPENDIX D.

***Secondary Research Question 2 (Dependent Variable: Child Outcome)***

Examining children's communication was critical in this study to investigate the functional relation of teacher fidelity of implementation on children's spontaneous commenting during shared book reading. Commenting was defined by verbal sharing. Comments in this study during shared book included labeling characters (e.g., cat), objects (e.g., airplane), actions (e.g., running), feelings (e.g., sad), describing (e.g., sweaty), or asking (e.g., where did it go?) An example of spontaneous commenting includes using spoken language to comment during shared book reading within 5 seconds and or more based on the child's commenting pace. Single words (e.g., play) or combined words (e.g., beautiful horse) were accepted as correct spontaneous commenting. Approximations (e.g., ba for bottle) were not accepted. A non-example of spontaneous commenting was when a child commented when prompted by the teacher to comment during reading time (e.g., imitating the teacher, or animals' sounds).

The rate of spontaneous commenting by children was operationally defined as the number of occurrences to spontaneously comment by the child after providing time delay (e.g., 5s) during shared book reading. The rate of spontaneous commenting was measured by dividing the number of occurrences by the number of intervals. The terminal metric for this measure is the rate of spontaneous commenting during shared book reading. Children had multiple opportunities in each session to spontaneously comment about the book. Children commenting with teacher prompts was also measured using the same calculation. Prompted commenting was operationally defined as the support provided by the teacher (e.g., visual support, indirect verbal, direct verbal, gestural, modeling, partial physical, and full physical) to the child after providing time delay without spontaneously commenting.

The researcher collected data in the classrooms twice per day in the morning and afternoon after asking permission from the participating teachers. Intervention, observation, and data collection happened on the same day and time each week for all participants.

To measure the rate of spontaneous and prompted commenting during shared book story reading, a scoring rubric was created by the researcher to observe the rate of spontaneous and prompted commenting during baseline and intervention sessions. The scoring rubric can be found in APPENDIX B.

### ***Quality of the Trainer and Coach***

Assessing the quality of the trainer and coach was essential to this study. Trainer quality was measured on six skills provided by Albrahim (2020) to support learners' online learning. The six skills that a teacher or trainer needs to consider are the use of pedagogical, content, design, technological, management, institutional, social, and communication skills. The researcher developed a checklist with these competencies to be completed by the researcher and one Arabic-speaking coder who had access to the OneDrive training files and the recorded training videos. The checklist can be found in APPENDIX E. Fidelity of coaching implementation was measured on the three components of practice-based coaching (shared goal and action planning, focused observation, and feedback and follow-up) and was completed by the researcher and one Arabic-speaking coder who had access to the coaching recorded videos. The coaching implementation fidelity checklist can be found in APPENDIX H.

### **Procedures (Testing of the PD Modules Using SCD)**

This part of the study adapted D'Agostino's et al. (2020) study of shared book reading to increase spontaneous commenting for children with autism. There were some adaptations made, such as different book selections, the target behavior measured, and the engagement materials

used. The books selected for this study were originally written in Arabic, similar in length, age-appropriate, and based on child interest. The teachers worked with the researcher to select the books for the intervention. Another adaptation to this intervention was the target behavior. In D'Agostino's et al. (2020) study, children were taught to combine commenting and lifting the Post-it. However, spontaneously commenting on the story was the main target behavior in this study. Last, to encourage children to spontaneously comment during shared book reading, a Post-it was used to cover some photos in the story to encourage the child to remove the Post-it and comment on the covered part of the page. A matching board with scanned photos, scanned photos placed on the wall, a plastic jar to stack the scanned photos, and coloring pages with crayons were also provided to support the spontaneous commenting.

### ***Baseline***

All teachers started baseline sessions at the same time, but the number of sessions varied between them. During the baseline phase, the teachers were asked to read to children, keeping in mind the content of the training. No feedback was given from the researcher. During this phase, stability in level and trend were assessed before the researcher introduced the intervention to Participant A. According to Kratochwill et al. (2010), a minimum of three data points should be collected per phase to meet the standards with reservations. Participant A was in the baseline phase for four sessions, and four data points were collected on the fidelity of the implementation. Once participant A had stable baseline data, the intervention was introduced. A similar procedure was applied to Participants B, and C.

### ***Intervention***

Before the start of the intervention sessions, the researcher prompted the teachers to rewatch the demonstration video in module five as a refresher. The researcher staggered the start

of the intervention and continued to collect baseline data for Participants B and C. Participant A was the first to start implementing shared book reading strategy in the intervention. After a change in behavior was observed and baseline data was stable for the other participants, Participant B started the intervention. A similar process was implemented for Participant C. During the intervention phase, the teachers read a book to the child and implemented steps learned in the training. To encourage spontaneous commenting, the teacher and the child took turns commenting about the story using engagement tools created by the researcher. When the child did not comment on their own within 5s or based on their response pace, the teacher followed the prompting hierarchy procedure learned in the training. All teachers received four coaching delivered by the research on sessions 3, 6, 9, and 12 of the intervention. The teachers collaborated with the researcher to write the goals of each coaching session using PBC cycles. Teacher fidelity of implementation data and the rate of child spontaneous and prompted commenting were collected.

### ***Randomization***

To improve the internal validity of the design, teachers were randomly selected as Participants A, B, or C using the randomizer tool ([www.randomizer.org](http://www.randomizer.org)) (Urbaniak & Plous, 2013). This tool allowed for different ways for participants to be randomized. Therefore, the participants were selected as A, B, or C according to the result of the randomizer tool.

### ***Inter-observer Agreement (IOA)***

Inter-observer agreement (IOA) was collected for at least 20% of the observations across all phases, which included baseline and intervention (Kratochwill et al., 2010). The researcher and an independent observer collected an agreement on the percentage of implementation fidelity, fidelity of the coach, quality of the trainer, and children spontaneous and prompted

commenting from the recorded videos. IOA was calculated by  $(\text{agreements} / (\text{agreements} + \text{disagreements})) * 100$ . The researcher and an Arabic-speaking independent observer collected each other's IOA data. An 80% agreement rate across observers was set as the criterion for acceptable IOA.

### ***Treatment Fidelity***

All intervention, coaching, and training sessions were recorded to ensure treatment fidelity. The teachers were contacted through WhatsApp and in person about the progress of the sessions. Also, the teachers were asked if they faced any difficulties when implementing the intervention or had questions about the coaching. In addition, the teachers reported information regarding the child's reaction toward the shared book reading time or any changes in their daily routine. An 80% agreement between an independent Arabic-speaking observer and the researcher on the coaching sessions was considered as an acceptable coaching fidelity rate. Moreover, an 80% agreement between an independent Arabic-speaking observer and the researcher on the trainer quality was considered an acceptable rate for trainer quality. At least 20% of the recorded sessions and training videos were selected to measure the treatment fidelity.

### ***Effect Size***

Tau-U is a non-parametric approach that measures nonoverlap in baseline and intervention phases. There are several advantages of using Tau-U, such as it can be used when having a small dataset, accounts for trend in baseline phase, and provides calculations for confidence intervals and p values (Lee & Cherney, 2018). Tau-U calculator is available at [www.singlecaseresearch.org](http://www.singlecaseresearch.org) was used to calculate this statistic (Vannest et al., 2016). Thus, Tau-U was calculated to provide effect sizes and to complement the visual analysis results.

## CHAPTER IV

### RESULTS

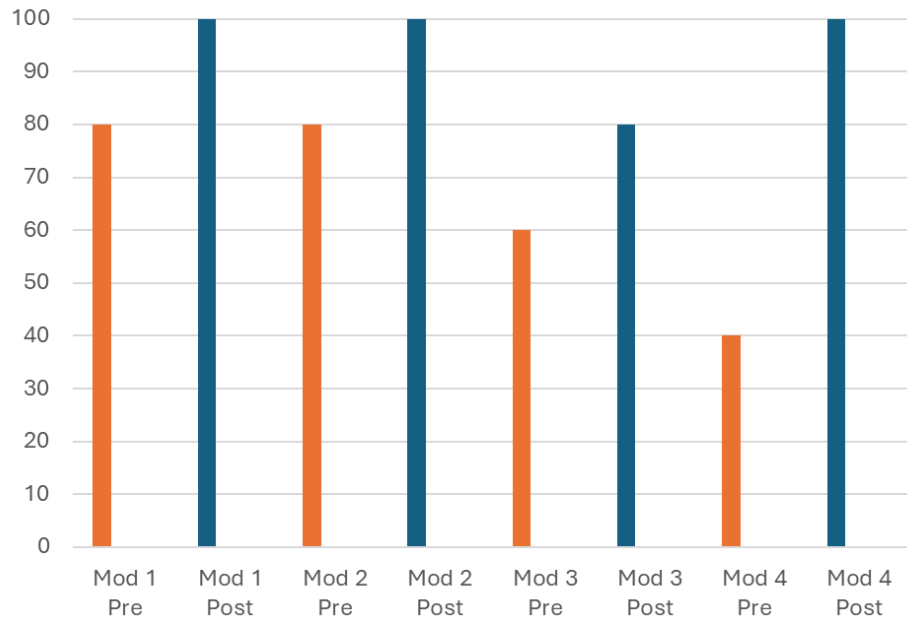
This chapter contains the study's results on teachers' implementation fidelity of shared book reading training in the UAE. A detailed description of the results on gains in teachers' knowledge, their fidelity of intervention implementation after coaching, ratings of acceptability, appropriateness, and feasibility of the intervention, participant perceptions of the training, and child outcomes.

***Primary RQ1: How do early childhood special education teachers improve their knowledge of shared book reading after training?***

The primary research question one was addressed by examining the raw percentage scores in the pre- and posttest performance of the participating teachers after completing the training modules. The content of the four modules included Creating an Appropriate Environment, Supporting and Fostering Communication, Reinforcement Hierarchy, and Systematic Prompting Hierarchy. Results were presented individually, and each participant's raw percentage scores were examined. Participant A had percentage scores of 100% in modules one and two, 80% in module three, and 100% after completing the fourth module. When looking at the results of the pre- and posttests for Participant B, the percentage score was 100% in the first training module, 80% in modules two and three, and 60% following the fourth module. Participant C percentage score was 100% on the posttest of module 1, and their percentage score was 80% on the second and third training modules. Participant C scored 90% after completing the fourth module. Overall, the three participants improved their knowledge on shared book reading strategies. Figures 6, 7, and 8 show participants' scores on the pre-and posttests.

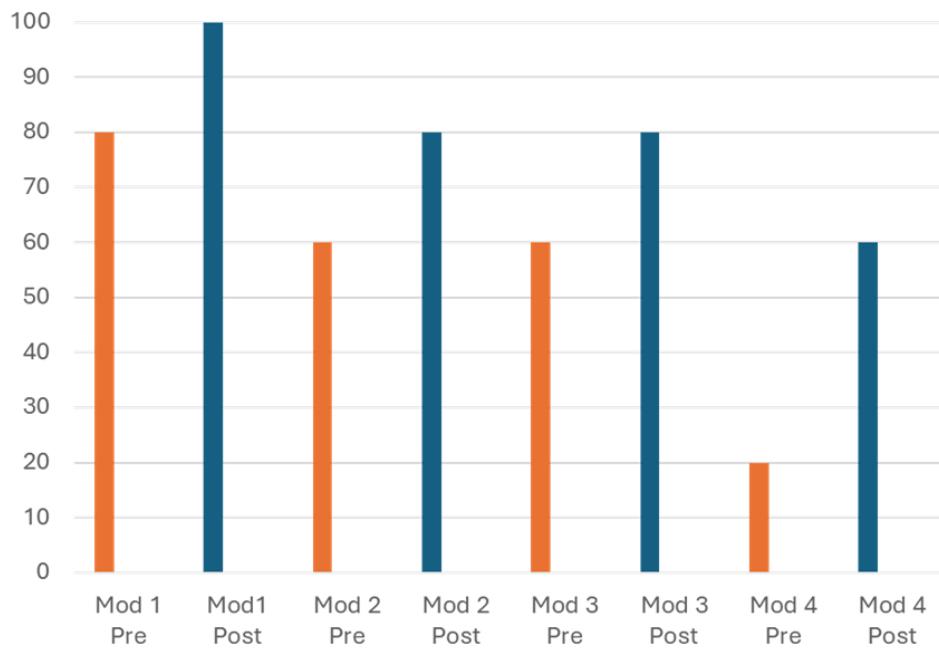
**Figure 5**

*Modules Pre and Posttest for Participant A*



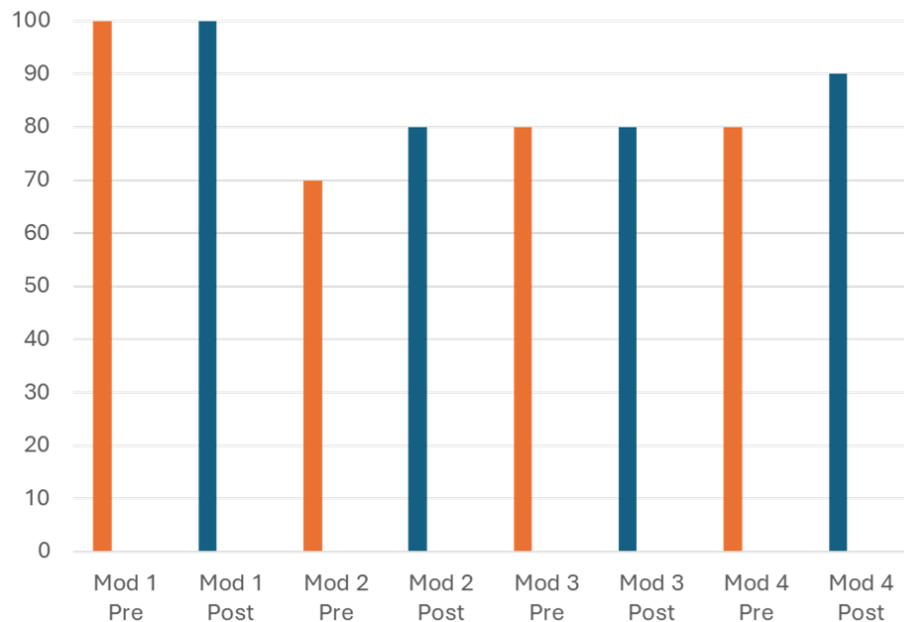
**Figure 6**

*Modules Pre and Posttest for Participant B*



**Figure 7**

*Modules Pre and Posttest for Participant C*



***Primary RQ2: Is there a functional relation between the implementation of practice-based coaching after an initial training and the outcome of teachers' fidelity of intervention implementation?***

Research question two was addressed by collecting baseline and intervention data on the implementation fidelity of shared book reading across all three ECSE teachers. Level, trend, variability, immediacy of effect, consistency across phases, and overlap were assessed. Coaching was labeled as small “x” and teachers being prompted to review the video in module five as triangle in the visual analysis graph. Figure 8 shows the visual analysis of implementation fidelity across the three participants.

**Participant A.** Data showed low level and stable data in the baseline phase. Additionally, there was minimal variability, no trend in the baseline phase, and the data was consistent. Participant A was observed to be using some of the strategies learned in the training, such as reading the story's title and talking about the pictures on the book cover. In contrast, data in the intervention phase showed some improvement after watching the video and an immediate increase in teacher fidelity of implementation (75%) after receiving the first coaching session provided by the researcher. Also, Participant A continued to improve in implementing the strategies after receiving the remaining three coaching sessions. Data across the intervention phase showed a high level, ascending trend, minimal variability, and no overlap between the baseline and intervention phases. Fidelity of implementation scores for Participant A after the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> coaching sessions were (75%, 82.5%, 87.5%, and 90%).

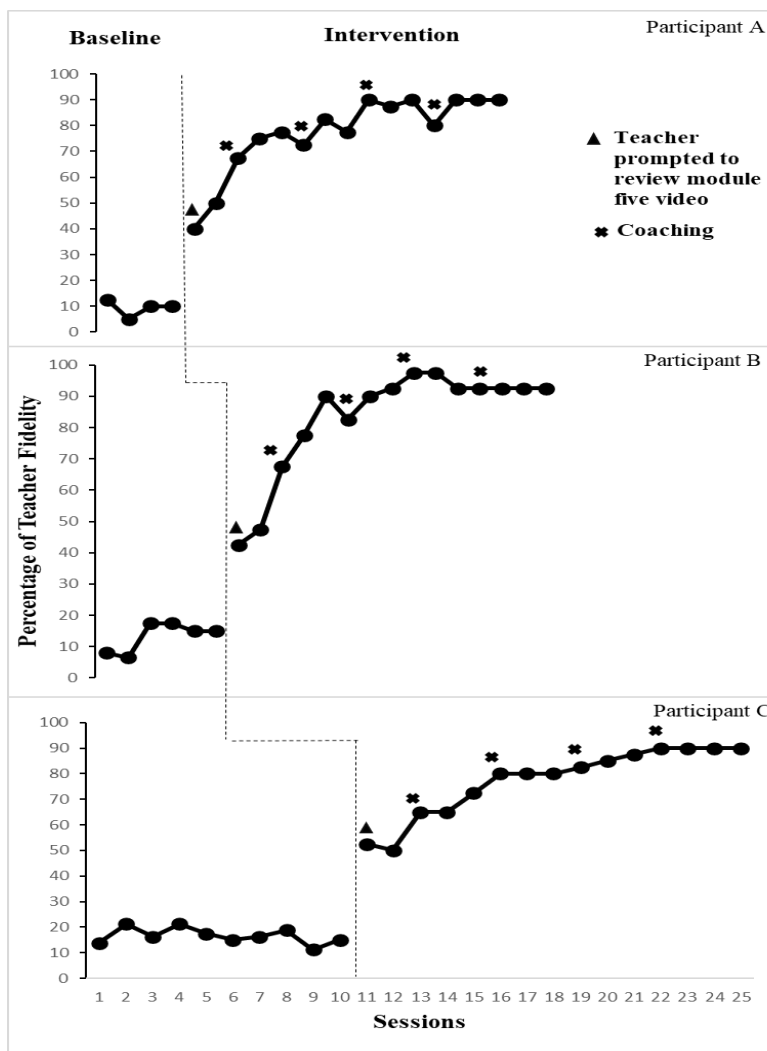
**Participant B.** During the baseline phase, Participant B was observed offering seating options to the child by asking her if she wanted to sit on the floor or read at the desk. Data was stable during the baseline phase at a low level, with no trend and minimal variability. During the intervention phase, the teacher reviewed the demonstration video and showed some improvement in their implementation. There was an immediate increase in implementation fidelity after the first coaching session (77.5%). Implementing the systematic prompting hierarchy (least to most) accurately was the most challenging during the intervention. Overall, data showed a high level of implementation fidelity, ascending trend, minimal variability, and no overlap. Fidelity of implementation scores for Participant B after the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> coaching sessions were (77.5%, 90%, 97.5%, and 92.5%).

**Participant C.** Data during the baseline phase showed almost stable data with low level, zero trend, and minimal variability. Participant C was observed implementing some of the

strategies, such as pointing to the book, getting the child's attention by calling his name and reading the title of the book. Data showed an improvement in implementation fidelity after reviewing the demonstration video and after two sessions from the first coaching session (80%). Participant C had a high level and steadily increasing trend. There was no variability in data and no overlap between the baseline and intervention sessions. Fidelity of implementation scores for Participant C after the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> coaching sessions were (65%, 80%, 85%, and 90%).

**Figure 8**

*Percentage of Teacher Implementation Fidelity Across the Three Participants*



## Tau-U

Results from the visual analysis showed that there was a strong functional relation between coaching and the increase in teacher implementation of shared book reading for all three teachers. Tau-U was calculated to learn more about the statistical significance of the result. Tau-U (baseline vs intervention) was 1 for Participant A, B, and C indicated no overlap between baseline and intervention. This was consistent with what was observed in the visual analysis (e.g., change in level from baseline to intervention, no overlap, minimal variability, and increase in intervention trend). Additionally, the p-values for participants A, B, and C were statistically significant,  $p < .001$ . After combining the contrasts, the p-value remained significant,  $p < .001$ . Results from the Tau-U matched the visual analysis, concluding a strong functional relation between the coaching and teacher fidelity of implementation. Table 10 shows the results of Tau-U.

**Table 10**

*Tau-U*

Participant	Tau-U (Baseline vs Intervention)	P Value
A	1	0.002
B	1	<0.001
C	1	<0.001
Weighted Average	1	<0.001

***Secondary RQ1: How will ECSE staff rate the acceptability, appropriateness, and feasibility of the training on using shared book reading to support spontaneous commenting for children with autism?***

The first secondary research question was addressed using surveys and interviews. The survey on implementation outcomes (Proctor et al., 2011) was translated into Arabic and back-translated to ensure the meaning stayed the same. It was then disseminated online using Qualtrics. Interviews were conducted in person at the research site and via phone. Data was collected from the ECSE staff on their rating of shared book reading training implementation outcomes and their perceptions. Means and standard deviations were sought from the survey and common themes from the interviews.

The overall rating for acceptability and appropriateness of shared book reading was high ( $M = 4.57$ ), indicating that ECSE staff agreed that the shared book reading intervention was acceptable and appropriate in their context. ECSE staff rated the feasibility of implementing the shared book reading in the highly acceptable range ( $M = 4.17$ ), which was slightly lower than the total ratings of acceptability and appropriateness but showed congruence between the ECSE staff on the ease of implementation and success of the training. See below Table 11 for acceptability, appropriateness, and feasibility rating scores. The English and Arabic survey can be found in APPENDIX C.

**Table 11**

*Acceptability, Appropriateness, and Feasibility Scores Shared Book Reading*

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Development team ( $n=4$ )
ECSE teachers ( $n=3$ )
Total of ECSE staff ( $n=7$ )

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Item	<i>M</i>	<i>SD</i>
<b>Acceptability Total</b>	4.57	
1. Using the shared book reading strategy to support child spontaneous commenting meets my approval.	4.43	.53
2. Using the shared book reading strategy to support child spontaneous commenting is appealing to me.	4.57	.53
3. I like using shared book reading strategy to support child spontaneous commenting	4.57	.53
4. I welcome using shared book reading strategy to support child spontaneous commenting.	4.71	.48
<b>Appropriateness Total</b>	4.57	
1. Using shared book reading strategy to support child spontaneous commenting seems fitting.	4.57	.53
2. Using shared book reading strategy to support child spontaneous commenting. seems suitable.	4.57	.53
3. Using shared book reading strategy to support child spontaneous commenting seems applicable.	4.57	.53

4. Using shared book reading strategy to support child spontaneous commenting seems like a good match.	4.57	.53
<b>Feasibility Total</b>	4.17	
1. Using shared book reading strategy to support child spontaneous commenting seems implementable.	4.50	.54
2. Using shared book reading strategy to support child spontaneous commenting seems possible.	4.50	.54
3. Using shared book reading strategy to support child spontaneous commenting seems doable.	4.50	.54
4. Using shared book reading strategy to support child spontaneous commenting seems easy to use.	4.17	.40

**ECSE Staff Perceptions**

Interviews focused on ECSE staff perceptions of shared book reading training were conducted. Common themes emerged, including the benefits of shared book reading, its application in the classroom, and coaching support. Below are detailed descriptions of the themes.

**Benefits of shared book reading.** When ECSE staff were asked about their opinion in shared book reading training, many talked about the importance of teaching children with autism using stories. One of the participating teachers talked about the increase of child engagement during reading and said:

My experience was nice. Sometimes when we read a story, we don't focus on the student. We read it in general. Here, with continuity, it became clear that the student was able to communicate and interact with the story more. In this training, we just focused on the student, and we got a better result than if it were a group and you read the story to everyone. (Participant B)

تجربتي كانت جميلة، في بعض الأحيان عندما نقرأ قصة لا نركز على الطالب، بل نقرأها بشكل عام، وهنا مع الاستمرارية اتضح أن الطالب كان قادرًا على التواصل والتفاعل مع القصة بشكل أكبر، في هذا التدريب ركزنا فقط على الطالب، وحصلنا على نتيجة أفضل مما لو كانت مجموعة وقرأت القصة للجميع. (مشارك ب)

Another participating ECSE teacher indicated that the training supported expanding on child utterances and increasing their vocabulary by commenting and talking about the book. The teacher commented on this point by saying:

The mechanism that we learned in the training that I hold a story and read it with them. Not just commenting on the picture, but we add to their information. If the child says a word, we have them say a two-word sentence or a three-word sentence. (Participant A)

الآلية التي تعلمناها في التدريب هي أنني أحمل قصة وأقرأها معهم، ولا أكتفي بالتعليق على الصورة، بل نضيف إليها معلوماتهم، فإذا قال الطفل كلمة نطلب منه أن يقول جملة من كلمتين أو جملة من ثلاث كلمات. (مشارك أ)

Improving social and academic skills through shared book reading was pointed out as one of the benefits of this training. A participant from the development team stated that “Using stories with children with autism is very important because it teaches them educational and social skills”. One ECSE teacher said:

Stories definitely play a role in developing the student's abilities. They learn new terms, develop their vocabulary, and learn to use the language. Sometimes there is a language, but it is not used, so they start using it. Of course, the idea of research itself is useful, especially for the autism group. (Participant C)

تلعب القصص بالتأكيد دورًا في تنمية قدرات الطالب، حيث يتعلم مصطلحات جديدة، ويطور مفرداته، ويتعلم استخدام اللغة. في بعض الأحيان توجد لغة، ولكنها غير مستخدمة، فيبدأ في استخدامها. بالطبع، فكرة البحث في حد ذاتها مفيدة، خاصة لفئة التوحد. (مشارك ت)

**Application in the classroom.** ECSE staff were asked about ways of implementing the strategies in their classrooms. Applying the strategies in the classroom for some teachers was

during the study and for others had some future ideas to tailor what they learned and make it fit for their students' needs.

Two of the participating teachers commented on starting to apply the five second wait time when working with children with autism in the classroom. One ECSE teacher mentioned:

For example, I noticed that I started giving the student more chances. Sometimes we intervene quickly, so we do not give them a chance to respond. You taught us five seconds, but I can give them more. Maybe I will get a response from them that way. And I want to give my students a chance to think and absorb what I asked them to do. So, in return they take the initiative, and this is what we want for our students. We want them to take the initiative. (Participant B)

على سبيل المثال، لاحظت أنني بدأت أعطي الطالب فرصاً أكثر. أحياناً نتدخل بسرعة، فلا نعطيهم فرصة للرد. لقد علمتينا نستخدم خمس ثوان، لكن يمكنني أن أعطيهم أكثر. ربما أحصل على رد منهم بهذه الطريقة. وأريد أن أعطي طلابي فرصة للتفكير واستيعاب ما طلبت منهم القيام به. في المقابل، يأخذون زمام المبادرة، وهذا ما نريده لطلابنا. نريدهم أن يأخذوا زمام المبادرة. (مشارك ب)

Another ECSE teacher said:

The idea is that as study strategies, we give the child five seconds and use a specific sequence. If it is used throughout the year, there will be a result because there is continuity. Our teaching method is group-based in the center. Therefore, when it comes to applying the strategies, we can apply them during the afternoon reading circle. (Participant C)

الفكرة هي أنه كإستراتيجيات لهذه الدراسة أن نعطي الطفل خمس ثوانٍ ونستخدم تسلسلاً محددًا. إذا تم استخدامه طوال العام، فستكون هناك نتيجة لأن هناك استمرارية. تعتمد طريقة التدريس لدينا على المجموعة في المركز. لذلك، عندما يتعلق الأمر بتطبيق الاستراتيجيات، يمكننا تطبيقها أثناء حلقة القراءة المسائية. (مشارك ت)

One of the development team members shared about her experience being part of this research and her way of implementing some of the strategies in her classroom after reviewing the training modules with the team.

We usually don't use strategies, or we forget about them because of the pressure of work. Being part of the development team reminded me of things I can use with my students even if they are not participating in your study. My student Reem loves stories, so I reviewed myself and my goals for her. Reem loves stories and benefits from them, so I started reading for her. (Special education teacher 1)

نحن عادة لا نستخدم الاستراتيجيات، أو ننساها بسبب ضغط العمل. كوني جزءاً من فريق التطوير ذكّرني بأشياء يمكنني استخدامها مع طلابي حتى لو لم يشاركوا في دراستك. تحب طالبتني ريم القصص، لذلك راجعت نفسي وأهدافي لها. تحب ريم القصص وتستفيد منها، لذلك بدأت القراءة لها. (معلم التربية الخاصة 1)

**Coaching support.** ECSE teachers were asked about their thoughts on the practice-based coaching provided to them during the intervention phase. Teachers shared similar opinions on coaching, as they shared that it was important for improvement to remember the steps correctly and know how to implement the strategies effectively. One teacher said:

Of course, it's useful. Look, a person doesn't see themselves but there's someone above them who warns them or... Sometimes, for example, you tell me not to point with my finger. Sometimes I am not aware of myself and want to point. So, you say, "No, pull your hand away." These simple tactics, a person needs feedback on and to reflect on our implementation. (Participant B)

بالطبع هذا مفيد. انظري، قد لا يرى الشخص نفسه لكن هناك شخص موجود يحذره أو... في بعض الأحيان، على سبيل المثال، تطلبين مني ألا أشير بإصبعي. في بعض الأحيان لا أكون مدركاً لذاتي وأريد الإشارة. لذا، تقولين، "لا، اسحبي يدك بعيداً". هذه التكتيكات البسيطة، يحتاج الشخص إلى التفكير فيها ومراجعة نفسه عند تنفيذها. (مشارك ب)

Another teacher commented on implementing the five seconds wait time before providing any prompting support to children during shared book reading by saying,

The part about giving the child five seconds to answer, and I like to give the child his personality because he is not just a recipient. I didn't do it on every page. I mean, I gave him time, but not every page. This is something I learned and added to my learning when implementing the strategies. (Participant C)

الجزء الخاص بإعطاء الطفل خمس ثوانٍ للإجابة، وأنا أحب أن أعطي الطفل شخصيته لأنه ليس مجرد متلقٍ. لم أفعل ذلك في كل صفحة. أعني، أعطيته وقتاً، ولكن ليس في كل صفحة. هذا شيء تعلمته وأضفته إلى ما تعلمته عند تنفيذ الاستراتيجيات. (مشارك ب)

Another teacher emphasized a similar sentiment about the coaching and how it supported her during the intervention phase:

The feedback was excellent. You explain the strategy, and I apply it in front of you. You walk me through the steps and if I do step one and two and forget three, and you remind me of the last step. (Participant A)

كانت الملاحظات ممتازة. لقد شرحت الاستراتيجية، وأنا أطبقها أمامك. لقد شرحت لي الخطوات وإذا قمت بالخطوة الأولى والثانية ونسيت الثالثة، فتذكريني بالخطوة الأخيرة. (مشارك أ)

***Secondary RQ2: Is there a functional relation between the rate of spontaneous commenting during shared book reading after teachers receive coaching to deliver a shared book reading activity?***

The second secondary research question was addressed by collecting children's spontaneous and prompted comments. The data was graphed in a line graph where the small “x” indicated coaching sessions. The green round dots indicated spontaneous comments, and orange triangles indicated prompted comments when the child did not comment after 5-seconds. Time delay could be more than 5s depending on the child pace of commenting. Comments included labeling actions, characters, objects, actions, feelings, describing, or asking questions. A child's rate of spontaneous and prompted comments per minute was collected and calculated by dividing the number of occurrences by the number of intervals. Spontaneous and prompted comments were counted. Level, trend, variability, immediacy of effect, consistency across phases, and overlap were analyzed.

**Child A.** The level of comments for Child A was moderate. The rate for spontaneous commenting on the third baseline session was 3 per minute due to high interest in animals that were pictured in the book. The trend for spontaneous commenting was closer to zero for the first, second, and fourth baseline data. However, the trend of prompted commenting was increasing. There was also some variability in baseline data. After the first coaching session for the teacher, the child showed a rate of 2.37 spontaneous comments per minute, which was higher than the previous sessions, which was 0.2 per minute. Similarly, after the second coaching session, the rate of spontaneous comments was 2 per minute. In session 18, the rate of spontaneous comments was 7 per minute, and it was the highest data point across all intervention sessions. The visual analysis graph showed an increase in spontaneous comments and a decrease in

prompted comments during the last five intervention sessions. There was variability in data for the spontaneous and prompted comments. Additionally, overlap in data was observed in some of the baseline and intervention sessions. The visual analysis for Child A showed some improvement in spontaneous comments but a weak functional relation.

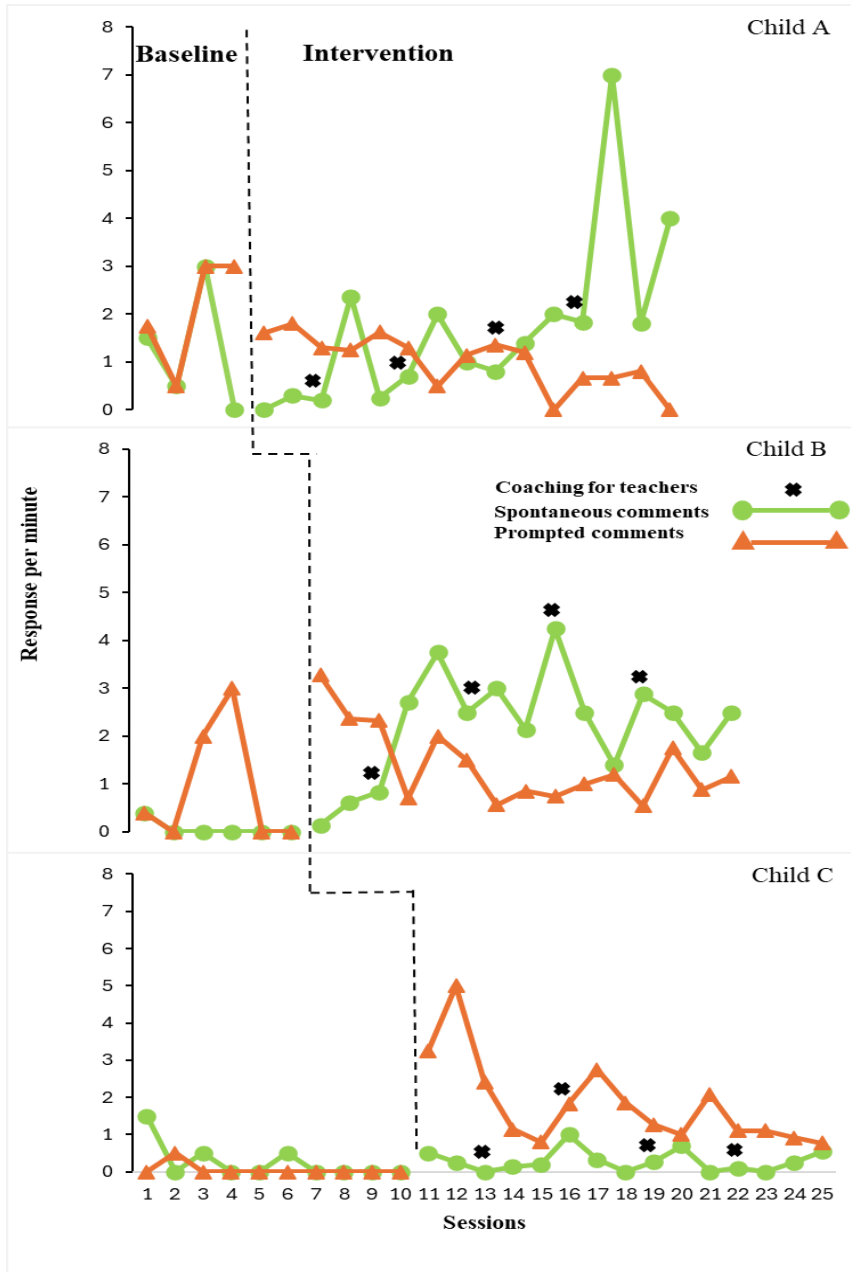
**Child B.** Data showed a low level of spontaneous commenting, zero trend, and no variability in baseline data. However, the level of prompted commenting was moderate. There was an immediacy of effect in spontaneous commenting after the first coaching session, going from 0.83 to a rate of 2.71 per minute. The rate of spontaneous commenting increased after that session to 3.75 per minute. In session 16, the rate of spontaneous commenting was 4.25 per minute, the highest across all sessions. The visual analysis showed a decrease in prompted comments and an increase in spontaneous comments throughout the intervention phase. Data from the visual analysis demonstrated a moderate to high level of spontaneous commenting, some variability, and a slowly increasing trend. Additionally, there was no overlap in data between the baseline and the intervention phase. The visual analysis concluded a strong functional relation between the improvement of teacher implementation fidelity and increased child spontaneous commenting during shared book reading.

**Child C.** Baseline data for spontaneous and prompted commenting was stable with zero trend and no variability. After introducing the intervention, prompted comments were higher than the spontaneous prompting. The teacher provided prompting support after waiting for 5-6s for the child to respond. The prompting support was direct verbal prompting by asking the child questions such as, "Where is the milk?". The highest rate of spontaneous commenting was 1 per minute on the 16<sup>th</sup> intervention session. The level of spontaneous commenting was low, with zero trend and minimal variability in data. There was an overlap between the baseline and

intervention phases. The visual analysis showed no functional relation between teacher implementation fidelity and an increase in child spontaneous commenting. Figure 9 shows the visual analysis of the child's spontaneous and prompted comments.

**Figure 9**

*Rate of Child Spontaneous and Prompted Comments*



## Tau-U

Results from the visual analysis showed a strong functional relation between teacher implementation fidelity and an increase of spontaneous commenting during shared book reading only for Child 2, a weak functional relation for Child 1, and no functional relation for Child 3. Tau-U was calculated to understand the results from the visual analysis. Tau-U (baseline vs. intervention) was 0.15 for Participant A and 0.30 for Participant C, indicated overlap between baseline and intervention. For Participant B, Tau-U was 0.97 and indicated minimal overlap. This was consistent to what was observed in the visual analysis. Additionally, results from Tau-U showed that the p-value for Child B was statistically significant,  $p < .001$ . However, the p-values were insignificant for Child A  $p = .65$  and Child C  $p = .20$ . After combining the contrasts, the p-value was significant  $p < .001$ . Results from the Tau-U matched the visual analysis, concluding a strong functional relation between teacher implementation fidelity and an increase in child spontaneous commenting only for child B and no functional relation for children A and C. Table 12 shows the results of Tau-U.

**Table 12**

*Tau-U*

Child	Tau-U (Baseline vs. Intervention)	P Value
A	0.15	0.65
B	0.97	<0.001
C	0.30	0.20
Weighted Average	0.48	<0.001

## **Inter-observer Agreement**

The researcher and one Arabic-speaking coder who holds a master's degree in applied behavior analysis worked on coding fidelity of teachers' implementation, fidelity of the coach, quality of the trainer, and the rate of spontaneous and prompted commenting of children. At first, the researcher and the coder met online to go over the operational definitions and practice coding together on only two videos due to time constraints. The practice helped the coder to understand what to look for when coding and ask questions. The researcher made sure they gained at least 80% agreement before moving to the next step.

Afterward, the researcher randomly picked 20% of teachers' implementation fidelity, 20% of fidelity of the coach videos, 20% of the training videos, and 20% of children's spontaneous and prompted comments. IOA was calculated by taking the number of agreements/ (number of agreements + number of disagreements) \* 100%. After coding was completed, the coder and the researcher met to discuss the results and resolve any disagreements. IOA for teacher fidelity of implementation for Participant A had a mean of 85% (range 80-90%). For Participant B, the mean was 83.25% (range 78-90%), and for Participant C, the mean was 82% (range 80-90%). The IOA for spontaneous and prompted commenting for Child A had a mean of 98.33% (range 95-100%), Child B mean was 82.5% (range 75-90%), and Child C mean was 97% (range 70-95%). IOA for fidelity of the coach had a mean of 92.5% (range 90-95%) and 100% for trainer quality.

## CHAPTER V

### DISCUSSION

The purpose of this study was to first assess teachers' knowledge after receiving training on shared book reading with children autism and second, examine teachers' implementation fidelity of a shared book reading using practice-based coaching. The study also evaluated other implementation outcomes, such as appropriateness, acceptability, and feasibility. Moreover, the study observed children's spontaneous and prompted commenting after teachers received coaching. This study was guided by Guskey's modified teacher change framework that includes professional development, coaching support, change in teacher classroom practices, change in child outcomes, and sustained change in teachers' attitudes, beliefs, and knowledge. The community participatory approach was another key aspect of this study and was also used to create the training. This approach ensured that everyone in the community was included during the pre-implementation stages which added strength to the research. Results from the study showed improvement in teachers' knowledge after training, an increase in teachers' implementation fidelity after coaching, and high ratings for appropriateness, acceptability, and feasibility. Moreover, there was an increase in spontaneous commenting for one child.

This chapter includes a discussion of major findings, implications and recommendations for practice, and study limitations.

#### **Interpretation of the Findings**

##### **Teacher Knowledge**

*How do early childhood special education teachers improve their knowledge of shared book reading after training?*

Teachers completed the pre- and posttest on the four training modules. Results showed that all teachers improved their knowledge after completing the training modules. This finding was supported by Borko and colleagues (2010), who stated that professional development increases teachers' knowledge. Teachers were given two weeks to complete the training, and many self-reported utilizing the time after work and finished it within two to three days. This finding provides evidence that online professional development accessed asynchronously can improve teachers' knowledge. Additionally, future studies that focus on teachers' professional development can employ asynchronous training due to its flexibility in completion time and the ability to view materials multiple times. Moreover, during the researcher's daily interaction with teachers, some of them shared that using books, especially those written in Arabic, to teach children was something they wanted to practice more. Thus, teachers' choice and desire for this type of training could have played a central role in the success of this professional development.

The four modules varied in complexity. Teachers made the greatest gains after completing module one which covered creating an appropriate environment. It could be that the content resonated with teachers and aligned with their current approach of providing a quiet and organized reading environment for children. Less gains were made among the participants following the completion of module two on supporting engagement during shared book reading and module four on prompting hierarchy as they were more complex. These two modules included specific steps teachers needed to follow and remember when reading to children. Remembering this procedural knowledge that was new to the teachers may have been more difficult. Additionally, these strategies required teachers to use least to most support, which was significantly different from what they were accustomed to in working with the children in their classrooms. Moreover, when assessing the needs before the coaching sessions, some teachers

requested to have the strategies written for them and hung them on the wall so they could refer to the sheet during the intervention if they forgot. One of the goals of this study was to provide children with different opportunities to spontaneously comment on the book and to shift away from prompting children to comment, as was the current practice by the participating teachers. Thus, fewer gains were expected in module 2 and module 4 due to the complex content and lack of knowledge of these required skills. Module three was on reinforcement hierarchy, and teachers were well-versed in the various types of reinforcements and when to provide them after completing the modules. Even though teachers were knowledgeable of the various types of reinforcements and when to use them, there was inconsistent implementation during baseline and intervention before coaching. With the support during coaching, teachers were able to deliver reinforcement consistently for the remainder of the sessions.

### **Teacher Implementation Fidelity**

*Is there a functional relation between the implementation of practice-based coaching after an initial training and the outcome of teachers' fidelity of intervention implementation?*

Research has shown that providing support for teachers after training is crucial to ensure they implement what they learned with high fidelity (Barton et al., 2013; Rakap, 2017; Scheeler et al., 2006). Teacher implementation fidelity was evaluated using single case multiple baseline design. During baseline, all three teachers demonstrated minimal implementation of the shared book reading strategies, such as (5-second wait time, turn-taking, and prompting hierarchy). Some teachers were observed implementing some of the learned strategies from module one on supporting an appropriate environment during baseline, such as asking the child about their preferred seating option, facing the child when reading the story, and sitting in a quiet area. These were the strategies most transferred from the training to implementation, and teachers

need more support on the remaining strategies, such as supporting engagement, prompting hierarchy, and reinforcement hierarchy.

The lack of implementation fidelity can be attributed to the "voltage drop." Voltage drop is when an intervention loses benefit when moving from effectiveness to actual implementation with participants who may have different characteristics (Chambers et al., 2013). Guskey's 1986 modified process of teacher change included the need for coaching support in order to observe changes in teachers' classroom behavior or implementation. Thus, after baseline, all three teachers were prompted to rewatch the video in module five and all of them showed some improvement in their implementation fidelity. Using videos in combination with coaching to teach teachers new strategies could be useful to improve implementation fidelity.

Moreover, coaching support was provided to improve that "voltage drop." All three teachers taught using most-to-least support and minimal engagement when working with children. However, shared book reading strategies required them to implement the least amount of support and to engage more during the session, which was different from the standard practice in their classrooms. Learning and reading about strategy can be easier than implementing it in a real setting. Therefore, coaching was needed to see some behavior change during implementation.

To support implementation, all three teachers received four coaching sessions on the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup>, and 12<sup>th</sup> intervention sessions during the intervention phase. The coach implemented the practice-based approach to support implementation fidelity. Teachers mostly needed support in remembering the steps of specific strategies. For instance, the first teacher had challenges remembering the steps of creating an appropriate environment where first, they have to offer seating options; second, bring the intervention materials; third, bring out the books; fourth, offer

book choices; fifth, give the child a toy to play with, and lastly pick an engagement tool and get it ready. Similarly, for prompting and reinforcement hierarchies, a specific sequence for teachers to follow was required and support was needed through coaching to ensure correct application. Some tools that the coach used were a sheet of paper with the steps simplified to be hung on the wall where the teacher could see it. Additionally, rewatching the demonstration video in module five helped them understand what they needed to do.

During the coaching sessions, the coach provided support in person in the form of modeling the correct use of the strategy, verbal, visual, or gestural prompting, or offering a suggestion. All three teachers showed improvement in implementation fidelity after receiving the coaching sessions from the coach. Results from the visual analysis showed there was a functional relation between practice-based coaching and teacher implementation fidelity. Even though teachers in the UAE come from diverse educational backgrounds and practices (Hemdan et al., 2021), and so did the teachers who participated in this study, with coaching support during implementation, their application of shared book strategies was almost similar. Additionally, the results of teacher implementation fidelity matched Guskey's (1986) modified teacher change framework, where teachers change their classroom practices after coaching.

In this study, professional development on shared book reading was delivered to the teachers, followed by video and coaching support, which led to a change in their implementation fidelity. The improvement in teachers' implementation fidelity was also attributed to the adaptation work in this study following (Bernal et al., 1995) ecological validity model, such as providing all training and intervention materials in Arabic, which made it feasible for teachers to access and grasp the learning materials. This finding matched what was found in the study conducted by Al Neaimi & Lutaaya (2018), where trainees understood the training materials

better when provided in their first language. Additionally, having an Arabic-speaking trainer and coach facilitated communication and improved teachers' understanding of their role in the study.

Moreover, consistency was another factor that helped teachers achieve improvement in implementation fidelity. The coach followed practice-based coaching protocol and delivered the coaching sessions in the same format but tailored to each teacher's coaching goal. Thus, teachers could expect the coach to follow the same structure in each session (e.g., needs assessment, coaching, delivering the coaching letter, and debriefing meeting). People in the UAE have a high intolerance for uncertainty (Al Jerjawi, 2016), which could have influenced the training. However, having a transparent and predictable intervention and coaching format helped consider the uncertainty avoidance factor some participating teachers may have had.

### **Acceptability, Appropriateness, Feasibility: Perceptions of Shared Book Reading**

#### ***How will ECSE staff rate the acceptability, appropriateness, and feasibility of the training on using shared book reading to support spontaneous commenting for children with autism?***

After the intervention sessions ended, ECSE staff, including the development team that developed the training modules and ECSE teachers who joined the training, completed a survey on the three implementation outcomes and were interviewed about their perceptions of the training. Each implementation outcome included five items for ECSE staff to rate from (1) completely disagree to (5) completely agree. Seven out of eight ESCE staff completed the survey.

Results from the survey showed that ECSE staff believed shared book reading was acceptable, with a total mean of 4.57, and they may implement it again at the center. The high rating for acceptability could be due to the fact that the research focused on improving teacher implementation fidelity and child spontaneous commenting using books, which can be

considered a natural way to support teachers and children in the classroom. Teachers in the interviews mentioned the usefulness of using books to teach children with autism; thus, using less intrusive methods such as books when doing research in the UAE led to welcoming and accepting the training. Appropriateness had a total mean of 4.57, which confirmed that shared book reading was a good fit for implementation in the center. A high rating for appropriateness could be due to the training matching the culture of the UAE.

The UAE and Abu Dhabi seek to maintain the Emirati culture and values (Matsumoto, 2019). In this research, three of the four books that were used in the training were written and illustrated originally by Arabic-speaking authors. Additionally, the topics of the books were selected to match the UAE culture. For example, the book "*The Fourteenth Symphony*" written by Nahed Alshawa and illustrated by Sanaa Qoli, was about the Eid celebration and included animals that children were familiar with. In the Islamic religion, Eid is celebrated twice per year, and the book included pictures of balloons, flowers, and gatherings, which children usually see during the Eid holiday. Additionally, the book included short sentences and was age appropriate. Sensitivity to the participants' cultures and beliefs contributed to viewing the training as appropriate.

The total mean rating for feasibility was 4.17, slightly lower than the other implementation outcomes. Feasibility refers to the ease of an intervention, and ECSE staff believed that shared book reading was easy to implement. Teachers shared that when interviewed by the researcher, they appreciated that the materials had already been developed and were ready to be used. When coaching took place, most teachers showed a need to support remembering the steps correctly. An extended intervention phase would have supported the feasibility of shared book reading as coaching and implementation were discontinued because of the end of the

academic year. Magaña et al. (2017) suggested that using the ecological validity model can increase ecological and external validity, and that was evident when ECSE staff rated shared book reading as acceptable, appropriate, and feasible and planned to generalize it and use it with other teachers and students at the center.

### **ECSE Perceptions**

The themes that emerged from the interviews were related to the importance of using books to support the academic and social skills of children with autism, the use of shared book strategies in the classroom, and the importance of coaching support. ECSE staff commented on the importance of this research and its use of books to support the spontaneous commenting of children with autism. One of the development team participants shared about using social stories with children at the center, and they appreciated using stories to teach a different skill, such as commenting on the books. Another teacher mentioned that one of the research aims was to increase children's spontaneous commenting; however, using different engagement tools supported additional skills such as matching, pointing, and discriminating. As reported by teachers, the teaching style in the two participating classrooms was in large groups; thus, the use of stories was functional because children usually did not get a chance to read one-on-one with their teachers to support their language and social skills. One-on-one time was dedicated to teaching other academic goals for children, but not reading. Therefore, reading individually with children should be equally important to other academic goals, such as counting and letter naming for this age group. Additionally, teachers seemed to prefer books for learning as opposed to other methods as they believed it was more natural to implement. Many strategies learned from the training can be applied when reading to large groups of children, such as five-second delay, turn-

taking to comment on the book, using least to most prompting hierarchy, book choice, and reinforcement hierarchy.

ECSE teachers and one participant from the development team shared about utilizing the strategies learned from the training in their classrooms. For instance, two teachers shared that they implemented the five-second wait time in their classrooms to provide children with opportunities to respond to questions or comments. Guskey (1986), in his teacher change framework, described how change in children's outcomes could lead to sustained change in teachers' attitudes, beliefs, and knowledge. Existing literature has shown that high-quality training can support teachers' knowledge and improve children's learning outcomes (Ozcan & Uzunboylu, 2015; Feng & Sass, 2013). Teachers in this study appreciated learning about and practicing the five-second wait time to support child spontaneous commenting. The use of expansion to increase children's use of language was also shared in the interviews. One of the development team participants expressed that she forgot some of the strategies, but being part of the team reminded her to start using them.

The results of this study related to coaching support align with Gallacher's (1997) that coaching should be provided to support teachers' professional growth and encourage them to improve. Coaching support was implemented to improve implementation fidelity because shared book reading training was introduced in the center for the first time. Practice-based coaching was chosen because of its cyclical process and allows collaboration between the coach and teachers. Decisions were made collaboratively during coaching, giving the teachers agency and choice regarding their own learning. Teachers indicated that they felt the support was useful during the intervention phase. Additionally, one teacher shared that it was helpful because it gave her time to reflect on her skills and how she was implementing the strategies.

## **Child Spontaneous and Prompted Commenting**

### ***Is there a functional relation between the rate of spontaneous commenting during shared book reading after teachers receive coaching to deliver a shared book reading activity?***

The visual analysis showed that children's rate of spontaneous commenting increased only for Child B but not for Child A or Child C. The results for Child B matched what was discovered in the D'Agostino et al. (2018) study regarding child spontaneous commenting during shared book reading. Child B benefited from the intervention, which was evident after their participating teacher received the coaching support. The rate of spontaneous commenting increased from 0.71 to 2.71 per minute after the first coaching session. Child A had some variability in data but was engaged in most of the sessions. Additionally, the rate of spontaneous commenting for Child A in session 18 was 7 per minute and this could be due to their interest in the book. The last five intervention sessions showed some increase in the rate of spontaneous commenting, and the prompted commenting was close to zero. Child C showed a low rate of spontaneous commenting. However, he participated during the session when prompted by their participating teacher if he did not comment after the five seconds wait time. Child C was not engaged in some sessions due to lack of sleep and sickness sometimes. The researcher and their teacher worked together to change morning intervention sessions to the afternoon where Child C can sleep a little. The low rate of spontaneous commenting for Child A and C could be that the children were not becoming accustomed to the 5 second wait time that their teachers were implementing.

Even though only Child B showed improvement in spontaneous commenting, all children enjoyed using the engagement tools, especially inserting the copied pictures in the plastic jar and matching scanned pictures with the matching board. Children were fascinated that the pictures in

the books were similar to the ones used for the engagement tools. This helped children connect more with the books and increased their participation even if it was prompted. Tau-U results complemented the results of the visual analysis, and the p-value for Child B was only statistically significant but not for Child A and Child C. However, combining the weight for all p-values showed that the intervention was statistically significant for all three children. When combining the weight of the p-values for all three children, it appeared to be statistically significant. The p-value of the combined weight of the p-values was questionable because the visual analysis concluded a strong functional relation only for Child B, and the Tau-U individual p-value was only statistically significant for the same child.

### **Implications for Practice**

Coaching after initial training was essential to ensure improvement in implementation fidelity. Without coaching support, teachers may not have implemented the strategies as they may not have seen any benefit. Coaching and providing feedback to teachers along the way provides a better chance for adapting and using new skills with their students. Practice-based coaching was used in this study with teachers in the UAE. This type of coaching is unique because it is cyclical, collaborative, and ongoing. Practice-based coaching is beneficial because it goes through different stages, such as observing needs, setting goals with the teacher, observing the teacher during the implementation, and providing feedback (Head Start ECLKC, 2023). A cyclical process means the coaching has a beginning and end point, which keeps the coach organized and accountable for delivering all coaching components. Practice-based coaching is known to be collaborative and allows teachers to express their needs related to support and improving implementation. Additionally, working collaboratively with the coach can remove

barriers hindering acceptance and change. Last, practice-based coaching is an ongoing process that provides teachers with multiple opportunities to improve their implementation.

In the UAE, it was observed that the common practice is to read to children without supporting engagement. Reading to children where they sit and listen is often practiced when working with children with autism. Shared book reading with similar strategies described in this research is rarely used because the focus is always on direct teaching and learning when working with children with autism. This study implemented shared book reading to support children's spontaneous commenting on the book, as many of them lack spontaneous commenting skills. Even though shared book reading positively impacted only one child, this method is a natural way to teach social and academic skills. Existing literature has shown the importance of shared book reading (D'Agostino et al., 2020; Akemoglu & Tomeny, 2021; Fleury & Ford, 2021). Teachers in the UAE should be encouraged to implement shared book reading strategies in their classrooms to increase language production and improve social skills.

### **Directions for Future Research**

Community partners should always be involved in the researcher's research plan. Conducting research in countries with unique cultural values can be challenging, but the community participatory research approach can facilitate the process and increase acceptance. Involving community partners will allow them to share their opinions and ideas and think of ways to make the research fit best for the community. Additionally, this will give community partners a sense of ownership and appreciation for the researcher and the research idea. This research was led by the community-based participatory research approach, which was welcomed by the development team, who never had a chance before to be involved in designing the teacher training during the pre-implementation stages. The UAE has unique cultural values; thus, it is

vital for researchers in the region to use a community participatory research approach due to its benefit to the research and the community members (Macaulay et al., 1999).

This study recruited children with autism with two-three-word utterances; however, shared book reading is known to promote language and social skills to most children. During interviews, the development team suggested replicating this study and modifying the inclusion criteria to include non-verbal children with autism. All children have the right to be read to and exposed to books regardless of their language abilities. Therefore, future research should include non-verbal children and modify the research goal to include other skills such as joint attention, choosing books, and matching similar pictures to the book. Additionally, prompting hierarchy should be coached earlier when replicating the study with the same inclusion criteria for children. This will allow teachers to have more opportunities to practice implementing the prompting hierarchy strategy, and children will have more opportunities to spontaneously comment. Thus, the coaching sessions should start with Creating an Appropriate Environment, Supporting Engagement, Prompting Hierarchy, and Reinforcement Hierarchy.

Another suggestion for researchers in the region is to partner with families of children with autism and teach them about the importance of reading books in Arabic and the strategies they can implement in their home setting to support children's social and academic skills. Providing children with the opportunity to read with their family members can improve the generalization of the targeted skills and increase awareness among families of children with autism in the UAE about the importance of reading to children in their natural environment.

### **Limitations**

Several study limitations should be noted. There were limited resources of books written in Arabic that are appropriate to be used with children with autism in the UAE. Three of the four

books selected for the study were purchased from the Abu Dhabi International Book Fair, which opened its doors last May, where they welcomed writers and publishers from all over the world. When searching for books for study at the book fair, publishers and writers recommended books about letters, numbers, and shapes, but there were limited books that had story structure (beginning, middle, and end). If the book had a story structure, it was either too long that children would lose attention, sentences were long and above children's language abilities, or the illustrations were not concrete and clear. It was challenging to find a fourth book with similar criteria to the other selected books (*The Fourteenth Symphony, What else, Salman? and Where is Jad?*), so the fourth book (*Friends and Transportation*) was originally written in English and translated to Arabic. The book's theme was about the different vehicles/animals to be used for transportation. On one of the pages, a character was using a skateboard to move from one place to another. None of the children were able to comment on it because skateboards are not common on streets in the UAE, unlike in the U.S. The researcher suggested that the teachers take turns commenting on the skateboard and using it as a teaching moment to familiarize children with the skateboard.

Another limitation of this study was the small sample size and time constraints. The development team members nominated teachers and children to participate in the study because there were not many participants within the same study inclusion criteria. The study started with four teachers and four children, but one child dropped out due to relocation for summer break. Thus, their teacher had to stop the training. The researcher carried out the study with three teachers and three children. More participants could have strengthened the study results. Additionally, the research started on April 15<sup>th</sup> and ended on June 26<sup>th</sup> due to the end of the

academic school year. Starting the study a month earlier would have allowed for an extended data collection period for Child A.

The medium of training delivery may have also posed a limitation. The researcher initially planned on using the free version of Canvas to publish the training materials, as it is known for its efficiency, reliability, and durability. However, Canvas has restrictions on the size of the files which did not accommodate the large size of the training materials. Therefore, OneDrive was used to publish the materials. The researcher had limited information on whether the teachers viewed all the training materials as they self-reported completing watching all training materials to the researcher. Additionally, the teachers had to download the pre-posttests and email them to the researcher. The teachers needed to be prompted frequently to complete that step. It could have been more feasible if the pre-posttests had been designed online so teachers could complete and submit them.

## **Conclusion**

In conclusion, this study examined teachers' knowledge after training, implementation fidelity after coaching, the rating of acceptability, appropriateness, and feasibility of shared book reading by teachers and other administrators, and the rate of child spontaneous commenting as an outcome. Results from the study indicated that teachers improved their knowledge after the training. Additionally, a functional relation existed between practice-based coaching and teachers' implementation fidelity. Moreover, ECSE staff rated shared book reading training as acceptable, appropriate, and feasible to be used in Abu Dhabi. However, only one child showed an increase in spontaneous commenting on the book after teachers received coaching support, but this may have been due to the limited time span of the study, and a longer span of intervention may have been necessary to support increases in child spontaneous commenting.

The shared book reading strategy can be beneficial to improve the social and educational outcomes of children with autism in the UAE if used with fidelity after teachers have received training and coaching. This research provides evidence that researchers in the region should examine shared book reading with different samples at different centers or schools.

APPENDIX A

FIDELITY CHECKLIST FORM

Using Shared Book Reading to Support Child Spontaneous Commenting

**Teacher name:**

**Date of recording:**

**Coder Initials:**

**Date coded:**

Before Storybook Reading	Exemplary (4)	Proficient (3)	Developing (2)	Emerging (1)	No Evidence (0)	(N/A)
<p>1. Teacher arranges the environment</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• Teacher sits in the reading area or a quiet area with minimal noise and distraction</li> <li>• Teacher offers a seating option to the child(e.g., regular table and desk, bean bag, on the floor, standing)</li> <li>• Teacher sits or stands facing the child</li> </ul> <p>Evidence:</p>						
<p>2. Teacher has all intervention materials ready.</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• Teacher has the box that includes the stories and engagement tools to be used during the session.</li> <li>• Teacher places the stories on the table.</li> </ul> <p>Evidence:</p>						

<p>3. Teacher gets the child's attention.</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• Teacher calls the child's name</li> <li>• Teacher points to the books on the table</li> </ul> <p>Evidence:</p>						
<p>4. Teacher offers a choice of books to the child and reads the title of the book.</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• Teacher asks the child, "What book do you want to read today?" or says, "Pick a book."</li> <li>• After the child selects a book, the teacher will pick two or more of the engagement tools that are prepped by the researcher to be used and place them on the table or hang them on the wall.</li> </ul> <p>Evidence:</p>						
<p><b>During Storybook Reading</b></p>	<p><b>Exemplary (4)</b></p>	<p><b>Proficient (3)</b></p>	<p><b>Developing (2)</b></p>	<p><b>Emerging (1)</b></p>	<p><b>No Evidence (0)</b></p>	<p><b>Not Applicable (NA)</b></p>
<p>5. Teacher offers child opportunities to initiate.</p> <ul style="list-style-type: none"> <li>• Teacher and child take turn (e.g., matching pictures from the story, or placing scanned pictures in a plastic jar, or talking about pictures under the Post-it or</li> </ul>						

<p>pictures hanged in the wall)</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• (e.g., teacher chooses one or more engagement tools during reading time)</li> </ul> <p>Evidence:</p>						
<p>6. Teacher uses prompting hierarchy to support the child when they did not independently initiate after 5s.</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• 1. Teacher uses time delay (e.g., wait for 5s)</li> <li>• 2. Teacher uses indirect verbal prompting (e.g., what do you see)</li> <li>• 3. Teacher uses gestures (e.g., pointing to the picture)</li> <li>• 4. Teacher uses full verbal prompting and model (e.g., it is a red bird)</li> <li>• 5. Teacher attends to the child's pace (e.g., the child needs more than 5s to comment, and the teacher waits for another 5s).</li> </ul> <p>Evidence:</p>						
<p>7. Teacher expands on child's language.</p> <p><b>Pay attention to:</b></p>						

<ul style="list-style-type: none"> <li>• Example: Child says, "Bird", and the teacher says, "Red bird."</li> </ul> <p>Evidence:</p>					
<p>8. Teacher provides natural to tangible reinforcement.</p> <p><b>Pay attention to:</b></p> <ul style="list-style-type: none"> <li>• Teacher attends to child pacing and selects appropriate reinforcers (e.g., a child prefers to be tickled instead of verbal praise, and teacher tickles them when commenting independently)</li> <li>• Teacher provides social reinforcement when the child independently initiates (e.g., Way to go, Fatima! You are correct; that is a red bird standing on the tree)</li> <li>• Teacher provides physical praise (e.g., high five or pat on the back)</li> <li>• Teacher provides tangible reinforcement</li> </ul>					

when required (e.g., provide a small piece of edible)						
Evidence:						
<b>After Storybook Reading</b>	<b>Exemplary (4)</b>	<b>Proficient (3)</b>	<b>Developing (2)</b>	<b>Emerging (1)</b>	<b>No Evidence (0)</b>	<b>Not Applicable (NA)</b>
9. Teacher says, "The end" or "All done." "You did a great job commenting on the book!"  <b>Pay attention to:</b> <ul style="list-style-type: none"> <li>Teacher closes the book and asks the child to put it back in the box</li> </ul> Evidence:						
10. Teacher praises the child for sitting, listening, and participating during the storybook reading.  <b>Pay attention to:</b> <ul style="list-style-type: none"> <li>Teacher says, "Fatima, you sat nicely during reading time, listened to the story, and commented on the book!"</li> </ul> Evidence:						
<b>Total points earned:</b>						
<b>Total fidelity points: 40</b>						
<b>Total earned: /40 *100 = %</b>						

Definition of codes:	
Exemplary 4	Strong evidence shows that the teacher met or exceeded the application of strategies. <ul style="list-style-type: none"> <li>• Very little feedback is required</li> </ul>
Proficient 3	Teacher appropriately applied the strategies <ul style="list-style-type: none"> <li>• Some feedback is required to improve the implementation</li> </ul>
Developing 2	Teacher applies the strategies half of the time or inconsistent application. <ul style="list-style-type: none"> <li>• Significant feedback is required to improve the use of skills and strategies.</li> </ul>
Emerging 1	Teacher applies the strategies once, and there is a need to support for high-quality implementation. <ul style="list-style-type: none"> <li>• Coaching is required to improve the implementation.</li> </ul>
No Evidence 0	No evidence of applying the strategies. <ul style="list-style-type: none"> <li>• Teaching the skill and coaching is required to improve implementation.</li> </ul>
Not Applicable N/A	Skill cannot be applied in the setting.

APPENDIX B

RATE RECORDING RUBRIC

**Child name:**

**Date of recording:**

**Coder Initials:**

**Date coded:**

Sessions	Baseline (B)/ Intervention (I)	Time started	Time ended	Total observation time	Tally mark spontaneous commenting	Tally mark prompted commenting
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						

APPENDIX C

Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention (FIM)

**Acceptability of Intervention Measure (AIM)**

	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
1. Using the shared book reading strategy to support child spontaneous commenting meets my approval.	①	②	③	④	⑤
2. Using the shared book reading strategy to support child spontaneous commenting is appealing to me.	①	②	③	④	⑤
3. I like using shared book reading strategy to support child spontaneous commenting.	①	②	③	④	⑤
4. I welcome using shared book reading strategy to support child spontaneous commenting.	①	②	③	④	⑤

**Intervention Appropriateness Measure (IAM)**

	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
1. Using shared book reading strategy to support child spontaneous commenting seems fitting.	①	②	③	④	⑤
2. Using shared book reading strategy to support child spontaneous commenting seems suitable.	①	②	③	④	⑤

3. Using shared book reading strategy to support child spontaneous commenting seems applicable.	①	②	③	④	⑤
4. Using shared book reading strategy to support child spontaneous commenting seems like a good match.	①	②	③	④	⑤

### Feasibility of Intervention Measure (FIM)

	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
1. Using shared book reading strategy to support child spontaneous commenting seems implementable.	①	②	③	④	⑤
2. Using shared book reading strategy to support child spontaneous commenting seems possible.	①	②	③	④	⑤
3. Using shared book reading strategy to support child spontaneous commenting seems doable.	①	②	③	④	⑤
4. Using shared book reading strategy to support child spontaneous commenting seems easy to use.	①	②	③	④	⑤

مقياس قبولية التدخل (AIM) ، ملاءمة التدخل (IAM) ، وجدوى التدخل (FIM)

### مقياس قبولية التدخل (AIM)

أوافق بشدة	لا أوافق	لا أوافق ولا أرفض	أوافق	لا أوافق بشدة	
⑤	④	③	②	①	1. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل تحظى بموافقتي.
⑤	④	③	②	①	2. يعد استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل أمرًا جذابًا بالنسبة لي.
⑤	④	③	②	①	3. أنا أحب استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل.
⑤	④	③	②	①	4. أنا أرحب باستخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل.

### مقياس ملاءمة التدخل (IAM)

أوافق بشدة	لا أوافق	لا أوافق ولا أرفض	أوافق	لا أوافق بشدة	
⑤	④	③	②	①	1. يعد استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل أمراً مناسباً في المركز.
⑤	④	③	②	①	2. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل تبدو مناسبة لاحتياج الطفل.
⑤	④	③	②	①	3. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل ملاءمة.
⑤	④	③	②	①	4. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل بمثابة تطابق جيد.

#### مقياس جدوى التدخل (FIM)

أوافق بشدة	لا أوافق	لا أوافق ولا أرفض	أوافق	لا أوافق بشدة	
⑤	④	③	②	①	1. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل قابلة للتطبيق.
⑤	④	③	②	①	2. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل أمر ممكن.
⑤	④	③	②	①	3. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل أمر ممكن للتنفيذ.
⑤	④	③	②	①	4. استخدام إستراتيجية قراءة الكتاب المشتركة لدعم التعليق العفوي للطفل يبدو أنها سهلة الاستخدام.

APPENDIX D

TEACHERS INTERVIEW QUESTIONS

Questions	Researcher notes
1. How would you describe your experience in this training?	
2. If you had the opportunity to change one thing/component of your training, what would it be?	
3. Do you think the training was beneficial for children with autism in your center? <ul style="list-style-type: none"> <li>• In what way?</li> <li>• Can you give an example?</li> </ul>	
4. How would you describe your experience in this training?	
5. Do you feel the coaching was helpful? <ul style="list-style-type: none"> <li>• In what way?</li> </ul>	
6. From 1 to 10, how would you rate the quality of the training? <ul style="list-style-type: none"> <li>• Why do you think that?</li> </ul>	
7. Would you share the PowerPoint slides/videos/ materials with your colleagues?	

<ul style="list-style-type: none"> <li>• Can you specify what part/material you would share?</li> </ul>	
---	--

**DEVELOPMENT TEAM INTERVIEW QUESTIONS**

Questions	Researcher notes
1. How would you describe your experience in creating this training?	
2. If you had the opportunity to change one thing/component of your training, what would it be?	
3. Do you think the training was beneficial for children with autism in your center? <ul style="list-style-type: none"> <li>• In what way?</li> <li>• Can you give an example?</li> </ul>	
4. From 1 to 10, how would you rate the quality of the training? <ul style="list-style-type: none"> <li>• Why do you think that?</li> </ul>	
5. Do you support the implementation of this training with other teachers and children in your center?	

APPENDIX E

QUALITY OF TRAINER CHECKLIST

Trainer name:	
Observer initials:	
Date:	
Skill	Observed (Yes= 1/ No=0)
<b>Pedagogical skills</b>	
1. Trainer fosters teachers' self-assessment and reflection on own learning (e.g., pre-posttests)	
Provide an example:	
2. Trainer encourages collaboration and interaction (e.g., commenting and asking questions using discussion board)	
Provide an example:	
<b>Content skills</b>	
3. Trainer possesses content knowledge	
Provide an example:	
4. Trainer states clearly the goals and outcomes of the training	
Provide an example:	
<b>Design skills</b>	
5. Trainer provides and presents the learning materials using different formats (e.g., handout, PowerPoint)	
Provide an example:	
<b>Technological skills</b>	
6. Trainer uses various technological tools (e.g., emails, discussion board, Zoom)	
Provide an example:	
<b>Management and Institutional Skills</b>	
7. Trainer states clearly roles and expectations for teachers	
Provide an example:	
<b>Social and communication skills</b>	
8. Trainer uses various communication methods (e.g., WhatsApp, phone calls, Zoom, Emails)	
Provide an example:	
9. Trainer answers teachers' questions/misunderstanding	
Provide an example:	

APPENDIX F  
FOCUSED OBSERVATION NOTES

Teacher: ----- Coach: -----

Date:----- Time spent in observation:----- Time spent in meeting-----

Observation focus:	
What I observed:	What I want to share:
Follow up needed:	

## APPENDIX G

### EXAMPLE LESSON PLAN

#### Session 1

### Materials

Book: Dear Zoo

Engagement tools: Post-it on different pages in the book, scanned pictures for wall, matching board with scanned pictures, plastic jar with scanned pictures, coloring page with crayons

### Step 1: Getting ready for the session

1. Gather the box with intervention materials.
2. Place all the different books on the table and let the child choose one. You could say: ***What should we read?***
3. After selecting a book, you can choose two or more engagement tools to be used during the session.
4. Select a quiet area in the classroom for reading.
5. Get the activities ready! Take out materials from zip loc bags and get them ready before start reading.
  - If you select the scanned pictures, stick them on the wall.
  - If you select the matching board with scanned pictures, put them on the table or floor.
  - You can change the placement of the Post-it and put it on different pages.
  - If you select scanned pictures and plastic jar, take the photos out of the zip loc bag.
  - If you select coloring, make sure to get crayons ready.

### Engagement materials to select from:

- 1) Post-it on different pages in the book
- 2) Scanned pictures for wall
- 3) Matching board with scanned pictures
- 4) Plastic jar with scanned pictures
- 5) Coloring page with crayons



## Step 2: Before reading

1. Take the child to the selected reading area.
2. Offer flexible seating for the child (sitting at a regular desk, bean bag chair, on the floor, on a rocking chair, standing, or any preferable and available seating option) You could say: **Where do you want to sit?**
3. After selecting a seating option, sit facing the child.

### Step 3: Read the book: During Reading

1. Hold the book upright and read the title. You could say: "***The title of our book is Dear Zoo***"
2. Encourage the child to talk about drawings on the cover page. You could say: "***What do you see?***". Pause for 5s to allow the child to comment. If no response you could say: "***I see a red cage and a lion!***"
3. Take turns with the child to comment about the book.
4. Start reading the first page "***I wrote to the zoo to send me a pet. They sent me an..***"
5. lift the flap and the Post-it and say, "***Big elephant!***" "***They sent a big elephant!***" "***Too big! We have to return it back***" Point to the elephant on the wall and say "***Big gray elephant***"
6. Say: "***let's find the elephant***" match the picture of the elephant on the matching board.
7. Read the third page "***they sent a...***"
8. Get the book closer to the child to indicate their turn to comment.
9. Wait for 5s for the child to comment. If the child initiated without prompting deliver social or tangible reinforcer. You could say "***You are right, giraffe!*** And expand "***Tall yellow giraffe***"  
Do this if no response:
  - Point to the flap and the Post-it (if no response move to the next)
  - Point to the picture of the giraffe on the wall (if no response move to the next)
  - Say, "***What do you see?***" (if no response move to the next)
  - Point to the giraffe and say "***giraffe***" (if no response move to the next)
  - Say, "***can you say giraffe?***"? If the child repeated after you expand on their comment and say, "***tall giraffe***" (if no response move to the next)
  - Use the scanned photo and say, "***tall giraffe***" and place it in the plastic jar.
10. Take turns with the child to comment about the book and use engagement tools to encourage commenting.

### Step 4: After reading

1. End the story by saying: "***All done! The end***". Ask the child to help you put the book in the box. Also, praise the child for sitting, listening, and participating during the storybook reading. You could say, "***Fatima, I like how you were sitting nicely and commenting on the story!***"

APPENDIX H

FIDELITY OF COACHING IMPLEMENTATION

Coach name:	
Observer initials:	
Date:	
Items	Observed (Yes= 1/ No=0)
Shared goals and action planning	
1. Coach asks questions to understand the need of the teacher (e.g., ask about challenges, priorities, and needs)	
Provide an example:	
2. Coach encourages the teacher to talk about their goals for the coaching session (e.g., identify the goal together, set an action plan, set a timeline)	
Provide an example:	
Focused observation	
3. Coach review with the teacher the goal	
Provide an example:	
4. Coach observes the teacher demonstrating the strategy	
5. Coach provides support to the teacher during the observation (e.g., modeling the strategy, verbal, visual or gestural prompting, or offering a suggestion)	
Provide an example:	
Feedback and follow up	
6. Coach allows the teacher to reflect on their demonstration of the strategy	
Provide an example:	
7. Coach summarizes what happened in the observation.	
Provide an example:	
8. Coach shares areas of strengths and improvement with the teacher.	
Provide an example:	
9. Coach provides support strategies for the teacher (e.g., materials and resources, problem solving, conversations, or modeling)	
Provide an example:	
10. Coach asks the teacher if they have any questions or challenges.	
Provide an example:	

## APPENDIX I

### EXAMPLE OF COACHING LETTER

المعلمة \*\*\*\*\* المحترمة

تحية طيبة وبعد،،،

شكراً لكم على إتاحة الفرصة لي لمشاهدتكم تطبيق إستراتيجية القراءة المشتركة في الفصل. بناءً على خطة العمل الخاصة بكم، تركيزنا الكلي في هذه الجلسة كان على تذكر خطوات تهيئة البيئة الصفية التي تشمل (ترتيب الصف، إحضار جميع مواد جلسة التدخل، لفت انتباه الطالب، وعرض القصص على الطالب).

من خلال ملاحظتي للجلسة لاحظت العديد من الأشياء المهمة التي تم تطبيقها باحترافية من قبلكم:

(1) تجهيز مواد جلسة التدخل قبل البدء فيها

(2) التفاعل والإجابة على سؤال الطالب وعدم تجاهله بالرغم من انشغالكم بتجهيز الأدوات

(3) أيضاً عرض القصص على الطالب وإتاحة المجال للاختيار

يمكننا تحسين مستوى تطبيق خطوات تهيئة البيئة الصفية ب:

(1) اختيار أدوات التفاعل المناسبة. بالإمكان عدم استخدام الأوراق الملونة على الكتاب لما يسبب تشتت لطلابكم

(2) أيضاً بعد اختيار الكتاب يتم إرجاع اللعبة للطالب لإتاحة الفرصة لكم لتجهيز أدوات التدخل بسلاسة

(3) أيضاً يمكنكم إرجاع الكتاب إلى الصندوق بعد اختيار الطالب له حتى لا يلمسه لحين البدء في الجلسة

لتسهيل تذكر الخطوات سيتم كتابتها وإرسالها لكم بطريقة مبسطة.

الخطوة التالية لخطة العمل الخاصة بكم هي التأكد من إحراز (معياري مثالي) لكل خطوات تهيئة البيئة المناسبة. نلتقيكم الجلسة

التالية!

تحياتي

لمياء الحمودي

APPENDIX J

BOOKS USED IN THE STUDY



Outlook Search

Share Copy link Download Export to Excel Automate

Sort Details

My files > تدريب\_القراءة\_المشتركة

Name	Modified	Modified By	File size	Sharing	Activity
الوحدة الأولى	May 12	Lemya Alhmodi	3 items	Shared	
الوحدة الثالثة	May 13	Lemya Alhmodi	3 items	Shared	
الوحدة الثانية	May 12	Lemya Alhmodi	3 items	Shared	
الوحدة الخامسة	May 17	Lemya Alhmodi	2 items	Shared	
الوحدة الرابعة	May 12	Lemya Alhmodi	3 items	Shared	
لوحة المناقشة	May 12	Lemya Alhmodi	1 items	Shared	

Module 1\_Arabic Saved Search (Alt + Q)

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Comments Catch up Present Editing Share

1: تهيئة البيئة المناسبة (الوحدة الأولى)

2: المحتوى

3: الأهداف الواضحة

4: مبادئ التعلم

5: 01

Module 2 Arabic Saved Search (Alt + Q)

File Home Insert Draw Design Transitions Animations Slide Show Review View Help

Comments Catch up Present Editing Share

1: دعم وتعزيز التواصل (الوحدة الثانية)

2: المحتوى

3: أهداف الوحدة الثانية

4: مخرجات التعلم

5: 01 قبل البدء: إذا لم تكن قد فعلت الاختبار المسبق، فوافق القبول بوقت واحد!

# دعم وتعزيز التواصل (الوحدة الثانية)

تقديم: لمياء سعيد الحمودي (M.S.Ed.)  
مرشحة للدكتوراه  
التربية الخاصة والعلوم السريرية  
جامعة أوريغون

Module 3\_Arabic Saved Search (Alt + Q)

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Comments Catch up Present Editing Share

1: التسلسل الهرمي للمعززات (الوحدة الثالثة)

2: المحتوى

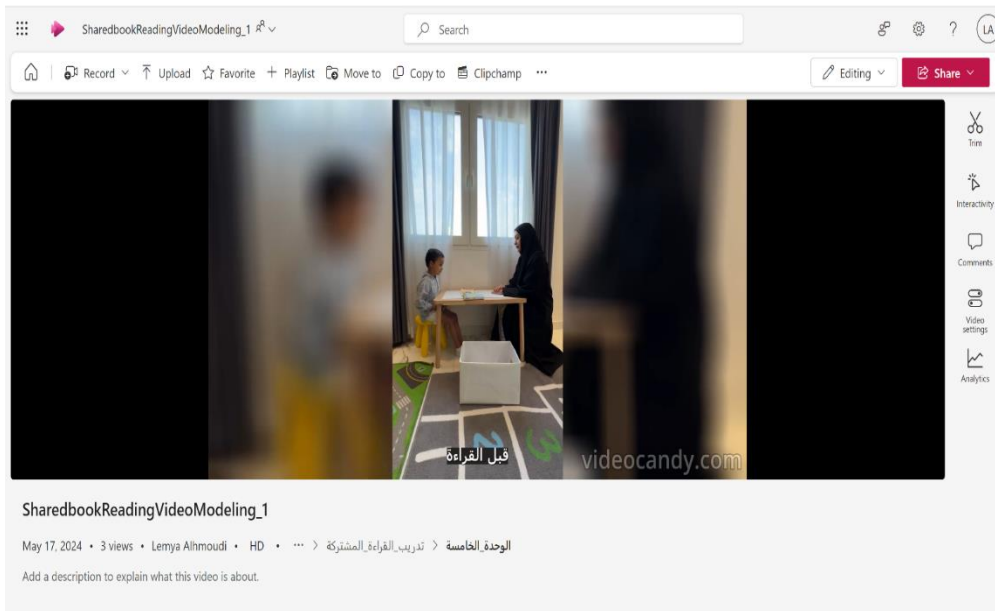
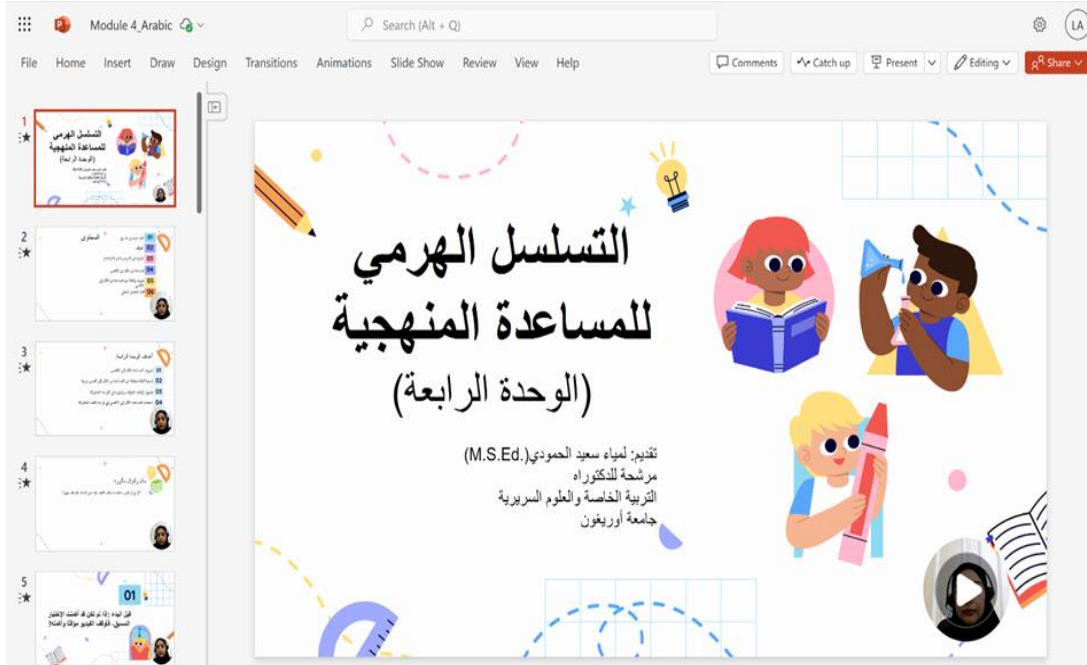
3: أهداف الوحدة الثالثة

4: مخرجات التعلم

5: 01 قبل البدء: إذا لم تكن قد فعلت الاختبار المسبق، فوافق القبول بوقت واحد!

# التسلسل الهرمي للمعززات (الوحدة الثالثة)

تقديم: لمياء سعيد الحمودي (M.S.Ed.)  
مرشحة للدكتوراه  
التربية الخاصة والعلوم السريرية  
جامعة أوريغون




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Add a description to explain what this video is about.

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