

# The Effectiveness of the Interactive Sensory Book in Developing Language Skills among Kindergarten Children

Dr. Rasha Sayed Ahmed Mohamed

Assistant Professor, Department of Early Childhood King Khalid University,  
relsayed@kku.edu.sa

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## Abstract

The current research aimed to develop some language skills among kindergarten children through the use of the interactive sensory book, and the study sample included (60) children from the second level of kindergarten, aged from (5-6) years, they were divided into two groups, one experimental consisted of (30) children and his child, and the other control consisted of (30) children and his child, and the experimental approach was used for its suitability to the nature of this research, and was determined Research tools in: an opinion poll to determine the appropriate language skills for the kindergarten child (prepared by the researcher), a list of language skills specified in the research (prepared by the researcher), and the scale of illustrated language skills for the kindergarten child (prepared by the researcher), interactive book activities for the development of language skills (prepared by the researcher), the results have resulted in statistically significant differences between the average scores of the children of the experimental and control groups on the scale of language skills illustrated in the dimensional measurement in favor of the experimental group, and the existence of statistically significant differences between The average scores of the children of the experimental group in the pre- and post-measurements of the illustrated language skills scale in favor of the post-measurement, and the research reached the effectiveness of the interactive book in developing language skills among kindergarten children.

**Keywords:** interactive book- language skills - kindergarten child.

## 1. Introduction

The kindergarten is an educational institution of great importance in the early childhood stage of a child's life. It is within this framework that the most significant aspects of sensory-motor, cognitive, and linguistic development are achieved. This is done through educational programs based on scientifically and methodologically grounded educational and recreational activities, aiming to develop the child's knowledge, stimulate their educational, social, and linguistic readiness and abilities. The comprehensive development of the child's senses, abilities, inclinations, and various aptitudes is emphasized to prepare them for enrollment in primary school. This requires the kindergarten to provide a rich environment with diverse activities and tools that contribute to the development of linguistic growth skills.

Since the use of language is essential for every child to express their needs, emotions, and thoughts, the kindergarten teacher provides educational experiences to develop various communication skills that enable the child to acquire reading and writing skills when they enter school. The study by Abu Saleh (2017) aligns with this view, considering kindergarten as the most crucial stage for preparing the child to acquire the four language skills (listening, speaking, reading, and writing). This is achieved by equipping the child with readiness skills, highlighting that these skills are intertwined and interconnected. Through dialogue, listening, and conversation, the child acquires new vocabulary, which may include names of objects seen in pictures, compares the image with the written name, visually distinguishes between different shapes, and recognizes similarities and differences between sound, image, pronunciation, and printed words through enrichment activities (sensory interactive) that serve as a fundamental gateway for the child to acquire language skills. The senses are the doors to knowledge and the means of communication, interaction, and contact with the environment and social surroundings to which the child belongs, aiding in speaking, listening, and reflecting on the learning of reading and writing (Mohamed, 2008).

These perspectives align with the social constructivist theory of Vygotsky, which emphasizes the role of social interaction in language development in children (Brodin & Renblad, 2020). This requires effective linguistic communication and the mastery of the four language skills—listening, speaking, reading, and writing. These skills are not separate but should be achieved within a holistic and integrated framework. A deficiency in one of these skills negatively affects the others, while developing any one skill positively impacts the others (Abdel Sattar, 2021). As the child acquires these skills, many studies have focused on identifying the communication skills necessary for children at this stage (Barsoum et al., 2018). The studies by Al-Shammari & Al-Olaymat (2019) and Abdel Sattar (2021) agreed on identifying the communication skills as follows: listening, speaking, readiness for reading, and readiness for writing.

The researcher believes that it is essential to harness the child's energy to employ their linguistic abilities by engaging their senses and captivating their interest using tools that draw their attention and help them focus, understand, and comprehend. This, in turn, will enhance their linguistic skills, including listening, speaking, reading, and writing, through a set of sensory activities that aid in developing these skills within a framework of encouragement and reinforcement for the children.

Many studies and research have recommended focusing on sensory activities and their use in developing a child's skills as one of the educational methods in early childhood. For instance, the study by Jamal Abdel-Aty Mohamed (2017) recommended the necessity of equipping the educational classroom with the necessary tools to use sensory exercises with children. The study by Hamza (2018) recommended using sensory activities as an educational method to develop mathematical thinking skills in kindergarten. Another study by Ahlam Qutb Faraj (2021) aimed to reveal the effectiveness of a program based on sensory and digital activities in developing some geographical concepts and tourism awareness among children.

From the above, the researcher concludes that sensory activities are of great importance for children in early childhood as they help develop the child's senses by providing them with various stimuli appropriate to their abilities. These activities are among the most suitable educational

activities offered to children, as they help in creating a learning environment that surrounds the child, leading to the best and highest results in the comprehensive development of the child's senses, abilities, inclinations, and various aptitudes and working on their development.

The aspect of linguistic development holds a prominent position due to the significant functions that language serves for humans. Language is not only a tool for communication and understanding but also a crucial instrument for forming concepts. The stage of linguistic readiness is described as the fundamental pillar for acquiring reading skills for the child. It is also an indicator of the child's future level in terms of progress or delay in the stage of learning to read, which may take the preschool years depending on the child's ability.

Educational psychological studies have focused on the role of the sensory interactive book for preschool children in developing their skills, considering it one of the best educational tools due to its ability to capture the child's attention and stimulate their wide imagination. It is also an appropriate method for acquiring the four language skills (listening, speaking, reading, and writing). Therefore, it is essential for educators to use techniques for interacting with children and follow up with activities that stimulate their imagination, reveal their linguistic abilities, enrich their vocabulary, and reinforce concepts and words. Encouraging children to speak and verbally express their impressions and ideas is vital, as language development in this stage is characterized by several factors, including the child's tendency to relate language to tangible objects, and the expansion of their vocabulary due to their curiosity and desire to explore (Tompkins et al., 2017).

A study by Rutledge (2003) demonstrated that sensory programs and free activities have an impact on sensory development in early childhood. The current research agrees with previous studies on the importance of applying the strategy of the sensory interactive book in education, following the experimental method for both the experimental and control groups.

Listening skills are considered a fundamental prerequisite for mastering other language skills. For example, one cannot pronounce a word correctly without first hearing it correctly. This can be explained by the fact that individuals who possess advanced listening skills can speak more accurately and with greater proficiency because they have a sufficient reservoir of sentences and words. Moreover, listening accounts for nearly half of the activities used in the communication process (Kurniasih, 2011).

Developing speaking skills in kindergarten children helps them interact and communicate socially with others, boosts their self-confidence, and instills principles of initiative and spontaneity in talking about their daily experiences and expressing their ideas.

On the other hand, readiness for reading is one of the indicators of cognitive development. A child has the potential to learn to read, which garners attention due to the awareness of educational policymakers about the importance of harnessing and directing children's abilities and readiness in ways that ensure their optimal use. As a result, preparatory educational programs are provided for preschool children before they begin formal reading programs in school (Bugnbo, 2020).

The importance of reading readiness becomes evident in preparing the child to later acquire the skill of reading. It can be said that it is difficult to find an activity that does not require reading, whether at school, home, or work. Reading has a broad and profound impact on a child, as it expands and enriches their experiences, stimulates their intellectual abilities, refines their taste, and satisfies their beneficial curiosity to understand themselves and others. Through reading, a child can achieve academic success, acquire various knowledge, and develop self-learning skills (Souman, 2014).

A study by Al-Rifai et al. (2020) aimed to explore the role of kindergarten teachers in training preschool children on reading readiness skills. For a preschool child, writing cannot be practiced until they have developed readiness for writing. Al-Nashif (2015) explains that the development of writing in learners goes through three stages: readiness for writing, writing, and mastering writing, meaning writing with strokes that reflect the learner's maturity and ability to produce the required patterns in writing. The kindergarten stage corresponds to the readiness for writing, also known as the pre-writing stage. During this stage, the child needs various preparatory activities before engaging in the actual writing process. Writing readiness refers to the state of being mentally, physically, and emotionally prepared to acquire the basic skills necessary for learning to write.

The importance of writing readiness for kindergarten children is evident in how it helps them draw letters and words correctly according to established linguistic rules. It also trains them to be precise, persistent, and to strive for improvement in order to achieve a higher level of performance. Additionally, it helps them develop the ability to retain the heard letter, recall and visualize the written form, and distinguish between spoken and written words. This is due to the integration of auditory and visual dimensions in writing (Abdel Sattar, 2021).

The study by Abdel Mohsen (2018) aimed to explore the educational practices of kindergarten teachers in enhancing reading and writing skills in preschool children. This underscores the necessity for kindergartens to focus on developing the basic language skills—listening, speaking, reading, and writing—during the early educational stages and avoid separating them except at more advanced stages. This can be achieved by incorporating various sensory interactive linguistic activities based on the child's daily experiences.

One of the most important methods for developing linguistic skills in preschool children is to prepare an environment rich in activities that interact with the child and provide them with various direct and indirect experiences and skills. This environment contributes to forming the child's readiness to learn language skills (Khidr & Shaaban, 1996: 74). Several studies, such as Rossman (1980) and Doake (1979), have indicated that reading stories to children in early childhood is beneficial for their reading development and should be emphasized in any program designed for children (Al-Qudah & Al-Tartouri, 2006: 133). Reading stories also helps increase the child's vocabulary and encourages them to speak in a correct manner (Al-Hassan, 2000: 95), as confirmed by Al-Nashif (2007: 126). Studies have emphasized the role that kindergartens can play in helping children master reading skills in the future by providing them with reading readiness skills, so that children enter primary education equipped with these abilities and skills (Al-Tahan, 2003: 19). Attempting to teach children language skills before they are ready may

lead to extending the required learning time and causing stress for the child, and in some cases, it might result in forming negative attitudes towards reading (Al-Nashif, 2007: 31).

Success in reading is closely linked to the ability to distinguish auditory sounds between different and similar-sounding letters, as well as the child's ability to discern auditory differences between the beginning and ending sounds of words. Children need planned activities designed to improve their auditory skills (Abdullah, 2002: 253-255). Auditory skills do not rely solely on hearing but also require mental activity to process and interpret sounds, converting them into words and sentences to give meaning to these sounds (Al-Tahan, 2003: 33).

Children who possess listening skills, such as memory and auditory discrimination between sounds of letters and words, have higher chances of succeeding in learning to read in the future. This is related to their ability to spell words and connect letters with their sounds. Conversely, children who do not have sufficient experiences to acquire these skills are more likely to face difficulties when learning to read in the future. Reading words that they already know is easier for them compared to reading unfamiliar words. A child cannot fully understand what they read without understanding the meanings of most of the words they encounter (Al-Nashif, 2007: 36-37).

Speaking skills are fundamental in a child's linguistic development, encompassing conversation and verbal expression. Speaking is a productive skill that requires the educator to use sounds accurately and master grammatical structures, sentence systems, and word construction to assist the child in expressing their needs (Madkour, 2000: 161). Thus, teaching speaking skills holds significant importance in the child's educational curriculum, as this skill is crucial for building knowledge and culture. Through speaking, individuals understand events around them in various aspects of life, integrate effectively into social life, exchange experiences, opinions, and ideas, thereby revealing themselves and others. Speaking serves as a quick communication tool between individuals (Al-Selini, 2008: 36).

Kindergarten teachers can develop children's listening and speaking skills through interactive activities, as confirmed by several studies (Al-Saadi, 2019; Al-Saadi & Abu Al-Heijaa, 2018; Jabra, 2015; Al-Faheid, 2014). Teachers should encourage children to discuss their activities after performing them, prompting them to talk about what they did and what they plan to do next using simple sentences. This practice expands their experiences, stimulates their intellectual abilities, refines their taste, and satisfies their beneficial curiosity to understand themselves and others. Through this, children can achieve academic success, acquire various types of knowledge (Souman, 2014), and develop self-learning skills that facilitate communication and social integration. This was evident in the results of studies by Kamal (2012), Al-Tayeb (2012), Mohamed (2010), and Zahran et al (2007).

### Problem Statement

In the age of technology, traditional books no longer captivate children or satisfy their curiosity, leading to the decline of manual, sensory, and tactile skills. This research aims to explore the role of interactive sensory books in developing certain language skills (listening, speaking, reading, and writing) in preschool children. This will be achieved by implementing an educational program based on interactive books designed for children aged 5-6 years, using an

experimental method with a research sample. The goal is to engage children away from technological devices (TV, mobile phones, iPads) and their potential short-term and long-term negative effects.

Interactive books are designed to enhance the four language skills (listening, speaking, reading, and writing) in children. Acquiring these skills requires a set of abilities that should be present in the learner, especially during the early stages. Key among these are sensory, visual, and cognitive systems like the speech apparatus, auditory and visual abilities, and the capacity for reading and writing. Therefore, it is crucial to stimulate, reinforce, and develop these preparatory skills as a preliminary step for language acquisition through suitable language preparation programs, focusing on consolidating skills and ensuring the learner acquires the necessary abilities.

The study's problem became apparent from the researcher's observation of a lack of comprehensive attention by preschool teachers towards developing language skills. There is also a scarcity of studies addressing these skills in preschool children, to the best of the researcher's knowledge. Additionally, the researcher observed that many early childhood educators use traditional teaching methods that rely on rote memorization, particularly electronic methods. Consequently, there is a need for effective teaching strategies, such as the interactive sensory book strategy, which can significantly impact the development of children's language skills by building new knowledge upon existing knowledge.

The problem was further clarified through a questionnaire administered to children to assess their language skill levels by asking questions about their surroundings. The results indicated weaknesses in the language skills of preschool children, with a reliance on sensory experiences. To confirm the problem, the researchers conducted a preliminary study by applying a questionnaire to a sample of 20 preschool teachers. This survey aimed to understand the extent of preschool teachers' focus on developing language skills and to identify teaching strategies used that incorporate sensory experiences. The results showed that 76% of teachers used lecture-based methods, and 74% did not integrate language skills comprehensively but rather addressed each skill separately and with a focus on tangible experiences.

Based on the above observations and the recommendations of previous studies emphasizing the importance of integrating interactive sensory books into the educational process—considered a contemporary interactive teaching method with positive effects on skill development, and given the rarity of studies on the strategy of interactive sensory books with preschool children—the study seeks to address these gaps.

### Research Problem

The current research problem is defined by the main question:

- What is the effectiveness of interactive sensory books in developing language skills in preschool children?

This main question is broken down into several sub-questions:

What language skills need to be developed in preschool children?-

-What interactive sensory book activities are suitable for developing language skills in preschool children?

-What are the components of the illustrated language skills assessment for preschool children

-What are the components of the program based on interactive sensory books for developing language skills in preschool children?

-What is the effectiveness of a program based on interactive sensory books in developing language skills in preschool children?

#### Research Objectives:

The current research aims to achieve the following objectives:

-Identify and work on developing language skills in preschool children.

Determine and use suitable interactive activities to develop language skills. -

- Develop an illustrated language skills assessment tool to measure the presence of these skills in preschool children.

- Develop a program based on interactive sensory books to enhance language skills in preschool children.

#### :Importance of the Research

-The importance of the study lies in its focus on the role of interactive sensory books in developing language skills in early childhood. This period is crucial for establishing the child's personality and uncovering and enhancing their linguistic and cognitive abilities.

-Interactive activities are among the most engaging and enjoyable for children, as they stimulate imagination and creativity in the four language skills (listening, speaking, reading, and writing) through dialogue, discussion, and feedback. These activities help children acquire a meaningful linguistic repertoire.

-The research provides information and activities related to the interactive sensory book strategy, benefiting curriculum developers in refining early childhood curricula according to this approach.

-This study aligns with modern educational trends and strategies used in teaching children.

-The research extends the efforts of previous researchers and responds to contemporary demands for diverse and effective teaching strategies that place the learner at the center of the educational process.

-The research aims to provide an illustrated language skills assessment tool suitable for preschool children.

-The study offers a program based on interactive activities to develop semantic memory skills in preschool children.

### Research Terms: Defined Operationally by the Researchers:

-Educational Program: Refers to the experimental program proposed in the current research, which is based on interactive educational and social activities aimed at preschool children. It employs various narrative and dialogue techniques to develop certain language skills (listening, speaking, reading, and writing) through 16 sessions spread over 8 weeks, with two sessions each week.

-Interactive Sensory Book: An interactive sensory book for preschool children is a type of educational tool designed to enhance learning through multi-sensory activities. This type of book provides a learning experience that engages the five senses (touch, sight, hearing, smell, and sometimes taste) to stimulate cognitive, linguistic, and skill development. Typically, sensory books include tangible materials and tools such as fabrics, smooth and rough paper, buttons, leather, recorded sounds, and even integrated scents. The activities are designed to capture the child's attention and encourage active participation in learning, whether through touching different materials, listening to sounds, or playing with magnetic pieces or stickers.

### Language Skills:

-Definition by Al-Olayan (2000): Language skill is defined as a linguistic performance, either auditory or non-auditory, characterized by speed, accuracy, efficiency, and understanding, considering the rules of spoken and written language. The auditory dimension refers to spoken language, while the non-auditory dimension refers to written language.

-Definition by Madkour (2000): Language skills are defined as the components of linguistic communication that are interconnected, with each component affecting and being affected by the others.

-Definition by Bdeir and Sadiq (2005): Language skills are the arts of language consisting of four main skills: listening, speaking, reading, and writing (Saeed & Murad, 2018).

-Operational Definition of Language Skills in This Research: In this study, language skills are defined as the Arabic language abilities acquired by preschool children, including listening, speaking, reading, and writing skills, to meet their linguistic communication needs and prepare them for language acquisition in the preschool stage.

### Listening Skills:

-General Definition: Listening skills involve the child's ability to distinguish and remember various similar and different sounds and words, recognize and connect them, and understand the meaning of words. This is measured by the score a child obtains on the Listening Skills Scale developed by Khaleel (2003) for measuring language skills.

-Definition by Abdel Qader (1982): Listening is a mental process requiring effort from the listener to follow the speaker, understand what is said, penetrate their thoughts, retrieve them if necessary, and connect multiple ideas.

-Definition by Jumaa (2006): Listening is the receptive aspect of verbal communication in language. Without it, verbal communication cannot occur. It requires mental activity from the

listener, including paying attention, hearing the spoken expressions, understanding their meaning, and retrieving them if necessary.

-Operational Definition of Listening Skills in This Research: In this study, listening skills for preschool children mean the ability to focus and pay attention to surrounding sounds and speech, understand the meanings and information expressed verbally.

#### Speaking Skills:

-Definition by Abu Al-Adous (2000): Speaking skills are those oral habits used in various social situations, such as exchanging ideas, engaging in dialogue and greetings, using the telephone, starting meetings, and other contexts.

-Definition by Abdul Qader Al-Jurjani (1992): Speaking is a means of expressing meanings, thoughts, emotions, and feelings that stir within people in a manner that is coherent and aligned with the intellectual requirements.

- Operational Definition in This Research: Speaking skills in this study are defined as the child's ability to pronounce letters and words correctly, construct sentences, and use language to express thoughts and feelings to communicate effectively with others and adapt to their surroundings. This includes sub-skills such as accurate pronunciation, performance precision, verbal fluency, coherence and cohesion, and functional use.

#### :Reading Skills

-Operational Definition in This Research: Reading skills are defined as a set of abilities that help the child understand and use written symbols (letters and words) to construct meaning. These skills include:

-Phonemic Awareness: The child's ability to distinguish different sounds in words.

-Visual Discrimination: The ability to recognize letters and words and associate them with meanings.

-Print Awareness: The child's understanding that text has meaning and that reading is done from left to right (in Arabic).

-Letter Recognition: The ability to identify letters and their sounds.

-Basic Text Comprehension: The ability to understand simple meaning through images and short texts.

#### :Writing Skills

-Operational Definition in This Research Writing skills refer to the fundamental abilities that help the child express thoughts and desires through the use of written symbols. These skills include:

-Fine Motor Control: The ability to control hand and finger muscles to hold a pencil or writing tool correctly.

-Letter Recognition: The ability to write letters accurately and associate them with their sounds.

-Drawing and Copying: The ability to copy shapes, letters, and words seen.

- Initial Written Expression: The child's attempt to write their name or simple words to express thoughts, even if the writing is not precise or clear.

-Understanding Writing Directions: The child's awareness that writing in Arabic is done from right to left and that there is a specific order for letters in words.

-Preschool Child: Refers to a child aged between 5-6 years, selected to be part of the experimental sample for the research.

## **2. Research Methodology**

- The study utilized an experimental design with both experimental and control groups, applying pretest and post-test measurements to evaluate the effectiveness of the interactive sensory book strategy in developing language skills among preschool children.

Research Hypotheses:

Based on the research problem and its questions, the following hypotheses were formulated:

-There are statistically significant differences between the mean scores of the experimental group and the control group on the illustrated language skills scale in the post-test, favoring the experimental group.

-There are statistically significant differences between the mean scores of the experimental group on the illustrated language skills scale in the pre-test and post-test, favoring the post-test.

-The program based on the interactive sensory book is effective in developing language skills among preschool children.

Research Boundaries:

The current research is delimited by the following boundaries:

- Objective Boundary: The interactive sensory book strategy and language skills (listening skill, speaking skill, reading skill, writing skill).

-Spatial Boundary: Research tools were applied at the Fifth Kindergarten in Abha, Asir Educational Region.

-Temporal Boundary: The research procedures were conducted in the second semester of the 2023/2024 academic year.

-Human Boundary: Children in the second level of preschool, aged 5-6 years.

Research Tools:

:Data Collection Tools

- Opinion Survey Form: To determine the language skills that need to be developed for preschool children.

-Opinion Survey Form: To identify suitable interactive activities for developing language skills.

#### Measurement Tools:

-Raven's Colored Progressive Matrices Test: Developed by Ibrahim Mustafa Hamad (2008) to assess cognitive abilities.

- Illustrated Language Skills Scale for Preschool Children: Constructed by reviewing previous scales, including:

-Speaking Skills Scale: Developed by Al-Saadi and Abu Al-Hija (2012) to measure five sub-skills of speaking: correct pronunciation, performance accuracy, verbal fluency, coherence and cohesion, and functional performance. Each skill has two behavioral indicators, evaluated using the five-point Likert scale, with a reliability coefficient of 0.83 and validity of 86.66%.

-Listening Skills Scale: Developed by Khalil (2003) to assess two sub-skills of listening: auditory discrimination and auditory memory. The scale is based on the five-point Likert scale, with validity ranging between 0.52 and 0.78, and reliability between 0.82 and 0.86 (Saeed and Murad, 2018), suitable for the research objectives.

#### :Experimental Processing Tools

-Interactive Book-Based Program: Designed to develop language skills through interactive activities.

#### Methodological Procedures of the Research:

##### : Experimental Design of the Research

The methodological procedures followed in this research include the methodology and tools used, field study, and statistical methods for data analysis.

### **3. Research Method:**

An experimental method was employed due to its suitability for the nature of the research. This involved designing two groups (experimental and control) and using pre-test and post-test measurements to determine the impact of the independent variable (interactive sensory book) on the dependent variable (language skills).

#### Research Population and Sample:

The research population consists of all public kindergartens in the Asir Educational Region. The Fifth Kindergarten in Abha was purposively selected. An exploratory sample of 30 children (15 boys and 15 girls) from this kindergarten, who were not part of the main research sample, was used to test the validity and reliability of the tools (psychometric properties). The main research sample included 60 children (30 boys and 30 girls), randomly selected and divided into two

groups: the experimental group and the control group, with each group comprising 30 children enrolled in the second level of the kindergarten.

Sample Equivalence:

: Equivalence of the Research Sample

-Age and Intelligence:

The researcher ensured equivalence between the experimental and control groups in terms of chronological age and intelligence. To achieve this:

-Age: The ages of all children in both groups were recorded and statistically analyzed to ensure equivalence.

-Intelligence: The Colored Progressive Matrices test by John Raven was administered to assess the intelligence levels of the children in both the experimental and control groups. The answer sheets were corrected using established correction procedures.

The results are detailed in the following table:

Table (1): Equivalence Between Children in the Experimental and Control Groups in Terms of Age and Intelligence

Group ----- Variables	Control N (30)		Experimental N (30)		"T "Value	Significance level
	P1	M1	P2	M2		
Chronological age	63,22	1,07	63,12	1,04	0,87	Non-function
IQ level	100,02	2,11	100,6	2,00	1,09	Non-function

Table (1) shows that there are no statistically significant differences between the mean scores of the experimental and control groups in terms of chronological age and intelligence level, indicating that they are equivalent.

-Regarding language skills: The researcher assessed the significance of differences between the mean scores of children in the experimental and control groups in the pre-test to ensure equivalence of the sample in the dimensions of the pictorial language skills scale before starting the interactive sensory book activities. The results were recorded and statistically analyzed using the "t" test for independent samples, and the results are as shown in the following table:

Table (2) shows the equivalence between the children in the experimental and control groups in terms of the dimensions of the language skills scale.

Variables	Control N(30)		Experimental N(30)		"T "Value	Significance level
	P1	M1	P2	M2		
Illustrated Language Skills Scale	31,21	5,06	31,09	4,67	0,103	Non-function

It is evident from Table (2) that the "t" value is not statistically significant, indicating no statistically significant differences between the mean scores of children in the experimental and control groups concerning the dimensions of the language skills scale in the pre-test. This

suggests equivalence between the groups before conducting the experiment. Additionally, the internal consistency of the scale was assessed by finding the correlation coefficient between each dimension score and the total score of the scale. The results are shown in the following table:

Table (3) shows the Correlation Coefficient Between Each Dimension Score and the Total Score of the Visual Language Skills Scale for Preschool Children

Coefficient of internal consistency	Dimension
0,88	Developing the listening skill of the kindergarten child
0,89	Developing the speaking skill of the kindergarten child
0,90	Developing the skill of reading readiness for kindergarten children
0,89	Developing the skill of preparing for writing in the kindergarten child

It is evident from the previous table that the correlation coefficients for the scale are significant, indicating the consistency of the scale. The researcher also calculated the reliability coefficients using Cronbach's Alpha, which was 0.91%0.91\%0.91%, a statistically significant coefficient indicating an acceptable level of reliability. The correlation coefficient between the two applications of the test, calculated using Spearman's formula for test-retest reliability, was 0.900.900.90, a high correlation indicating the scale's reliability. Thus, the second question, "What are the components of the visual language skills scale for preschool children?" has been answered.

4. Research Results and Discussion:

The results of the research were analyzed in light of the hypotheses previously set and the findings of the field study. The aim was to evaluate the effectiveness of a program based on interactive sensory books in developing language skills among preschool children.

Verification of the First Hypothesis: This hypothesis states, "There are statistically significant differences between the mean scores of the experimental group and the control group on the visual language skills scale in the post-test, favoring the experimental group." To verify this hypothesis, the t-value for independent samples was calculated to assess the significance of the difference between the mean scores of the experimental group and the control group in the post-test of the language skills scale for preschool children. Additionally, the effect size ( $\eta^2$ ) and the corresponding Cohen's d value were calculated. The results are presented in the following table:

Table (4) shows the mean scores, standard deviations, and t-value for the differences between the mean scores of the experimental and control groups in the post-test of the visual language skills scale.

Dimension	group	scaling	Arithmetic mean	Standard deviation	Number	Degrees of freedom	Value (v)	Significance level	Impact size		Amount of impact
									( $\eta^2$ )Value	Value (d)	
The overall score of the language skills scale	Experimental	Post	81,09	9,001	30	58	31,15	function at 0.05	0,908	8,07	big
	Control		31,17	4,011							

It is evident from Table (4) that the experimental group achieved a higher improvement rate than the control group in the visual language skills scale. This improvement is attributed to the effectiveness of the interactive sensory book used, with a value of ddd for the entire scale of 8.078.078.07, indicating a large effect size of the independent variable. This supports the acceptance of the first hypothesis of the research.

#### Verification of the Second Hypothesis:

The second hypothesis states, "There are statistically significant differences between the mean scores of the experimental group on the visual language skills scale in the pre-test and post-test, favoring the post-test."

To verify this hypothesis, the significance of the differences between the mean scores of the children on the visual language skills scale was calculated. The "t-test" was used to determine these differences, and values for  $\eta^2$  and ddd were also calculated, as illustrated in the following table:

Table (5) Shows the means, standard deviations, and t-value for the differences between the pre-test and post-test measurements of the experimental group on the visual language skills scale

Dimension	group	scaling	Arithmetic mean	Standard deviation	Number	Degrees of freedom	Value (v)	Significance level	Impact size		Amount of impact
									( $\eta^2$ )Value	Value (d)	
The overall score of the language skills scale	Experimental	Post	81,09	9,002	29	29	52,06	function at 0.05	0,932	10,42	big
		pre	37,21	6,102							

The previous table (5) shows that the value of "t" is significant at 0.05, indicating statistically significant differences between the mean scores of the experimental group children in the pre-test and post-test on the dimensions of the visual language skills scale, favoring the post-test. This suggests a clear improvement in the language skills dimensions of the experimental group children in the post-test, which means that the second hypothesis of the research is accepted.

Verification of the third hypothesis: which states, "What is the effectiveness of the program based on the interactive sensory book in developing language skills in kindergarten children?" To

verify this hypothesis, the "Black" formula was used to calculate the adjusted gain percentage, as shown in the following table:

Table (6) Results of the "Black" Formula for the Effectiveness of the Interactive Sensory Book in Developing Language Skills Between Pre-Test and Post-Test on the Language Skills Scale

scale	Variables	scaling	Arithmetic mean	great end	Blac ratio	Significance
Language skills	Total Grade	post	81,09	96	1,30	Effective
		pre	31,17			

It is evident from Table (6) that the gain ratio for the effectiveness of the interactive sensory book in developing language skills is effective, as each value is greater than 1.2, which confirms the effectiveness of the program. This means accepting the third hypothesis of the research.

Discussion of Research Hypothesis Results:

The results of the research confirmed the effectiveness of the educational program based on the interactive sensory book in developing linguistic skills among preschool children. This finding aligns with the studies of Fahmi (2001), which highlighted that children's linguistic skills only grow through intentional learning, and that well-prepared educational material in the form of engaging and attractive activities has a significant impact on achieving the desired outcomes. It also concurs with Al-Khatib's study (2011), which indicated that using stories and presenting them in an engaging and attractive manner plays a role in developing linguistic skills in preschool children. Moreover, it is consistent with the findings of the study by Omar and Al-Tayeb (2015), which aimed to explore the impact of storytelling on children's linguistic development.

The noticeable improvement and superiority in the results can be attributed to the engaging and effective activities provided through the interactive book, which include comprehension, memory, application, and synthesis. These activities are varied and include different models and realistic, tangible examples. This finding is in agreement with the study by Omar Yasmin and Al-Tayeb Mohammed (2015), which aimed to identify the impact of storytelling on children's linguistic development using a descriptive analytical method on 300 teachers. The study concluded that the role of the storyteller attracts children to listen to the story, and the accompanying materials have a significant impact on increasing linguistic growth. Additionally, the content of the story has an effective impact on linguistic development.

This research also aligns with the study by Jabra Abdullah Yahya Mohammed (2015), which aimed to determine the effectiveness of teaching Arabic using stories in developing speaking skills among first-grade students. The study used an experimental method on 60 students and demonstrated the effectiveness of teaching Arabic through storytelling in enhancing speaking skills. Furthermore, it is consistent with the study by Al-Fuhaid Abdullah Suleiman (2014) on the effectiveness of a story-based program in developing speaking skills among sixth-grade students, which employed an experimental method on 41 students. The results showed statistically significant differences in favor of the experimental group, attributed to the story-based program.

Finally, it corresponds with the study by Imad Al-Din Ahmed Kamal (2012), which aimed to investigate the impact of storytelling on developing listening and reading skills among fourth-grade students. The study used an experimental method on 136 students and revealed statistically

significant differences in favor of the experimental group, both male and female. Similarly, the study by Linda Ahmed Al-Khatib (2011) aimed to determine the effect of story presentation methods on developing linguistic skills in children. It used an experimental method on 120 children and revealed statistically significant differences in favor of the experimental groups, attributed to the techniques of oral narration, oral narration with pictures, and role-playing.

These results align with the study by Kamal (2012), which confirmed the impact of storytelling on developing listening and reading skills among students, and with the study by Al-Tabini (2012), which found that the method of storytelling, the type of story, and the storyteller's style affect the child's language and vocabulary acquisition. Additionally, Mohammed's study (2010) emphasized the importance of cultural activities in developing communication skills, and Mohammed's (2012) research highlighted the effectiveness of the dramatic approach in developing auditory and visual discrimination skills in preschool children.

Moreover, the studies by Zahran and others (2007) and Shabani (2016) emphasized the positive effects of acquiring listening skills before school age, such as enhancing the child's ability to distinguish sounds, letters, and words, developing auditory memory, training in retaining information, and increasing the child's attention span and intensity through gradual listening exercises. These skills serve as an effective means of communication that facilitates social interaction and integration.

This highlights the importance of training children in purposeful language games that can develop listening and communication skills, create an atmosphere of fruitful verbal interaction, and provide opportunities for children to express themselves verbally. It also emphasizes the need to train children in good listening, speaking, and communication skills so they can communicate, express themselves, and interact verbally in a clear and proper manner.

The activities in the interactive sensory book contributed to developing speaking skills (accuracy of pronunciation, precision of performance, verbal fluency, functional performance, coherence, and cohesion). Children became able to pronounce letters and articulate each word correctly from its respective articulation point. They also became capable of expressing the images in their own words.

These findings are consistent with the studies by Al-Saadi (2019), Al-Saadi Abu Al-Hijja (2018), Jabra (2015), and Suleiman (2014), which stressed the importance of developing communication skills, creating an atmosphere of fruitful verbal interaction, and giving children opportunities for verbal expression. They also highlighted the importance of training children in good listening, speaking, and communication skills, which are crucial for proper and effective verbal communication. These studies also emphasized the positive impact of techniques that increase children's participation and enhance feedback, which has a clear effect on developing listening and speaking skills, and in boosting confidence and the ability to express different thoughts and emotions.

## **5. Research Recommendations:**

In light of the research results, the following recommendations can be made:

- Increase attention to children's language development and the methods to nurture it, given its impact on children's learning.
- Emphasize the importance for early childhood professionals, program planners, and curriculum developers to employ tangible materials in teaching children as one of the modern teaching strategies.
- Conduct continuous training courses on how to effectively employ teaching strategies with children.
- Develop a structured plan specifically aimed at enhancing children's concepts and skills.
- Allocate training sessions to activate strategies that contribute to children's skill development.
- Raise awareness among kindergarten educators about the importance of the interactive sensory book in developing language skills and preparing children for proper reading.

#### Research Proposals:

- Develop educational plans or training programs focused on improving language skills in preschool children.
- Conduct experimental research using interactive sensory books with special groups of children (gifted, those with learning difficulties, and hearing-impaired) during early childhood stages.
- Utilize interactive sensory books to promote peace among preschool children.
- Conduct experimental research to explore the impact of interactive sensory books on the development of other dependent variables.

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