

**THE IMPACT OF PROJECT "LET'S GET TO KNOW OUR BEAUTIFUL  
LANGUAGE" ON ARAB KINDERGARTEN CHILDREN IN PROMOTING  
EMERGENT LITERACY**

**Himat Hag Ihia**

Ph.D. student

Department of Psychology

Varna Free University "Chernorizets Hrabar"

**Summary:** This article discusses the contribution of a project to promote the level of emergent literacy among Arab kindergarten children. A central purpose was to examine the effectiveness of the mediation by the project intervention program "Let's get to know our beautiful language" as an effective tool in the field of literacy. The findings of the research are evidence of the influence of the mediation by intervention program project on two main subjects: mediated learning strategies according to the principles of Vygotsky, Feuerstein and Klein and achievements in the field of emergent literacy.

In the study participated 20 students during their study for a bachelor's degree in college and 310 children from 12 Arab kindergartens in Israel, divided in two groups - experimental group and a control group.

The hypothesis was that using mediation (using the project) raises achievements in the emergent literacy in the group of children who have received mediation (the experimental group) for regulating the behavior of a sense of ability, meaning, intention and reciprocity, support and leverage, interacting with the use of psychological tools and positively predicted the literacy achievements. The results confirm the hypothesis.

**Keywords:** mediation , mediation learning strategies, promote emergent literacy

Public and private needs raise the question how we can help children in early age to improve their achievements in literacy? Based on scientific literature and practical experience we proposed project intervention program "Let's get to know our beautiful language" to bring children to acquire literacy and succeed in writing at the age of kindergarten.

Studies demonstrate that the first few years are critical for intellectual, emotional and social development of children. Using proper educational approaches that corresponds to the development of every child can ensure better results in present and in future.

In the current study, the impact of mediation on emergent literacy was examined.

**Mediation in kindergartens** – an educational environment in kindergarten

According to Zeller Mayer, the main purpose of education, according to Vygotsky's approach, is to provide a learning environment. As a result, the learners will engage in a productive, goal-oriented activity, and while doing so, they will be able to learn to use cultural instruments (computers, games, etc.) to help them achieve their goal (Flavian, 2021). Many researchers of Vygotsky claim that we should build a learning environment, which enables children complex experience in learning, which is the product of interpersonal relationships. The learning takes place in the socio-cultural and the psychological -interpersonal context. This context has great importance for the way the children understand significance (Flavian, 2021) note that the proper organization of educational learning environment is a scaffold for learning. We should organize educational environment in a way that allows human support for a child; collaborative learning, learning that allows dialogue with partners, children with children, children with educator, with an intern. In addition, a material support by tools and various cultural instruments.

In most of the kindergartens in the country over the past decades, the learning is based mainly on developmental matching approach (Eisenberg et al., 2010). In fact, this approach presents a combination of developmental theories and claims that knowledge is being built using the free activity of the child. The child is seen as an autonomous and active initiative person and not as a passive, following orders person. We do expect from educator to adapt himself to the unique needs of each child and to plan the work (Diamond et al., 2019). The development essentially is based on the constructivist approach, the approach that claims that learners are building their own knowledge. Four basic approaches characterize the constructivist approach to learning: 1) Knowledge cannot exist in isolation from the person who knows. 2) Learning is an activity of construction. 3) Learning is an activity located in context. 4) Learning is a social activity (Eisenberg et al., 2010).

#### *Educational approach in kindergarten and Vygotsky's theory*

The theory of Vygotsky (2003) claims that mental development of humans is based on social interaction. He called his theory a Cultural Social Psychology, based on vision that this is the most important component of human development (Solovieva & Quintanar, 2020).

The most important concept of Vygotsky in the field of education is the concept of close development field. Effective teaching is the teaching based on the next stage of child's development and not the current stage. The first level, called the current level of development refers to the development of mental functions that their own development and formation ended (Harland, 2003). The current development level is determined by various means, independent of age. I.e., children of the same age can have different current level of development. Identifying

of close development field allows the kindergarten teacher to direct the child in reaching a higher level. The purpose of the kindergarten teacher leads the child to his current ability level of its potential level, thus affecting the development of the higher functions. This concept of close development field tells us that right teaching must precede development.

It is important that the kindergarten teacher students will be aware of the range of current and close development field of each child. To do so the kindergarten teacher must expect the interaction between children, to listen to them and to talk with them, moreover, to avoid unifying expectations for learning of concepts and issues in the same manner and with the same pace.

#### *Principles of Feuerstein and Klein approach*

Feuerstein's mediation theory is based on direct exposure and proper behavior strategy that will enable effective exposure to stimuli and lead to normal cognitive development "and that" the person is a creature with a tendency to change, his cognitive system is an open and flexible system, which can be transformed from a structural (Bodrova & Leong, 2018; Feuerstein & Co, 1987). Feuerstein stated that an adult has a crucial role in the child's ability to derive the most from himself in an educational situation or in an event that he should deal with an adult should be the contact between the child and the time of the child irritants. He must bring the stimuli according to the needs of the child, under the changing circumstances. Any mediation situation will lead to learning. Feuerstein found that real-estate operations between child and adult are characterized by 12 categories.

Some basic characteristics of these categories are: intent and reciprocity, mediation of meaning, mediation adds several additional categories, transcendental (expansion), providing a sense of ability, and regulating behavior.

According to Klein's approach, high quality interaction includes elements of the child's attention focus, the transfer of meaning of what he experiences in the environment, expanding and creating connections between different experiences, providing encouragement, and regulating behavior (Klein, 2008).

#### **Literacy: emergent literacy in kindergarten**

The term "emergent literacy" emphasizes the developmental aspect of the reading and writing processes in children prior to entering the school (Berman, 2016). These processes include phonological awareness, knowledge of letters, emergent and reading, the skills of a discourse and speech skills, vocabulary, and morphological and syntactically (Phillips et al., 2021). In the current study, we focused on both the level of discussion and the construction of the intervention program in the rich fields of linguistic wealth and the general level of the

emergent literacy, which also includes alphabetic and writing skills. Researchers in the fields of language and literacy agree that education for literacy begins in early childhood. Many studies indicate that differences in the literacy young children's talents are predicting later differences in the acquisition of reading and writing, and that there is a link between the level of literacy of the children in the kindergarten and the learn of literacy at school (Asaridou et al., 2017; Burchinal et al., 2020; Chambers et al., 2016).

More studies show that there is a strong relationship between the written language and the spoken language, the literacy discourse skills and the desertification at the age of kindergarten, found strong relation to the acquisition of literacy at school (Aram & Besser-Biron, 2017; Jere-Folotiya et al., 2014; Mongan, 2023; Robins et al., 2014; Share & Bar-On, 2018).

Additional investigations have found that alphabet skills such as letter knowledge, phonological alertness, and sound-signal relationships play an important role in the development of reading and writing skills in school. As a result, children who grow up in an environment where adults lack alphabetic skills may struggle with purchasing reading and writing. Other studies have emphasized the importance of familiarity with the printing world and linguistic wealth in school comprehension achievement (A. Watts et al., 2022). This section defines the emergent literacy now will present the development of literacy.

### **Development of literacy**

Cognitive development of the child in early age occurs within the socio-cultural context in which he lives (Leech et al., 2018). Bronfenbrenner (Zepeda et al., 2019) describes this development as given in social relationships that existed in circles from a distance (neighborhood or social group) and from near (direct activity of the parent with the child). One of the aspects of cognitive development, which can be described in this theoretical framework, is literacy field.

The ability to read, write and use written language in a functional and efficient way is an integral part of today's society. Taylor (Taylor et al., 2023) sees literacy as part of the social arrangement transmitted from generation to generation through the processes of friendships, mainly through literacy activities at home. Thus, the knowledge of children in reading, writing, and printing evolves through their first experiences in the world of writing, before they formally learn reading and writing at school (Vohr et al., 2018). The assumption is that based on this prior knowledge a formal control on reading and writing develops later. This knowledge called “emergent literacy” and its development takes place during early infancy before the formal learning of reading and writing in school. Kindergarten children are at different developmental

stages of emergent literacy (Levin et al., 2013). This prior knowledge predicting the acquisition of reading and writing in first grade (Chambers et al., 2016; Griffith & Arnold, 2019; Hall et al., 2015) and literate achievements in later elementary grades (Goldfeld et al., 2021).

The environment provides information, for its processing, and its implementation, is an internal process that occurs in the study that has basic abilities inherent in understanding the world. Literacy will evolve if favorable conditions exist, that is, if there is support, encouragement, and a stimulating environment in which to engage in literacy. Literacy, in other words, develops through interaction with the environment (Martin & Grudziecki, 2006; Nutbeam, 2008; Oblinger, 2004). The child must be exposed to a supportive and encouraging literacy, to discern the language and its teachings. By experiencing reading, writing, speaking, and listening in the environment in which he lives, literacy will develop naturally.

### **Components of literacy and development at the pre-school stage**

Much research on literacy on the pre-school stage deals with two issues. One is characterization of components of early literacy and sequence of development in kindergarten years. The other is inspection of connection between these components and achievement in reading and writing after oriented teaching of these capabilities in class. Because of the wide variety of components of early literacy, it is customary to classify them into two spheres of literacy knowledge, which develops during pre-school stage. One sphere is the development of specific knowledge about the code (Code related knowledge) and the other sphere is the development of general knowledge about the spoken language. Feldman shows the development of literacy knowledge in the kindergarten years as a depending on the components of early literacy and distribution to pair of disciplines (Feldman, 2019).

The relationship between early literacy components for the acquisition of reading and writing as part of a formal study - this is a longitudinal study that follows children's achievements from kindergarten to school years. This allows us to characterize early literacy components that are strongly linked to traditional measures of school literacy such as text decoding, reading fluency, reading comprehension, writing, and spelling.

We will note as an example two longitudinal studies conducted in the US and Europe. One study is the national curriculum “HEAD START” (T. W. Watts et al., 2018). Some investigators found that the knowledge regarding alphabetic cipher, such as knowledge of letters names, phonological awareness, and emergent literacy, predicted success measures of early reading, such as deciphering words in first grade. However, the skills of oral language knowledge, such as vocabulary of the child, predicted success in later indices of literacy, such as reading comprehension in 3<sup>rd</sup> and 4<sup>th</sup> grades. It was also found that the connection between

the skill of knowledge relating to the code and skills of oral language knowledge was strongest in kindergarten years, hence (the importance of literacy development in the kindergarten) while in the end of one year of formal teaching of reading it was no longer a connection between these capabilities.

In another longitudinal study (in UK), the researchers followed the literacy development of kindergarten (Snowling et al., 2016). In this study, it was found, like in other studies, that development of knowledge relating to the code, such as phonemic awareness and knowledge of letters, predicted the ability to read successfully single words (i.e., decoding capability), while the development of the knowledge of the spoken language, as a rich syntactic vocabulary, predicted success in reading comprehension.

A meta-analysis conducted by a committee of the US National Institute for Literacy (Shanahan & Lonigan, 2010; Stanley & Finch, 2018) summarizes the findings of many longitudinal studies that have examined the connections between the components of early literacy in kindergarten and the early academic achievements in school. “What are the skills of young children (from birth until preschool) that predict success in acquiring reading, writing and spelling after they have been taught formally in school?” Six components of early literacy that have a medium-strong connection (i.e., with high predictive power) to the indicators of early reading and writing emerges from this review. In addition, there are five components that have a medium connection to these indicators (Feldman, 2019). Six components of their early literacy have high predictive ability of success in acquiring reading and writing: alphabetical knowledge (including knowledge of letter names and relationships letter-sound); phonological awareness; the ability of naming of sequences of letters, digits and familiar objects, emergent literacy; writing the letters and first name; phonological memory. Children showing rich literacy knowledge in kindergarten usually get high achievements in learning to read and write at the beginning of school and reading comprehension in more advanced classes (Hagen, 2018; Krapohl et al., 2014). Pupils who come to school with high literacy level quickly acquire reading and writing, achieve automatism and control that enable effectiveness and pleasure. Moreover, they attain high academic achievements. In contrast, pupils who come to schools with less knowledge in the field of literacy, slowly acquire the decryption code, dealing with difficult texts is hard for them, they feel repelled and unwillingness to engage in reading and attain low achievement (Skibbe & Foster, 2019). However, early literacy components connected to knowledge of oral language and writing vigilance were found with only moderate ability to predict success in the early reading and writing. It is important to remember that conclusions of the committee, referred above, relate to components of early literacy that predict

success in formal learning of reading and writing, rather than general knowledge of spoken language, i.e., language competency, which it attributed with great importance in reading comprehension and writing skills beyond the primary grades.

**Project “Let’s get to know our beautiful language”**

*Projects and intervention programs for early child development*

According to studies that concentrate on how the educational environment affects the development of a child's abilities and functioning, the environment has a significant impact on how ready a child is to perform academic tasks as well as on his perception and memory. This means that if a child is given the right environmental conditions during the formative years of their life, when the foundations for their cognitive, personal, social, and physical development are set, development can be promoted, including the intellectual abilities (Pace et al., 2019). Studies from the brain research have provided new evidence of the effects of early-childhood interventions on children's achievement in the later stages of their lives (Blair, 2016; Donnelly & Kidd, 2021; Dowdall et al., 2020), and now the welfare of the educational- interventional approach to interacting with the environment during this period has a considerable influence on the tracks of growth of the children. From here, through early detection of difficulties and interference in ways of early-age learning style, they can be overcome with decisions at the pace of personal learning and on environmental restrictions to allow for success in school (Kaiser et al., 2022; Law, 2019). This approach is supported by the findings that show that the child's development and its capacity for school are influenced by the personal data and from its environmental context: Socio-economic status, the learning environment at home and participation in intervention programs intended to contribute to its early development, in early child development (McNicholas et al., 2018). Studies in various countries in the world indicate awareness and preparation by parents and educators towards a successful and experiential transition of children to 1st grade. Researchers offer to help children develop skills and tendencies needed to cope with the challenges facing them during the transition process (Greenwood et al., 2021; Hagen, 2018; Quinn et al., 2021).

According to the literature, intervention programs are effective at advancing kindergarteners from low socioeconomic backgrounds in both academic and emotional and social domains. In the area of literacy, teachers and parents engage kids in games that promote phonological awareness and focus on written language. Hesterman (Hesterman & Targowska, 2020) describes an intervention in which the games included dividing a word into sounds, emitting sounds, and connecting sounds to a word and more. Following the program, the children in the intervention group benefited – significantly outperformed control children on

measures of phonological awareness, letter name and letter sound knowledge, and three measures of word recognition. They also significantly outperformed the control children on two measures of spelling. One year later, at the end of grade 2, the treatment children significantly outperformed the control children on all four measures of word recognition.

In Israel, Aram (Aram et al., 2014) demonstrated how gardening can promote the children's vocabulary and understanding the type of system already at the age of three-four, by means of reading book activities with children on the topics of the book and by means of activities related to the alphabet (e.g., letter games or writing games. Aram & Levin (Levin & Aram, 2013) showed how to promote the understanding of the writing system to preschool children from low socioeconomic backgrounds through short-writing activities in which the children teach to be aware of the sounds of the word and link between sound and the appropriate letter.

Bierman (Bierman et al., 2014) examined the effectiveness of an integrated intervention program Research-based, Developmentally Informed (REDI) designed to promote literacy and social skills of kindergarten children from a low economic social background through activities to promote literacy and social skills incorporated into the standard curriculum in the gardens. In the field of literacy for example, reading of books in dialogue with the children through a series of questions and stimuli proven to promote vocabulary, understanding story and language skills.

Wasik (Wasik et al., 2016) explored the effectiveness of the integrated program and found a year after it was effective in promoting interest in learning, reading achievements and social behavior. It was interesting that the children advanced their social skills during the kindergarten program and in school achievements – achievements beyond the vocabulary and literacy – one year later. The researchers claim that these findings emphasize the connection in children from a low economic social background between social and emotional skills to the academic ones.

Lipsey and Habash (Tanner-Smith et al., 2013) explored the effectiveness of a comprehensive plan that was implemented in the day-to-night dormitories in Tennessee and its goal is to promote ready for school with the children of the four-child kindergarten from a low social background. As part of the program, the children learned a long school day, and a structured curriculum in literacy and mathematics. At the end of the year, researchers found improvement in language and social behavioral, and a definite benefit of the intervention group on the comparison group.



Watts (T. W. Watts et al., 2018) reported a research survey that evaluated the influence of intervention programs to promote children from different situations several years after the completion of the program and examined the stability of the program's influence on their studies. While reviewing the plans showed that the more the children's status was lower, the more the intervention plan contributed to the advancement.

Farrow (Farrow et al., 2020) refers to the question relating to the stability of the contribution of early-childhood intervention programs and the range of development and functioning that these programs contribute to. Barnett comes to a conclusion in a review of research and analysis done in the United States that looked at the efficacy of numerous early intervention programs. The statement that early-age intervention programs have a significant, short- and long-term impact on cognitive development, social emotional development, academic progress, anti-social behavior, and crime sums up the review. It shows that although long-term effects may not be as large as short-term ones, they are still important and valuable to both the individual and society. The emotional factor has a significant impact on learning, even though the quality of the mediation is a significant factor affecting the learning process and its deliverables. From comprehensive research, made in recent years to examine the quality of interaction between teachers and children in kindergarten and school, while simultaneously addressing the social emotional component and the element of teaching, testimonies arise that two of these components explain a higher proportion of differing achievements in academic achievement, and in the social and emotional adaptation of children than structural, organizational and managerial factors (Klein et al., 2017). Feelings of apathy and lack of interest in learning can be related to this, that the child is not an escort or a mediation of positive emotions around previous dimensions. These feelings influence intellectual ability and pleasure from new dimensions.

Tzuriel David (Tzuriel, 2020) presented a trans-circular trans cyclical process, in which there is a constant correlation between experience in mediated learning and the ability to cognitive change. Based on clinical trials and experience, he argued that normal and emotional factors are perceived as critical and vital energetic forces that determine the influence of the developmental in the mediated study on the development of the quantum transformation. Conversely, emotional factors that do not function diminish the effectiveness of the conventional variability. Hence, there is an important projection of the combination of factors moving in cognitive intervention programs. This model indicates that in the construction of a cognitive intervention program there is an emphasis on the emotional factors as structured elements of the program. Considering one of the aims of the intervention program that was

activated in the framework of the study was to examine the influence of the mediation in combination with an intervention plan.

#### *Intervention programs on the emergent literacy*

The emergent literacy: The program refers to the advancement of emergent literacy, (the concept refers to the initial knowledge of young children in the written world, before the formal learning of reading and writing, this knowledge, including the capabilities required for decoding, understanding and encryption of the written language, concepts on printing and books, and linguistic knowledge and syntax) (Krijnen et al., 2020).

In studies that have been conducted over the past three decades, the kindergarten children who have not formally studied the written language, have a growing and rich knowledge in the realm of the assumption that, based on this early knowledge, the reading and formal writing is later developed by (Griffith et al., 2019).

*Skills related to alphabetic skills* such as phonological awareness, and knowledge of letters and concepts on the pattern of vocabulary, will be set below.

#### *Phonological awareness*

Phonological awareness is the understanding that phonemes (individual sounds) and syllables are the small, measurable units that make up the language of speech. A person with strong phonological awareness can manipulate these units and is sensitive to and aware of the language's word's sound structure. Phonological awareness includes alertness for the sounds of speech, distinguish between similar sounds in a word, a speech for opening and closing sound of a word, a combination of sounds to words, separating words from sounds, and saying words from here, in phonological awareness there is a dual ability, expressed in alertness in the sounds of the word, and the ability to manipulate these sound fragments (Elimelech & Aram, 2022).

In recent years, the development of phonological awareness is considered one of the most important areas of research, since it is predicting the acquisition of literacy skills, especially in alphabetic languages from emerging studies that phonological awareness constitutes a major predictor of reading and writing acquisition. Some studies conducted by (Levin et al., 2013; Suortti & Lipponen, 2016) found that a low level of phonological awareness at the age of kindergarten constitutes a predictor of difficulties reading at the beginning of first grade and in the second grade in school. Studies in the past thirty years have shown that phonological awareness is a developing ability that is improving with increase in age (Treiman, 2017).

Researchers in the field claimed that there are at least three levels in the *phonological units*: The syllable which is the largest phonological unit, prefixes, and finality of a word, and

the phoneme (single sound) – the smallest unit. According to Treiman (Treiman, 2017), the syllable unit is the easiest to grasp, and awareness of the phoneme unit is the hardest to grasp, -it is more common among children aged 3 (Share & Bar-On, 2018; Treiman, 2017) and it is more common among children aged 6 (Share & Bar-On, 2018). Also referred to another level in the phonological unit is the level of combination (vowel and consonant). This unit is between the syllable and the phoneme. It is a little bit less of a syllable but 'bigger' than phoneme for example the word cdol (big), syllable dividers to: C-DOL, the join level of combination: C-do-l and the phonal level to: C-A-D-O-L. As mentioned above it is assumption that as age increases number of phonological units also increases in the small unit.

In intervention studies in the field of literacy, it was indicated about the importance of phonological awareness, such as the child's reading and writing development (Bowers, 2020; Levlin & Waldmann, 2020). In these studies, children who have been trained in phonological tasks have advanced to identify written words, in the context of a sound letter and spelling words. This progress was found not only in kindergarten, but also during the first years in school.

#### *Knowledge of letter names and the relationship between sound and letters*

Knowledge of letter names is the ability to recognize letters and read in names. This recognition reflects a certain alphabetic knowledge that a child has of the written language. The ability to know the names of the letters is present in the child before that he learns them in formal learning, for example, the first experiences of North American children also include teaching and reciting English alphabet letters (Myers et al., 2014; Romeo et al., 2021). Studies show that these children know most letters of the English alphabet before the age of the school, and when they are 5 years old, they are already able to recite and named complete the 22 letters out of 26 letters ABC. The children are aware of the names of the letters by interacting with their literacy environment (Snow et al., 2014). letter numbers, from exposure to written messages in home, kindergarten and street, songs that deal with the alphabet, kindergarten stories, their parents, and educational television programs that is, children come to a great of knowledge in the names of the letters following these interactions before they learn which sounds each letter represents (Goldfeld et al., 2021; Snowling et al., 2016). From reviewing studies conducted by (Levlin & Waldmann, 2020), it turns out that when children try to write words, they use knowledge of the names of letters they know, and that this knowledge helps them link sounds to letters. The understanding that a letter is a symbol of a sound, and that sounds can differ from the letter, is an important understanding at the beginning of the reading process. That is, children must understand that, in addition to the conventional name, the letters

have sound value. Many studies indicate that knowing letters names has high value. It was found that this capability of recognizing letter names in the kindergarten well predicts the acquisition of reading and writing in the first grade. Studies in the field of knowledge of letter names and connect letters and sound signals have indicated the importance of these areas to the development of the child's reading and writing. Knowledge of letters names or sounds was found to be helpful for the ability to recognize individual words and the ability to spell words (Bowers, 2020)

In addition to the intervention studies in the field of knowledge of letters and a signal letters and sound, it is found that children who were trained in these fields advanced in the knowledge of letters, phonological awareness, reading words, orthographic awareness (Levin et al., 2013), in writing words and vocabulary (Bergman Deitcher, Aram, & Goldberg, 2021; Levlin & Waldmann, 2020).

*Vocabulary* - the study literature presents information that an interventional activity promotes vocabulary in a field. For example, the study of Oudgenoeg-Paz (Oudgenoeg-Paz et al., 2016) shows that an occupation in a particular field leads to control of vocabulary in the field where the enrichment was conducted. For example, space activity will help children purchase words like: "above" "below" and a garden activity will help to purchase words like: "woven" and "seedling". So far there is a little known about internal influences in the field of vocabulary. This study aims to measure the benefits of an intervention program to improve the vocabulary and to examine two periods of time (before and after intervention) the progress of the children and whether advances that have occurred in a particular field affects vocabulary in another area. The vocabulary of children grows when we talk to them (Cameron et al., 2023). The more diverse the areas we talk about, the vocabulary that the children acquire become richer (for example, watching TV, taking a trip). Watching the germination seed, observing the leaves and the behavior of ants in the yard – any activity is an opportunity for conversation and learning. However, the reading of texts has a special place in the enrichment of the vocabulary and concepts of children. Books get acquaintance with distant environments: other countries, animals in the oceans and jeeps, stars in the solar system. Even when the stories deal with the situations known to children from everyday life they have to make a donation to children: The story exposes the children to a vocabulary of higher tongues and is less common than the words the children acquire through listening to spoken language. When the children grow up and learn to read, the vocabulary exposed to it in books will not deter them. After reading the text, the adult should talk about it with the children to find out how much they understood it, answer questions, and add missing information. It was found that when adults read to children at the

age of kindergarten, children tend to use spontaneous language in conversations, discussions, and socio-dramatic game situations (Grolig et al., 2020). Stories give adults and children opportunities to discuss emotions and thoughts without requiring immediate action. Consequently, the reading of stories contributes to the development of the meta cognitive knowledge of the children (Gaudreau et al., 2020). If so, the reading of stories provides children with a broad vocabulary, specific knowledge in various areas of content, and meta cognitive ability to monitor the degree in which they understand the texts, and search, active, missing information.

*The intervention studies on vocabulary* have indicated the use of higher vocabulary after activating intervention program than before starting the program (Asaridou et al., 2017). Donnelly (Donnelly & Kidd, 2021) studied reading books for children aged four and found that a "descriptive" reading style, which focuses on the naming and description of pictures in the book contributes to the level of vocabulary and knowledge of the pattern. In addition, the reading style, which focuses on emotional dialogue regarding the characters and poses high cognitive challenges such as divination and speculation, is considered a reading style that promotes emergent literacy for children who show high literacy abilities". The research literature on this topic presents clear and consistent evidence indicating the connection between the frequency of books reading and language development (Cervetti et al., 2020). Another study (Sénéchal & LeFevre, 2014) found that prevalence of book reading is related to the development of vocabulary and auditory comprehension in five-aged preschool children.

*Writing* – kindergarten kids are interested in writing and are trying to write. They begin to write childish writing form before they write in a proper way and agreed manner. The children's writing progresses from pre-phonetic writing, non-presentable scribble, similar written, random letters (through phonetic writing), elementary start writing consonant written, moderate consonant written, consonant progress written (to the orthographic writing) (Levin et al., 2013). Evidence from research of "emergent writing" show that "alphabetic" strategies are noticeable in childish writing before they are noticeable in reading, and the knowledge of early spelling promotes and enriches the reading process (Aram & Besser-Biron, 2017). Several studies have shown a link between early childhood writing and success in acquiring the reading and writing at the age of the school. Walker (Walker et al., 2020) followed children from a medium-socioeconomic background in the kindergarten to the third grade. Researchers have shown that emergent writing at the age of kindergarten is predicting achievements in writing at school.

In Israel, level of writing in the age of kindergarten predicts the acquisition of reading and writing in the first grade (Levin et al., 2008).

Activities in literacy and achievements in writing in the age of kindergarten encourages children, while doing significant, analyzing the sound structure of the words, and supporting the phonetic segmentation and learning letters (Bingham et al., 2017).

Intervention studies in the field of quality experience in writing lead to improved academic achievement, including skills in literacy proficiency, especially in children who are at risk (Krijnen et al., 2020), emergent academic achievement (Noble et al., 2019; Preece & Levy, 2020).

Using numbered arrows to indicate the order and direction of the lines that make up the signal, Lubotsky, D., and Kaestner, R. described the improvement in writing as the outcome of a treatment that was included to acquire orthographic knowledge. Additionally, practice retrieving letters from memory after the signal has passed, with an emphasis on internalizing the letter shapes and the space in the direction of the signal's constituent lines. It can be concluded that direct instruction in letter writing itself can enhance writing output in terms of both writing speed and quality (Lukie et al., 2014).

#### *The project "Let's get to know our beautiful language" Intervention Program*

The goals of the current study's project intervention program referred to both the children and the student mediator. The goals of the research for children were to promote literacy achievements, vocabulary knowledge, the relationship between signal and sound letters, phonological awareness opening and closing sounds, writing letters, and finally writing words in the process of using learning strategies, by integrating the principles of mediation of the theorists learned in college. In the mediation process, the project "Let's get to know our beautiful language" intervention program was based on the findings of research and practical experience in the field of education and treatment that raising, the value of the theory of experience in mediated learning that provides a major role to implement the principles of mediation in adult-child interactions in order to enable the process of effective learning (Tzuriel, 2020). According to studies, stimulating their own curiosity and engaging children are important motivators for developing the learning drive and have a significant impact on cognitive performance (Hassunah Arafat et al., 2017; Schwartz, 2022; Stillman & Anderson, 2016; Sung et al., 2019). As part of the project intervention program, we tried to create literacy activities with the Puppet Theater integration, a training program in phonological awareness and handwriting, which would affect the advancement of literacy achievements among early childhood children in the Arab kindergarten.

In the project intervention program we have included four subjects from the Early Childhood curriculum (Ministry of Education, 2019). *The main topics in the curriculum:*

*A. Alphabet skills and first reading and writing:* Reading and writing are complex skills. The alphabetical knowledge includes the recognition of the letters and phonological awareness and is used as an infrastructure for purchase decoding and spelling abilities.

*B. Linguistic competency:* Linguistic literacy is the ability to control the language of all its colors, use it adequately in a variety of contexts, and to analyze their components consciously.

*C. Intentional to book:* Listening to a book in preschoolers invites children to develop a preference for reading as a source of pleasure. The fun and enjoyable experience of listening to reading books may develop an attraction with reading books for long-term (Ministry of Education, 2019).

The four subjects are recognition of letters, phonological awareness, enrichment vocabulary, writing words.

*Training workshops for students to be mediators in the project intervention program*

Twenty bachelor's degree students (in the early childhood educational track) were trained for the project. The topics and work of the program were presented to students in a six-meeting workshop, five group sessions, and one individual session. A specialist in Education research editing led the workshop. Each session was two hours long. The workshop's goal was to introduce students to the world of mediation in general and to teach them how to mediate in the classroom.

*Meeting 1:* At the beginning of the meeting there was an acquaintance between the research editor and the participating students. There was a brief explanation of the study conducted in general. The students then watched a presentation and received a lecture in which they were presented with a theoretical and practical background about mediation. In the second part of the meeting, examples and demonstrations were given to integrate the principles of mediation in the kindergarten in working with kindergarten children. The meeting ended in summarizing what was learned.

*Meeting 2:* In the first part, the students learned about literacy and emergent literacy and their importance for acquiring reading and writing. In the second part of the meeting was presented intervention program to promote literacy among children in kindergarten to the students, the program present tools to promote emergent literacy. The first practice was advancement of phonological awareness, opening and closing sound. Each one of the students has experimented with one of her colleagues in the classroom. The meeting ended with the intermediate feedback and the mapping needs of students working with the tools.

*Meeting 3:* At the beginning of the third meeting was presented to the students the second tool's instrument to promote emergent literacy. The second part of the meeting was presented to the students the intervention program in kindergarten and the tools to promote the second emergent literacy especially the second practice tool is vocabulary, so were chosen literacy stories to work with them in the kindergarten, with the use of the puppet theater. Students were presented with a theoretical and practical background on the theme of Puppet Theater in general and theater dolls as a didactic tool. In the second part of the meeting, examples and demonstrations were given to integrated theater dolls in working with kindergarten children. The meeting ended with summarizing the learned.

*Meeting 4:* In this meeting, the students learned the "puppet theater" language; in the second part of the meeting was presented to the students the Intervention program in kindergarten especially the third practice tool – it is the literary texts. In this meeting were presented the stories to learn: the first story is The Small Silver Fish, author Paul Corr, translated to Arabic by Anton Shalcht; the second story is The Three Butterflies, author Leven Kinpis, translated to Arabic by Salma Almadi; the third story is The Fish Who Did Not Want to Be a Fish, author Paul Kaher. The fourth story is The Breakfast, author Mohammad Ali Taha.

*Meeting 5:* At the beginning of the fifth meeting, were presented the fourth instrument to promote emergent literacy, especially the writing training program. In the second part of the meeting were presented to the students the diagnostic tools to be used to collect data, before, during and after the intervention program.

*Meeting 6 – personal:* The sixth meeting was personal. In this meeting, each student received a research kit that included the work plan in kindergarten and the research tools to treat the written language in kindergarten, to hold a discussion with children in the kindergarten as well as data collection tests.

In the first part of the meeting, each student has received a short training session for the use of the diagnostic tools of the research to collect data. In the second part of the meeting, every student has experimented personally with the puppet theater and accepted feedback on the operating way from the conjunction with activities promoting literacy in the preschool children in Arab society developed for this research. We have focused on literacy in four subjects from the Early Childhood Curriculum (Ministry of Education, 2019). The four subjects are recognition of letters, phonological awareness, enrichment of vocabulary, writing letters, writing words: All of these in a level that corresponds to the child's age (Lazaridis et al., 2016).

*The course of the project Intervention Program in kindergarten*



The kindergarten intervention program was passed on to 11 regular kindergartens by 20 students who had been trained to work with children in kindergarten. The intervention program included ten 20-minute meetings on average. Each meeting was led by the same student, and each group included 6-7 children. Each student was assigned to teach one of the group's activities to promote literacy among children, specifically one that promotes word writing. From the beginning and in the course of the work in the kindergarten, the students were guided to give a place and to emphasize the written language in the kindergarten and to relate it, such as words written on the kindergarten teacher's activity board, or the children's names on the drawers, or the names of objects in the kindergarten. The purpose of this directive guide is to train the students and the children to give reference and interest to the written language. The purpose is training the children to look at the words.

### *Activities*

#### *Visual distinction activity to pay attention to the written language in the kindergarten*

Students have to teach the group through a fun activity to try to identify, make distinction and read written words in the kindergarten, as for example their names on the drawers, or names of objects in the kindergarten or names on the food box and so in the corner of doctor, the corner of the story, the corner of calculation, the corner of the doll. For example, "let us look at her, see what is in there? There is something. What is this thing? These are words". "Here, for example, this drawer has the name Mohammed. On the second drawer is the name of Amneh. And this is Library, computer, closet".

#### *Phonological awareness activity*

Students were teaching children about opening and closing sounds, syllables, and phonemes through a fun activity exercise. For example, which sound do we hear at the beginning of the word "fall season"? Which sound do we hear at the end (as in closing) of the word? We'll break the word kindergarten down into syllables. Songs from the Khraz-Mghana region were used for this activity.

#### *Activity on understanding sounds and letter names*

Students teach the children's group through enjoyable activity and training to know the sounds and names of the letters. Activities have been included in training children to know the sounds and the names of the letters. For example, the word Muslim مسلم - which sound we here in the beginning of the word Muslim? Which sound we here in the final (closing) of the word? The sound of the letter is m, but the name is mem.

#### *Activity on the knowledge of print*

The activities also include training on the knowledge of print as the direction of writing and text in Arabic; distinguish between letter and word and phrase. For example, in the memory week of birth Prophet Mohammad, this text is found in the kindergartens. The students worked on knowledge of print as in writing. For example, "we have a board here. There are a few words on it, let us try to see what is in the word". Distinguish between the letters of a word.

*The activities on reading literacy stories used by Puppet Theater (4 activities)*

Students have to teach through enjoyable activity and practice the four literacy texts used in Puppet Theater. Each meeting was devoted to the learning of one text. The student mediator was asked to read to the children each of the texts at least twice, and to focus on three subjects: new words that were marked within text, synonyms, and opposites. We do not tell the students how they should mediate these issues. The student's mediator was guided to read books using Puppet Theater - they used the books *The Small Silver Fish*, *The Three Butterflies*, *The Fish Who Did Not Want to Be a Fish*, and *The Breakfast*.

The activities included training for vocabulary by reading books that there is a most of evidence that supports the relationship between the prevalence of reading books to children and the development language of children.

Gilkerson (Gilkerson et al., 2017) for example, found that the frequency of book reading was related to the vocabulary of age three to six. In addition, in another research, was found a positive link between the frequency of reading shared book at the age of kindergarten and the verbal ability at the age of the school (Leung et al., 2020). Lervåg (D. Dolean et al., 2019) refer to the stability and reliability of these contexts and emphasize the importance of reading books for children to the development of their literacy. According to them, reading books is a central aspect of a literacy environment that gives knowledge of words, letters and sounds before the children purchase a reading and writing. The investigators of Buckingham (Buckingham, 2020) have concluded that the children are purchasing many skills such as arithmetic concepts, predictive ability, beyond knowledge about the writing system. Reading shared books parent-child, enables a conversation about the child's personal experiences, and thereby encourages processes of examining the hypothesis and reasoning (Canfield et al., 2020). Conversations while reading books that point the children beyond immediate and encourage children to speculate and to examine speculation are promoting the development of spoken language (Snow et al., 2014).

*Writing training activities*

In the Writing training program, there are 4 activities to teach the group.

*Acquiring orthographic knowledge* - students were guided and trained to arrange the children to write letters according to visual cues, using numbered arrows directing the order and direction of the lines that comprise the letters. In addition, the students have training letters retrieval from memory after the letter has been covered, focusing on the space, in the direction of the lines that comprise the letters and the internalization of the letter forms. This activity was based on that direct training in writing the letters can improve writing products, in terms of the speed of writing and quality (Kirby et al., 2021; Neumann, 2018).

Then, the students taught the children to design the letters by using the "traffic light" image as a guide to the direction of writing. The green color is the starting point of writing the letter, the yellow color is the continuation of the writing, and the red color marks the end point (Hassunah Arafat et al., 2017).

The renewal of this method is the use of colors as a visual image of a familiar object for the children (traffic) which is an associative basis for supporting memory and experiencing tangible and for internalization of the letters, such as writing in the sand, with rice, use of stickers, plasticine, and so on, the method is structured according to the degree of difficulty, from straight letters such as the letters A – ا - alf to diagonal letters such as the letter م -M -ميم and groups of similar-structure letters. For example, the letters: ز ر and س or ش, and ح خ ج the students learned the children from the beginning of the program how to format the letters correctly in terms of writing direction, a connection between the letter elements, and organization the written inside line, attached to the lines, and preserving the spacing that is appropriate between the letters and the words.

All this is intended to promote the children towards an efficient and flowing manual writing. This program was based on the teaching of manual writing and practice which would help not only the quality of the writing, but also further academic performance among children. In a study Marieke Longcamp, Marie-Thérèse Zerbato-Poudou and Jean-Luc Velay found that children who were trained in manual copying of letters demonstrated a better way of identifying letters than children who were trained to type letters on the computer. Students used the erasable board and sensory tasks for internalization of the letters, such as writing in the sand, with rice, use of stickers, plasticine.

#### **Purposes of the study concerning emergent literacy in kindergarten**

1. To check the contribution of using mediation on the indices of achievements in the field of literacy.
2. To what extent mediation learning strategies predict achievements in the field of literacy of kindergarten children.

## **Research Hypotheses**

1. Using mediation (through the project) raises achievements in components of the emergent literacy for the experimental group.

2. Children who received mediation with the intervention program will see higher achievements in phonological awareness, opening and closing sound, in the relationship a sound with signal letters, in the vocabulary opposites, similar, different, categories, and writing letters.

3. Different learning strategies will have different effect – children who have received mediation through the intervention program of the principles of Vygotsky, Feuerstein, Klein will see higher achievements in the components of literacy.

## **Research method**

### **The test procedure**

- In the *first stage*, we went to receive proper permits to experiment in the kindergartens in the center area for practical training to the students.
- In the *second stage*, we received the names of the kindergartens and the horticultural teachers from the supervisor of the kindergartens.
- In the *third stage*, we went to obtain coordinating permits to conduct the research from the Ministry of Education's "chief scientist".
- In the *fourth stage*, the students entered the kindergartens and became acquainted with the children and the kindergarten teachers.
- In the *fifth stage*, personal letters were sent to all the children's parents who were chosen by the teachers and the students. In a letter, we present the thesis and we asked parents to sign their consent to their participation in the study and to make a mediation interaction between the children and the mediator.
- In the *sixth stage* the students were asked to choose seven children in consultation with the kindergarten teacher that the children would be a heterogeneous also in skills and abilities.

The sample of the children from the kindergarten was randomly made from all kindergarten children, whose parents expressed their permission to participate in the study.

We asked 370 parents for referrals and received 320 positive answers.

### **Characteristics of the participants:**

In the study, two groups were examined: The following children and students were imported from each of the groups' properties. Students mediators -they are learned in early childhood track in the college.

The *mediator research participants* are students in the College of teacher training in the early childhood track (N= 20). Each of the students has been training work in Arab kindergarten in regular education in the central region of the country Israel. During their studies in the kindergarten, they were accompanied by a practical training course subjects.

The *children* in the study attended in the regular Arab early childhood cults from the center of Israel.

Table 1.

Demographic characteristics of the sample: distribution of children participating in research by age and gender

Variable	Research Group		Control group		SD	T
	M	SD	M	SD		
<b>Gender</b>						
- Male	73		52			
- Female	82		103			
N	155	1.53	0.501	155	1.66	0.474
<b>Age</b>						
- Age 5-6	96		76			
- Age 6-7	59		82			
N	155	1.39	0.489	158	1.53	0.501

Parents are from different socioeconomic groups.

### Research instruments

Both quantitative and quality methods are used in the study.

#### Tools (instruments) for the mediator students

*Observation of mediation learning strategies:* this tool works for the purpose of the present research of mediation observation and type of mediation and had been divided into five types of observations according to theoretical forms. It includes observation of the mediation learning strategies according to Vygotsky; observation of the mediation learning strategies according to Feuerstein; observation of mediation learning strategies according to Klein; observation of mediation learning strategies according to Gallimore and Tharp; observation of mediation learning strategies according to Diana Wolf; observation of mediation learning strategies.

The observation was held in all the meetings in which the student was asked to teach the group every activity, such as a story. As part of the observation, the interaction between the student and the children group was examined. The focus of the observation was the students.

The following are details of mediation learning strategies (mediation strategies) that were observed between the children and the mediator students.

#### *A. Observation of mediated learning strategies according to Vygotsky*

A tool for observing the learning strategies of the students who are working with the children was developed by the researchers for this purpose (Boris Minchev & Hag Ihia, 2017). The observation tools based on the principles of the Vygotsky (Vygotsky, 1978) included:

1) The type of interaction between students - mediators and children such as an activity that is made in order to communicate with the child, for example, using a conversation, or another relationship like a smile, hand gestures such as putting a hand on the shoulder, of the child, applause, nod. Or participation that means that the student participates in the activity, and, as such, this index included the behavior of a non-verbal connection.

2) Use of mental and artistic tools - the activity of the mediator in the use of symbolic intermediaries tools; language use like explanation and interpretation of words; using a different order, such as the student account, the mediator uses quantity numbers; using a drawing, the student who is a mediator uses the painting or asks the children to draw something; using works of art, the student who is a mediator uses pictures, videos, tablets, stories; using diagram charts, or graphic charts; or maps. The mediator uses writing or asks to write in the form of air or points or works with pastels. Psychological tools - this mediation has been defined as the activity of the mediator in mental tools such as: the use of the student's signals the uses mediator certain signals in the activity. Using certain hints on a task; using the mediated student presents ideas and asks the children to bring ideas; art, she presents art and interprets it with children. In oral discussion she discusses the trust and gives them the right to speak, technological tools like a projector, etc.

3) Social interactions as a mediation for the development learners thinking - this mediation is the activity by the student mediator as the use of intermediate teaching styles. The student who is the mediator is trying to make connections between the past activities and their concepts in which the current activity has been. Beginning of response and feedback, the student gives the children an opportunity to express their familiarity with activity in their own terms. She discusses with the children in the structure of the activity and from process; she discusses with the children in the words of the terms of the subject of study. Negotiations and dialogue the student mediator talk with the children in the style of negotiation and dialogue. She is using open questions, the student listening to the children's reference and answering their discussion.

4) Support and scaffolding - scaffold is a type of help offered by the student mediator to support the learning; the student helps the child to complete the task; the student mediator

helps the child to understand an idea that he could not understand independently; the student mediator divides the task into simple parts; uses cooperative learning with the children; gives the children the opportunity to experiment with the task. The student mediator presents models. The student mediator gives advices and procedures; the student mediator is conducting an open discussion with the children.

Educational accessories – they include monitoring training; the mediator directs the child to a certain function in the activity; analyzing with the child the difference between his functioning in the activity and the intended function in activity; help assisting – the student helps a child in the use of means of learning or learning styles to come from the level of functioning that he has to the intended level of functioning. The student mediator raises self-confidence in the children begins with tasks that need less help. The student mediator provides help to children to complete the task quickly and successfully. The student mediator leaves the children to help themselves. The student mediator is not trying to teach the children a certain skill. The student mediator thinks how to dismantle the accessories gradually and then whole.

5) Connection between everyday concepts and scientific concepts – that is activity in the use of a connection between close concepts and scientific concepts, the mediator teaches at first the automatic concepts and connects with the intended term. The student mediator is trying to choose close concepts everyday than the intended term as a beginning to understand. The student mediator is trying to use means and accessories to design scientific concepts of science in the absence of everyday concepts.

*Specification:* Each of the interactions between the mediator and the children's group during the teaching activity (we had 10 activities in 10 meeting of literacy activities for children) was filmed and consecrated. Any behavior of the mediator was classified according to the appropriate mediation category and received one point. Specification each of these ways is done separately. Once the observations have been analyzed, each mediated specification is determined in each of the mediation categories. The grades express the amount of mediation during the mediation.

*Validity* – to analyze the observations, the researcher editor trained the process conducted by a counselor with extensive experience in encoding of the observations of a mediation interaction, and whose research work has also been carried out in this field. The analysis of the student-child interaction took about five hours average for each interaction. To check the validity of the judges in the current research, two observations of the 200 were randomly selected. The observations were analyzed by the research editor and the guide

independently. The range of adapters received was  $r .98$  up to  $r .99$ . It means, the credibility between the judges was extremely high.

*Reliability* – the observations have been made through judicial analysis and factor analysis, and the internal reliability was tested by Cronbach's alpha to the overall index of the Vygotsky Cronbach's alpha was 0.838.

#### *B. Observation of mediation learning strategies according to Feuerstein*

A tool for observing the learning strategies of the students who are working with the children was developed by the researchers for this purpose (Boris Minchev & Hagihia Himat, 2017). The observation tools based on the principles of the Feuerstein included:

1) Intent and reciprocity – this is defined as student's attempt to focus the child's attention. The student mediator takes steps like a deliberate choice of stimuli and omission of others, meant organizing them in an order and directs the child's response. As for the learner child, the mediator is directing his attention and regulates his state of alertness. The significance of this principle is that the students act in reciprocity by adapting to the needs of the child and the ability that he expresses. It is impossible to relate to the intention without considering the principle of reciprocity, that the intention to mediate without the child's response to the middle efforts is ineffective.

2) The significance meaning mediation – this mediation was defined as a process that the student passes to the child his emotions, his enthusiasm, and the meaning that he attaches to things. Excitement experiences constitute a basis for creating the need to look for meaning in the experiences that the child experiences in his everyday life. The everyday behaviors can be part of the excitement process.

3) Extension (= transfer) – the mediation process for the transcend include different behaviors as explanations, specifying relationships between objects or processes, displaying analogies or sequences, and presenting causal relationships and other relationships. This is beyond the immediate and concrete need for the situation.

4) The provision of competence – this mediation is defined as behaviors by which the students try to give the child the feeling that his activity is successful. She does this with encouragement and approval. The right to a feeling of ability relates not only to the success experiences of the child that results from the fact that the action is performed, but also to the work of the same action with the given permission from the student. The student who is witness to success, identifies it for the child and relates to the components of the behavior that have resulted in success. The existence of these two conditions, the ability to feel and vote on the



change, enables the child to gain a sense of control over the world around him and the belief in his ability to succeed.

5) The intermediary for regulating behavior- this mediation was defined as those of the student mediator transferring the message to the child that it is necessary to stop and think before any action. By means of regulating behavior, the child learns to be aware of the need to adapt his behavior and level of intellectual activity to the level of accuracy required from him when performing a role or action. The child learns, among other things, to take measures that will result in optimal balance between speed and efficiency and accuracy, according to the task's difficulty.

*Specification:* as described above.

*Validity* – the range of adapters received was  $r .98$  up to  $r .99$ . It means, the credibility between the judges was extremely high.

*Reliability* – the observations have been made through judicial analysis and factor analysis, and the internal reliability was tested by Cronbach's alpha to the overall index of the the Feuerstein alpha Cronbach's was 0.956.

### *C. The strategies for experimenting with learning mediated according to Klein's principles*

For this purpose we used a visual instrument for the learning strategies of OMI Interaction mediation of observation, developed by Klein and her colleagues (Klein, 1988, 1996; Klein et al., 1987), based on the study theory of Feuerstein and his colleagues (Feuerstein, 1979, Klein et al. 1987).

The observation is intended to evaluate the learning mediation strategies of the mediator in according to the first five categories of Klein principles: focusing, mediation of meaning, competence, extension mediation, and mediation for regulation of behavior. The observation was held at the meeting in which the mediator was asked to teach the group activities. As part of the observation, the interaction between the student and the group of children was examined. The focus of the observation was examined. The following are the details of intermediary learning strategies (strategies mediation) observed in interaction between children and each of the intermediate.

1) Focusing – this mediation is defined as the actions of the mediator to focus the children's attention on the topic of learning, and to achieve a change in clarity of their perception so that they can understand better, For example, justice, intonation changes, illustration, demo. This index included verbal behavior, non-verbal behavior, and a combination of verbal and verbal behavior.

2) Meaning – it is defined as giving meaning or explanation for events, people, Actions, objects, and emotions, emphasizing their importance or value. This index included the behavior of an expression of nonverbal emotion, an action of naming and an integrated action of the naming and an expression of non-verbal emotion.

3) Transcendence (= transfer) extension – this mediation is defined as the actions of the mediation to create generalizations and repopulation in the inclusion of principles that are beyond the specific context of the subject. This index included explanation, process clearing, comparison, addition of knowledge, link to experiences and personal knowledge beyond the topic learned.

4) Competence – mediation of the feeling of ability has been defined as expressing the verbal satisfaction of the mediator from the children's behavior in relation to the subject of learn, and the definition of the specific components that contributed to their success. This index included a verbal reinforcement and a non-verbal reinforcement in an explanation of the reinforcement.

5) Regulation of behavior – mediation for the regulation of behavior is defined as an intermediary behavior, which aims to help the children develop behavior strategies that will help the better understanding of the subject being taught. Regulation of behavior is manifested in organizing the behavior, stopping an impulsive response, and filtering irrelevant stimuli. This index included a demonstration, verbal explanation, or combination of both.

*Specification:* as described above.

*Validity* – The validity analysis between two judges held in the research of Klein and her colleagues (Klein. et al, 1987) for mediation categories, the following adapters were received: intent and reciprocity between 0.76 and .085 Expansion bio 0.62 to 0.83, meaning between 0.65 and 0.80. A sense of ability is between 0.74 and 0.92, and regulating behavior between 0.68 and 0.81. Other studies conducted on children aged 5-8 years received similar coordinators between two judges (Hay, 1999; Tzuriel & Eran, 1990; Tzuriel & Ernst, 1990; Tzuriel & Weitz, 1998)

*Reliability* – In the research conducted by Klein and her colleagues (Klein et, al 1987) for infants 4, 8, 12, 24, and 36 months of age, a ten-minute observation of a mother-child interaction during feeding, bathing, and acting predicts the child's cognitive ability at four years of age. Positive adapters between each of the mediation categories observed indicated a period of stability over the five mediation indices. In the longitudinal study of Klein and Aloni (1993) a causal link between the mediation indices of the mother, as they are manifested in the observation of a mother-child interaction, and the child's cognitive achievements at the age of

four. From studies that were made with older children and other mediators, such as a teacher mediator and peer mediators, the causal relationship of the mediation indices in relation to the ability to modify cognitive variability and the cognitive performance of children (Shamir & Tzuriel, 2004; Tzuriel, 1999; Tzuriel & Ernst, 1990; Tzuriel, Kaniel, Zeliger, Friedman, & Haywood, 1998; Tzuriel & Shamir, 2007; Tzuriel & Weitz, 1998).

The observations were made through judicial analysis and the factor analysis, and the internal incidence of the indices was examined by the alpha of Cronbach's. The total metric of the Klein Alpha Cronbach's was 0.956.

#### *D. Observation of the mediation strategies for writing*

An observation designed to evaluate the mediation strategies for writing based on Aram's research (Aram 1998, 2005) was developed by the researcher and prof. Boris Minchev. The observation was held at the meeting in which the mediator was asked to write words with the child. The quality of the literacy mediation traced:

1) Teaching strategies - the student mediator relates to given letter; the student describes the word to write it; the student mediator analyzes the word for sounds and phonemes; the student mediator is trying to connect the letters to her names. The student mediator is trying to connect letters, sounds and shapes. (grapho phoneme).

Student mediator refers to the language. The student mediator relates to the final letters in the word. The student mediator relates to the letter score.

2) Extent of participatory independence the degree of collaborative student independence relates to the sharing and, is a independence tasks of helping of a child in writing.

3) Ownership task - the student mediator regards the assignment as a shared task as collaborative task between her and the child; the student mediator regards the task as a separate task for a child in every pair of words, the student's being evaluated to the task, whether she sees it as a joint task or as a separate task (her or the children).

4) The degree of independence in writing - mediator gives the child independence during the writing act. The student mediator gives the child a chance to experiment alone. How much she lets him act on his own and how much she shares with herself, repairs herself, lets him try, etc.

5) Mapping of names - the student mediator gives the child the right to map a letter for instance. The student mediator lets the child identify what is in the picture, identify the object and take it down. After the naming she has to let a child on the child write the words or the letter.

*Specification:* each of the interactions between the mediator and the children's group during the instruction of the activity (we had five activities in five meetings of writing activities with the children) and was filmed and consecrated. Any behavior of the mediator was classified according to the appropriate mediation category and received one point. Grades each of these ways is done separately. Once the observations have been analyzed, each mediated specification is determined in each of the mediation categories. The grades express the amount of mediation during the mediation.

*Validity* – the range of adapters received was r. 98 up to r.99 that is, the validity between the judges was extremely high.

*Reliability*– the observations have been made through judicial analysis and elements analysis, and the internal incidence of indices was tested by the alpha of to the Cronbach's total index of the Cronbach's alpha was less low but the mapping index of names was Cronbach's Alpha 0.950

**Children's (instruments) tools:**

1. Spoken language processing test
2. Phonologic awareness of an opening sound
3. Phonologic awareness of a closing sound
4. Knowledge of letters and relationships between sound and signal letters
5. Vocabulary - knowledge about the spoken language
6. Writing letters
7. Writing words test

*A. Spoken language processing test*

Spoken language processing test (Rum, Morag, and Peleg, 2007) is a test for spoken linguistic ability in children aged 11-5 years. The test was chosen to evaluate the language achievement of the children participating in the study before intervention. The test includes two pre-exams: "Naming " and "Verbs" and five sub-tests: "Categories", "Imagination", "Difference", "Meaning" and "Descriptions" (Rum and others, 2007.) To test the achievements of the language prior to intervention, this study is used in sub-trials: "Categories", "Imagination" and "linguistic". The tests were passed and painted in accordance with the standard procedures appearing in the Quiz Manual (exhibit 3 shows the sub-tests used in this study).

Sub-test for categories – in this test, the child was asked to specify three items belonging to its specific category. For each item, the tester student has asked the child to say three names of items from a specific category. For example, the tester says: "Tell me three names of flowers."

*Specification:* Score 2 is given when the child said three nouns corresponding to the requested group category. Score 1 is provided when the child has given a partial answer, for example, only two items that belong to a category or three specific semantic-level items, or one true item and two specific semantic-level items or using a phonological error in one word of the items. Score 0 is provided when the child has said only one correct answer, or if it has not specified any object names that belong to the category.

Sub-test for similarity and sub-test for difference: these two sub-tests include two types of tasks and require two different types of reactions from the child. In the similarity test, the child is asked to present similar aspects of the two nouns, while a different test is asked to present the contrast between them. For example, the tester student says: "Car and bus, tell me what they are like?" After his reaction and writing his answer, the testers add and ask "Now tell me what they are different?"

*Specification:* Score 2 is given when the child is using a proper sentence and indicates a significant similarity or difference between the two names, or when it indicates a full sentence to their super category, or a common and typical action for both. Score 1 is given when the child indicates an intrinsic similarity to the top category of the two items, but he uses a sentence in which words are not correctly used. Another option for partial marking is when the child indicates an imaginary or non-central or generic difference. Score 0 is given when there is no correct answer, or when the answer is spoken in an unclear language, or the imagination is completely non-essential.

Sub-test for similarity and sub-test for difference are given to a child at the same time.

*Validity and reliability:* the reliability test between items in each of the five sub-tests was conducted by the test authors through the Cronbach's Alpha. The results of the operation are regarding the giving of tests included in the study: category 0.69; similarity 0.79; differently 0.68. All grades that were received are over 60, evidence of reasonable credibility of each sub-test. A correlation examination between the five sub-tests made by the test authors was found that the coordinators ( $p < 0.1$ ) also found a definite correlation between all five sub-sections and the results of the general test. The adapters between all the tests were found clearly ( $p < 0.1$ ). Also found a definite correlation between the five sub-tests and the results of the general test. In the current study, the internal consistency of the three sub-tests that used was tested for  $r$  internal consistency has received high 0.816 internal consistency; similarity 0.885; and difference 0.893. Pearson correlations made to test the relationship between these three tests found relatively high correlations .268\*\* 1.00\*\*. In view of this, a general score of the three tests was built in the internal consistency test of the overall index consistency was obtained

0.659. The whole sample before the project intervention program the category 0.834 after the intervention 0.79; similarity before 0.42 after 0.897; differently 0.686 after 0.916. Modified before 0.686 after 0.916.

#### *Achievement tests in the field of literacy*

The achievement tests are designed to evaluate the contribution of use of literacy activities with the children, to measure literacy in the children participating in current study research before and after mediation by the project "Let's get to know our beautiful language" intervention program. In the field of emergent literacy, monitoring the process of literacy components is done by using 5 tests that measure the literacy level of the children.

The first of the project intervention program procedure in the study was 10 sessions of literacy activities that student taught the children (7 children). The second procedure was five sessions personal with each child separately where the student tests their tests literacy, these tests literacy were selected because they are indicative of children's acquired ability in adult support (7 children per student). (Ferreiro, 1986; Ferreiro & Teberosky, 1979; Garton and Pratt, 1989; Til 1984; Klein 1993, 1991; Olson, 1984; Ferreiro & Teberosky, 1982, Levin & Tolchinsky, Lansman, 1989; Vygotsky. 1978).

#### *B. Phonologic awareness of an opening sound*

This test measured the child's ability to identify the smallest opening sound of the word. The student introduced 16 words to the child the correct answer received a 1 score, the wrong answer received 0 score. The test was developed by the researcher's team (Korat Ofra, Dorit Aram, Hassunha-Arafat, Elinor Haddad and Himat Hag-Yehiya, 2014). The phonological awareness test of an opening sound is measured according to the total amount of correct answers in the test. The maximum score in this test is 16 points. This test was passed both before and after the project intervention program.

*Reliability:* testing the internal consistency of a test and a sound-type opening for the whole sample was in Cronbach's Alpha 0.799 before 0.958 after 0.964.

#### *C. Phonologic awareness of a closing sound*

The test was developed by the researchers team (Korat Ofra, Dorit Aram, Safieh Hassunha-Arafat, Elinor Haddad, Himat Hag-Yehiya, 2014). The test is about the child's ability to recognize the little closing sound of the word. The student introduced 16 words to the child. The correct answer received 1 score; the wrong answer received 0 score. The phonological awareness of a closing sound is measured according to the total amount of correct answers. The maximum score test is 16 points. This test was passed both before and after the project "Let's get to know our beautiful language" intervention program.

*Reliability:* testing the internal consistency of the test and the closing sound letters was Cronbach's Alpha the whole sample 0.821 before 0.905 after 0.947.

#### *D. Knowledge of letters and relationships between sound and signal letters*

The test was developed by the researchers' team (Korat Ofra, Dorit Aram, Safieh Hassunha-Arafat, Elinor Haddad, Himat Hag-Yehiya, 2014). This test measured the ability to identify the letters and their names, knowledge of the relationships between the letters and sound and signal letters; the punctuation; the proud. The students introduced 10 letters to the child the correct answer received a score, 1, the wrong answer received a 0 score. The variable knowledge of letters and relationships between sound signal letters is measured by the total amount of correct answers in the test. The maximum score in this test is 10 points. This test had been passed both before and after the project "Let's get to know our beautiful language" intervention program.

*Reliability:* examining the internal consistency of a test of knowledge letters and relationships between sound signal letters was Cronbach's Alpha before 0.932 after 0.946.

#### *E. Vocabulary - knowledge about the spoken language*

This test measured the child's ability to recognize words and their opposite. The student introduced 20 words to the child, the correct answer received 1 score; the wrong answer received 0 score. Vocabulary variable – knowledge of the spoken language is measured by total amount of correct answers in the test. The maximum score in this test is 20 points. The test had been passed both before and after the project "Let's get to know our beautiful language" intervention program. The test was developed by the researchers' team (Korat Ofra, Dorit Aram, Safieh Hassunha-Arafat, Elinor Haddad, Himat Hag-Yehiya, 2014).

*Reliability:* examining the internal consistency of a test words was Cronbach's Alpha for the whole sample is 0.819 before 0.935 after 0.972.

#### *F. Writing letters*

The test was developed by the researchers' team (Korat Ofra, Dorit Aram, Safieh Hassunha-Arafat, Elinor Haddad, Himat Hag-Yehiya, 2014). This test measured the child's ability to write letters in Arabic and were randomly selected in 10 letters. The student asked child to write 10 letters and the correct answer received 1 score and the wrong answer received 0 score. The writing letters is measured according to the total amount of correct answers. The maximum score test is 10 points. This test was passed both before and after the project "Let's get to know our beautiful language" intervention program.

*Validity and reliability:* the internal consistency test of achievement tests was found in internal consistency 0.94 the whole sample before 0.965 after 0.976.

### **The data collection process**

The data collection process took place during one academic year and included the following steps:

- A.** Training for literacy activities that promote emergent literacy in kindergarten.
- B.** Introductory meeting between the students and the group of children participating in the study.
- C.** Tests before the mediation by the project "Let's get to know our beautiful language" intervention program – pre-test for the group of children participating in the study.
- D.** The intervention program "Let's get to know our beautiful language" - any student asked to teach the groups.
  - D. 1.** Through a fun activity or game training in phonological awareness opening and a closing sound.
  - D. 2.** Teaching the four literacy texts used by the puppet theater. Each meeting was devoted to learning one text. The student as a mediator was asked to read to children every one of the texts at least twice, and to focus on three subjects: new words marked with text, synonyms, and opposites. We do not tell the students how they should mediate these issues.
  - D. 3.** Teaching the group through enjoyable activity training sound and letter names used kharza Meghna.
  - D. 4.** Teaching the group through enjoyable activity direction of text and writing in Arabic; distinguish between letter and word and phrase.
  - D. 5.** Teaching the group through a fun activity to try to read written words in the kindergarten, such as their names on the drawers, or names of objects in the kindergarten or names on food enclosures and so on.
  - D.6.** Teaching the group a training program in handwriting
- E.** Tests after the project intervention program for the group of children participating in the study.
- E.** A photographic interaction between the student and the children in the experimental group during the activity.
- F.** Tests following the "post-test" interaction for the children of the experimental group and the children of control group for each of the learned elements after the project intervention program,

Stage A – training workshop for students in the project intervention, see the paragraph - intervention program for student training workshop.

Stage B – introductory meeting the students and the Group of children participating in the study. In the second stage of the study, the student's mediators were asked to hold an



introducing meeting with the children participating in the study. It was impossible to start collecting data and the project intervention program by students that the children did not know. The purpose of the meeting was to introduce the children to students. At the introducing meeting, the teacher kindergarten presented the student mediator for children. After she was presented, the student mediator told a story in a demonstration for children. The meeting took about 20 minutes.

Stage C – tests before the intervention program pre-tests of the children's group participating in the study.

In the third stage of the study, all the children of the study examined the writing of words. In tests from the opening sound test, closing sound, spoken language processing, the Kaufman vocabulary test, writing letters, identifying letters, writing words.

Each child is individually examined during a single session. Each session lasted about 15 minutes on average with children of ordinary education. All the tests were passed by the students who received prior training. The data gathered at this stage was used to assess the level of initial achievements in the language field before the intervention program. It should be noted that the test is specification done by the research editor.

The results received in this test were used to compare the results received in the tests after the intervention program for each of the texts learned. Also, the specification of this test is done by the research editor.

Stage D –The project "Let's get to know our beautiful language" intervention program: activating 15 activities that include all steps from A to F (as described in the Intervention Program section).

In the fourth stage of the study the project "Let's get to know our beautiful language" intervention program was triggered for the children of the kindergarten who participated in the study N =154 The project "Let's get to know our beautiful language" program was passed for 5 months on average in each of the kindergarten and consisted of 15 teaching sessions 20 minutes on average for each activity). The learning triggered by the mediator's students. The encounters were held to the experimental group, when the experimental group was integrated with a theatrical puppet in the mediation process.

Stage E –photography of interactions between the mediator and the children in the experimental group when activating the activities of interaction between the mediator and the children's group was filmed in the kindergarten in a special room allocated for this purpose. Each interaction lasted approximately 20 minutes on average but the analysis of the behavioral behavior in each interaction is held only for 20 minutes. They were filmed when they teach

both the experimental group. The choice for example in the story was made based on the field of literacy that shows the story as aliteracy" text, which represents a great deal of importance to encourage emergent literacy in children both in the aspect the language and the cognitive aspect (Aram and Biron, 2003; Cozaminsky, 2002; Rum and others, 2003; Kaderavek & Justice, 2002, Raikes et al., 2006).

It is not said to the student that they are examined in relation to the mediation interaction. The operation was later done by the OMI index developed by Klein (Klein et al., 1987) in addition we use tools that developed by Prof. Boris and the researcher for evaluating the mediation strategies of the mediation according to Vygotsky, Feuerstein Klein, Gallimore and Tharp and Diana Wolf.

Stage F – tests after (post-test) the interaction mediation of the experimental group and the Children of the control group for each of the components learned immediately at the end of each one of the interactions, we tested each of the children who have participated in individual interactions in the test of achievements according to the study. The past of the tests after the intervention program allowed to evaluate the effect of the intervention program for children's achievement in each of the components learned, both in the experimental group. The tests were individually tested to each child during five sessions each of which lasted between 10 and 15 minutes in the regular children's education. The tests were specification by the research editor

### **Descriptive data**

The main purpose of the proposed research was to examine if learning and training in mediation approach in the college brings students to use mediation integrated in their work in the kindergarten. For this purpose was introduced project "Let's get to know our beautiful language" with intervention program that allowed to measure how students applied mediation in the field of emergent literacy.

Another aspect of tracing the applied mediation was to see what principles of mediation are used more often – these that are studied in the college (principles of prominent authors like Vygotsky, 1978; Feuerstein, 1998; Klein, 1993, 1991, 1997).

Table 2.

The strategies experimenting mediation learning according to Vygotsky; Feuerstein; Klein

Vygotsky				Feuerstein				Klein			
	<i>M</i>	<i>SD</i>	<i>A</i>		<i>M</i>	<i>SD</i>	<i>A</i>		<i>M</i>	<i>SD</i>	<i>A</i>
Tybe	1.8	1.257	0.787	Intent and reciprocity	4.69	3.666	0.95	Focusing	1.81	1.796	0.924
Mental instruments	6.49	5.333	0.726	Extension	2.66	2.686	0.91	Extension	3.24	2.907	0.921
Interactions	2.41	2.256	0.944	Meaning	3.28	3.016	0.95	Meaning	1.78	1.718	0.925
Scalding and support	7.33	6.671	0.907	Competence	3.43	2.51	0.92	Competence	2.71	2.619	0.939
Mutuality	2.04	2.328	0.916	Regulating behavior	3.74	2.793	0.91	Regulating behavior	1.3	1.446	0.97
Vygotsky	20.13	16.06	0.838	Feuerstein principles	17.8	13.68	0.96	Klein's principles	10.83	10.01	0.956

According to the research hypotheses, mediation in combination with the intervention program will increase the frequency of use of mediated learning strategies among the mediators. In addition, the mediation will lead to higher achievements in vocabulary, phonological awareness, knowledge of letters, writing letters among the children. Another hypothesis was that the children's achievement could be predicted by mediated learning strategies, and that the degree of prediction will be higher in the group of children in the experimental group than in the control group.

The mediation approaches learned in the college come to fruition at working with the children as part of the practical work in the kindergarten. Through the mediation increase the frequency of use of mediated learning strategies among students.

Another hypothesis was that the implementing of the intervention program would increase the degree of the use of strategies according studied theorists, such as Vygotsky; Feuerstein; Klein, it will be higher than the degree of the use of theorists' strategies that have not been learned.

The results will be displayed in the following sections: (1) Strategies experimenting in mediation learning (2) Educational achievement in the field of emergent literacy; (3) Strategies experimenting in mediated learning as predictors an achievement in the field of emergent literacy.

### **The impact of the Project Intervention Program in the field of emergent literacy**

The effect of the Project intervention program ("Let's get to know our beautiful language") was laid down in the collection of activities that the students had done in the kindergartens with the children about the achievements in the field of literacy. The program included the following activities: A Visual activity for the written language in the kindergarten of activities such as correspondence, sorting, etc.; Activities on phonological awareness; Activity on awareness sounds and names of letters; Activity of the recognition of printing to take a picture of Christmas to the Prophet Mohammad and to dismantle the title, secondary title,

Arabic letters, and words; The activities read stories used by puppet theater & Manual Writing training activities.

Hypothesis 1. Using mediation (through the project) raises achievements in components of the emergent literacy for the experimental group.

The intervention program will influence the achievements in the field of literacy among children. As the use of mediation learning strategies increases, the success of literacy components tests increases. The degree of success in components of literacy among children, their achievements will be higher in the experimental group than the achievements of the children of the control group.

The examination of this hypothesis was conducted in an ANOVA analysis of the grades of the emergent Literacy Test, which was held before the intervention program, the independent variables were the type of students according to the group's experimental for the control group. And the dependent variable was the grades of emergent literacy test.

Table 3.

Averages and standard deviation of the grades of emergent literacy tests among the children and the results of the analysis of variance that were made to each individual test.

<i>Components of literacy</i>		<i>experimental group</i> n=155		<i>control group</i> n=157		<i>F(1.310)</i>	<i>Eta<sup>2</sup> η<sup>2</sup></i>
		<i>before</i>	<i>After</i>	<i>before</i>	<i>after</i>		
Opening sound	<i>M</i>	0.07	14.32	0.34	2.85	852.705**	0.733
	<i>SD</i>	0.413	3.141	0.477	3.764		
Closing sound	<i>M</i>	3.11	13.54	0.25	3.11	781.603**	0.716
	<i>SD</i>	2.958	3.606	0.448	0.211		
Relationship sound & letters	<i>M</i>	0.39	15.68	0.13	6.83	134.285**	0.303
	<i>SD</i>	0.489	8.44	0.334	4.46		
Opposites	<i>M</i>	0	10.97	0.25	3.55	195.462**	0.387
	<i>SD</i>	0	4.114	0.448	5.192		
Categories	<i>M</i>	6.99	15.52	1.95	8.03	538.759**	0.635
	<i>SD</i>	2.44	3.89	2.189	2.076		
Similar	<i>M</i>	16.11	22.97	6.78	7.89	1040.82**	0.771
	<i>SD</i>	3.925	4.29	2.231	3.959		
Different	<i>M</i>	7.03	12.52	5.59	5.04	341.495**	0.525
	<i>SD</i>	2.379	4.47	2.431	2.379		
Letters writing	<i>M</i>	0.155	16.02	4.417	4.99	212.598**	0.407
	<i>SD</i>	0.7485	7.301	4.5314	6.001		

On table 3 one can see that in the variance analyses made for each of the emergent literacy test, the significant differences were found in 8 indices. When according to the size of the effect  $\eta^2=0.733$  Eta, one can see that the biggest difference is in the Phonological Awareness Index on opening sound.

To examine the source of the differences between the two groups, two variance analyses were made in which a comparison was compared to the measure before intervention measured after each group separately for a test. Here, too, the source of the differences between the two groups was examined and different analyses were made between measurements before intervention after each group separately for a starting sound test. These analyses found a significant difference between the measurements among the children in the test group  $\eta^2 = 0.086$ ,  $p < .001$   $F(1,310) = 29.228$ . In addition to this the analyses were done after the program found a significant difference in the performance of children in the achievement of a literacy in the opening sound of an experimental group at  $\eta^2 = 0.733$ ;  $p < .001$  \*\*  $F(1,310) = 852.705$ . As one can see from the size of the effect, the difference between the two groups in the high-level measure will be improved in sound scores developed among the children in the experimental group  $M = 14.32$   $SD = 3.141$  = in front of a control group  $M = 2.85$   $SD = 3.764$ .

Another component of emergent literacy is closing sound. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2 = 0.716$   $\eta^2$ . These operations found a significance difference between the measurements among the children in the experimental group  $\eta^2 = 0.087$ ,  $p < .001$  \*\*,  $F(1,310) = 29.610$ . In addition, operations were made after the program found a significance difference in the performance of children in the achievement of closing sound components in literacy. For experimental group  $\eta^2 = 0.716$ ,  $p < .001$   $F(1,310) = 781.603$ . One can see from the effect size, that the difference between the two groups in the high-level measure is improved in closing sound scores among children in the experimental group  $M = 13.54$   $SD = 3.606$  = in front of the  $M = 3.11$   $SD = 0.211$ .

For another component of emergent literacy – relationship signal letters with sound one can see in table 3 that the difference between the experimental group and control group was the size of the effect  $\eta^2 = 0.303$   $\eta^2$ . These operations found a significance difference between the measurements among the children in the experimental group  $\eta^2 = 0.088$ ,  $p < .001$ ,  $F(1,310) = 30.075$  in the measurement before the children in the control group  $\eta^2 = 0.176$   $p < .001$   $F(1,311) = 9.878$ . In addition to this, variance analysis has been made after the program is a significance difference in children's performance at the achievement of literacy relationship signal letters with sound contact. For the experimental group  $\eta^2 = 0.303$ ,  $f(1,310) = 134.28$ ,  $p < .001$  in front of the children in the control group  $\eta^2 = 0.419$ ,  $p < .001$ ,  $F(1,309) = 65.853$ . As one can see from the size of the effect, the difference between the two groups at the high level of measure will be improved in the scores of signal letter contact with sound the children in the experimental group  $M = 15.68$   $SD = 8.440$  in front of the control group  $M = 6.83$   $SD = 4.460$ .

Another component of emergent literacy is vocabulary opposites. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2=0.387$  Eta. These operations found a significance difference between the measurements among the children in the experimental group  $\text{Eta}=0.133$ ,  $p < .001$ .  $F(1,310) = 47.649$ . In addition to these analyses were made after the program found a sentence distinction in children's performance in the achievement of the literacy of the and a vocabulary opposite for the experimental group  $\text{Eta}=0.387$ ,  $p < .001$   $F(1,310) = 195.462$ . As one can see from the size of the effect, the difference between the two groups in the high-level measurement is applied to an improvement in the grades vocabulary scores among the children in the experimental group  $M = 10.97$   $SD = 4.114$  = in front of a control group  $M = 3.55$   $SD = 5.192$ .

Another component of emergent literacy is vocabulary categories. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2=0.635$  Eta. These operations found a significance difference between the measurements among the children in the experimental group  $\text{Eta}= 0.671$ ,  $p < .001$ .  $F(1,310) = 32.565$ . In addition to these analysis were made after the program found a sentence distinction in children's performance in the achievement of the literacy of the vocabulary categories for the experimental group  $\text{Eta}=, 0.635$ ,  $p < .001$   $F(1,310) = 538.759$ . As one can see from the size of the effect, the difference between the two groups in the high-level measurement is applied to an improvement in the grades vocabulary scores among the children in the experimental group  $M = 15.52$   $SD = 3.890$  = in front of a control group  $M = 8.03$   $SD = 2.076$

Another component of emergent literacy is vocabulary similar. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2=0.771$  Eta. These operations found a significance difference between the measurements among the children in the experimental group  $\text{Eta}= 0.683$ ,  $p < .001$ .  $F(1,310) = 668.110$ . In addition to these analyses were made after the program found a sentence distinction in children's performance in the achievement of the literacy of the School vocabulary similar for the experimental group  $\text{Eta}=0.683$ ,  $p < .001$   $F(1,310) = 668.110$  .As one can see from the size of the effect, the difference between the two groups in the high-level measurement is applied to an improvement in the grades vocabulary scores among the children in the experimental group  $M = 22.97$   $SD = 4.290$  = in front of a control group  $M = 7.89$   $SD = 3.959$ .

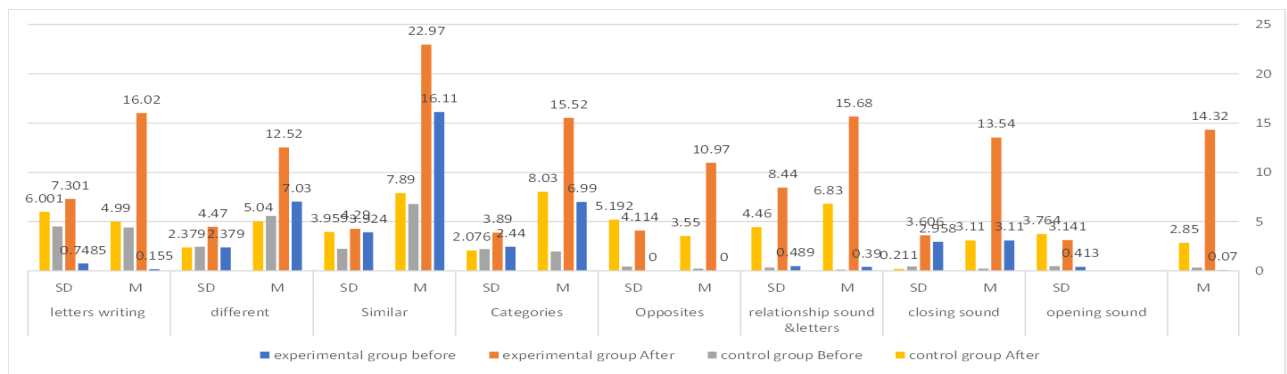
For another component of emergent literacy – vocabulary different in table 3 one can see that the difference between the Experimental group and control group was the size of the effect  $\eta^2=0.525$  Eta. These operations found a significance difference between the measurements among the children in the experimental group  $\text{Eta}= 0.091$ ,  $p < .001^{**}$ .  $F(1,310) = 161.712$ . In

addition to these analysis were made after the program found a sentence distinction in children's performance in the achievement of the literacy of the vocabulary similar for the experimental group  $\eta^2=0.525$ ,  $p < .001$  \*\*  $F(1,310) = 341.495$ . As one can see from the size of the effect, the difference between the two groups in the high-level measurement is applied to an improvement in the grades vocabulary similar scores among the children in the experimental group  $M = 12.52$   $SD = 4.290$  = in front of a control group  $M = 5.04$   $SD = 2.379$ .

Another component of emergent literacy is writing letters. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2=0.407$   $\eta^2$ . These operations found a significance difference between the measurements among the children in the experimental group  $\eta^2= 0.301$ ,  $p < .001$  \*.  $F(1,310) = 133.499$ . In addition to these analyses were made after the program found a sentence distinction in children's performance in the achievement of the literacy of the vocabulary similar for the experimental group  $\eta^2=0.407$ ,  $p < .001$   $F(1,310) = 212.598$ . As one can see from the size of the effect, the difference between the two groups in the high-level measurement is applied to an improvement in the grades writing letters scores among the children in the experimental group  $M = 16.02$   $SD = 7.301$  = in front of a control group  $M = 4.99$   $SD = 6.00$ .

The achievements of the children of the experimental group will be higher than the achievements of the children of the control group in components of literacy. In table 3 one can see that the difference between the experimental group and control group was the size of the effect  $\eta^2=0.733$   $\eta^2$ .

The following diagram shows the changes that have occurred between measurements before and after the two groups - experimental group and control groups in literacy achievements. In these charts one can see that there is an improvement in the scores of literacy achievements.



Achievement emergent literacy before the intervention program and after according to the group's type

Fig.1 Achievements on opening sound in emergent literacy before the intervention program and after according to the group's type

### Learning strategies mediation as predictors of achievement in the emergent literacy

In the first hypothesis was supposed that using the mediation – through the project (intervention program) "Let's get to know our beautiful language" compared to lack of the project will show advantage in using the program - as the degree of use of mediated learning strategies by students' mediators increases, the success of the literacy component test achievement for children increases.

The second hypothesis was that children who received mediation with the intervention program will see higher achievements in phonological awareness, opening and closing sound, in the relationship a sound with signal letters, in the vocabulary opposites, similar, different, categories, and writing letters. That can be seen in results before and after the use of the intervention program.

The third hypothesis was that children who received mediation through the intervention program of mediated learning strategies according to the principles of Vygotsky; Feuerstein; Klein will see higher achievements in the field of literacy components after the program from their achievements before the program.

Uniting part of second and third hypotheses – children who have received mediation through the intervention program to the principles of Vygotsky, Feuerstein, Klein will see higher achievements in the component's literacy first one opening sound after the program from their achievements before the program, that means achievement in literacy of the children from the experimental research group will be higher than the achievements of the control group.



The examination of this hypothesis was conducted by ANOVA for an opening sound test scores before the intervention program. The independent variables were through the mediation, and the dependent variable was an opening sound test score.

Table 4.

Averages, standard deviation and F - grades on opening sound scores and through mediation (program /not program) by Vygotsky; Feuerstein; Klein.  
Achievements after the intervention program

		: Opening sound: Achievements before the intervention program: Achievements after the intervention program										Opening sound: Achievements before the intervention program: Achievements after the intervention program																							
Vygotsky		before				Vygotsky				after				Feuerstein		before				after				Klein		before				after					
mediation indices		R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	mediation	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	mediation	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	N			
Type of In	M	0.07	-0.188	0.058	F(3.308)=	14.32	0.6	0.368	F(3.308)=	Intent and	-0.2	0.105	F(9.300)	0.66	0.47	F(9.300)	Focusing	-0.19	0.061	F(4.307)=	0.56	0.399	F(4.307)=	155											
	SD	0.413			6.297*	SD	3.141			59.711*			3.936**				29.729**						4.961**							51.019**					
Mental ins	M	0.07	-0.089	0.115	F(15.294)=	14.32	0.64	0.428	F(15.294)=	Extension	-0.13	0.042	F(7.302)	0.496	0.292	F(7.302)	Extension	-0.09	0.067	F(4.307)=	0.36	0.177	F(4.307)=	155											
	SD	0.413			2.554*	SD	3.141			14.772**			1.895				17.914**						5.486**							16.543**					
Interaction	M	0.07	-0.17	0.09	F(5.306)=	14.32	0.61	0.391	F(5.306)=	Meaning	-0.2	0.059	F(7.302)	0.667	0.464	F(7.302)	Meaning	-0.1	0.077	F(7.303)	0.41	0.317	F(7.303)	155											
	SD	0.413			6.087**	SD	3.141			39.227**			2.716**				37.560**						3.601**							20.069*					
Scalding s	M	0.07	-0.169	0.109	F(14.297)=	14.32	0.61	0.419	F(14.297)=	competenc	-0.19	0.093	F(6.305)=	0.623	0.421	F(6.305)=	Competen	-0.15	0.076	F(6.305)	0.5	0.328	F(6.305)=	155											
	SD	0.413			2.601**	SD	3.141			15.317**			5.241**				36.887**						1.800**							24.6**					
Mutuality	M	0.07	0.172	0.108	F(13.298)=	14.32	0.06	0.334	F(13.298)=	Regulating	-0.22	0.107	F(7.304)	0.672	0.552	F(7.304)	Regulating	-0.12	0.032	F(2.309)	0.38	0.152	F(2.309)	155											
	SD	0.413			2.764**	SD	3.141			11.498**			5.204**				53.566**						5.117							27.715*					
		P<0.01**																																	

Observing table 4, there is a difference in the phonological awareness level that the word opening sound for the group who received intervention program after intervention program the average of the opening sound level increased from 0.07 to 14.32 among the group who received an intervention program ("Let's get to know our beautiful language"). There is a significant difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain "Let's get to know our beautiful language". The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices of Mental instruments R=0.64 F(15.294)= 14.772\*. the second indices explaining the difference between the group before and after that is the instruments Interactions R= 0.61 F(5.306)= 39.227\*. The third indices explaining the difference between the group before and after the is Scaffolding and support R=0.609 F 14.297 = 15.317\*. The fourth indices explaining the difference between the group before and after is Type of Interaction R=0.601 F(3.308)=59.711\*.

There is a significant difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices regulation of behavior  $R=0.672^{**}$   $F(7.304) = 53.566$   $P < 0.01^{**}$ . The second indices explaining the difference between the group before and after that is the meaning  $= 0.667$   $F(7.302) = 37.560^{**}$ . The third indices explaining the difference between the group before and after is intention and reciprocal  $R= 0.66$   $F(9.300) = 29.729$   $P < 0.01^{**}$ . The fourth indices explaining the difference between the group before and after is Competence  $R= 0.623$   $P < 0.01$   $F(6.305) = 36.887^{**}$ . The fifth indices explaining the difference between the group before and after it is Extension  $R= 0.496$   $F(7.302) = 17.914$  ( $P < 0.01^{**}$ ).

Also observing table 4 according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices Focusing  $R= 0.56$   $F(4.307) = 51.019^{**}$ . The second indices explaining the difference between the group before and after that is the Competence  $R= 0.501$   $F(6.305) = 25.6^{**}$ . The third indices explaining the difference between the group before and after intervention program is Meaning  $R= 0.41$   $F(7.303) = 20.069^*$ . The fourth indices explaining the difference between the group before and after is Regulating behavior  $R= 0.38$   $F(2.309) = 27.715^*$

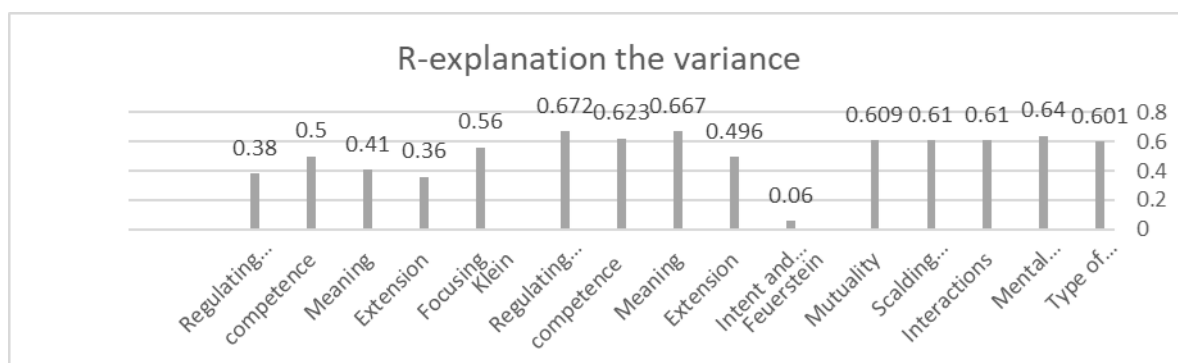


Fig.2 Explanation the variance of the word opening sound for the group who received intervention program according the principles of Vygotsky; Feuerstein; Klein.

In figure 2 we see that the highest explanation of the use of the principle of regulating behavior and according to Feuerstein and principles meaning also according and the mental

instruments principle according Vygotsky and the competence according Feuerstein the and principle of Vygotsky and the scaffolding principle of Vygotsky.

Next are results regarding hypothesis 2 and 3 for closing sound. The examination of this hypothesis was conducted by ANOVA for a closing sound test scores before the intervention program. The independent variables was through the mediation, and the dependent variable was a closing sound test score.

Table 5.

Averages, standard deviation and F - grades on closing sound scores and through mediation (program /not program) by Vygotsky, Feuerstein; Klein Achievements before the intervention program/ Achievements after the intervention program

		before Vygotsky						after						Feuerstein before						after						Klein before						after					
mediation indices		R	$\eta^2$ , Eta2	F	M	SD	R	$\eta^2$ , Eta2	F	M	SD	mediation R	$\eta^2$ , Eta2	F	M	SD	R	$\eta^2$ , Eta2	F	M	SD	R	$\eta^2$ , Eta2	F	M	SD	R	$\eta^2$ , Eta2	F	M	SD	N					
Type of	M	0.07	-0.15	0.039	F(3.308)	13.54	0.6	0.362	F(3.308)	13.54	0.6	0.18	0.05	F(9.300)	0.657	0.465	F(9.300)	Focusing	-0.153	0.031	F(4.307)	0.55	0.399	F(4.307)	155												
Interaction	SD	0.41			4.126	3.606								1.742																							
Mental ins	M	0.07	-0.168	0.067	F(5.294)	13.54	0.65	0.446	F(15.294)	13.54	0.65	-0.16	0.04	F(7.302)	0.526	0.317	F(7.302)	Extension	-0.083	0.033	F(7.303)	0.4	0.293	F(7.303)	155												
	SD	0.41			1.412	3.606								1.682																							
Interaction	M	0.07	-0.201	0.072	F(5.306)	13.54	0.6	0.384	F(5.306)	13.54	0.6	-0.21	0.07	F(7.302)	0.669	0.469	F(7.302)	Meaning	-0.059	0.019	F(4.307)	0.35	0.162	F(4.307)	155												
	SD	0.41			4.777	3.606								3.362																							
Scalding a	M	0.07	-0.159	0.082	14.3	13.54	0.6	0.414	F(14.297)	14.297	0.6	-0.14	0.06	F(6.305)	0.616	0.421	F(6.305)	Competen	-0.127	0.034	F(6.305)	0.49	0.331	F(6.305)	155												
	SD	0.41			1.906	3.606								3.237																							
Mutuality	M	0.07	0.031	0.075	F(13.29)	13.54	0.06	0.342	F(13.298)	13.298	0.06	-0.21	0.08	F(7.304)	0.667	0.531	F(7.304)	Regulating	-0.073	0.006	F(2.309)	0.37	0.138	F(2.309)	155												
	SD	0.41			1.845	3.606								3.922																							
		$P<0.01^{**}$	$P<0.05^*$	$p<0.001^{***}$																																	

Observing table 5, there is a difference in the phonological awareness level that the word closing sound for the group who received intervention program after intervention program the average of the closing sound level increased from 0.07 to 13.54 among the group who received an intervention program ("Let's get to know our beautiful language"). There is a significant difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices of Mental instruments R=0.64 F (5.306 = 15.853\*\*). the second indices explaining the difference between the group before and after that is the Scaffolding and support R= 0.604 F (.14.297) =14.994. the third indices explaining the difference between the

group before and after the is Interactions  $R = 0.599$   $F(5,306) = 38.164^* P < 0.01.^{**}$  ( $R = 0.609$   $F(14.297) = 15.317^{**}$ . The fourth indices explaining the difference between the group before and after the is Type of Interaction  $R = 0.595$   $F(3.308) = 23.426^{**}$

Observing table 5, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices the first indices was the meaning  $R = 0.667$   $F(7.302) = 38.351^{**} P < 0.01.^{**}$  The second indices explaining the difference between the group before and after that is the regulation of behavior  $R = 0.667$   $F(7.304) = 49.239^{**} = * P < 0.01$ . The third indices explaining the difference between the group before and after is Intention and reciprocal  $R = 0.657$   $F(9.300) = 29.222^{**} P < 0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R = 0.616$   $P < 0.01$   $F(6.305) = 36.915^{**}$ . The fifth indices explaining the difference between the group before and after it is Extension  $R = 0.526$   $F(7.302) = 20.153^{**} (P < 0.01)^{**}$ .

Observing table 5, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. he indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices Focusing  $R = 0.51$   $F(4.307) = 50.899^{**}$ . The second indices explaining the difference between the group before and after that is the Competence  $R = 0.493$   $F(6.305) = 25.796^{**}$ . The third indices explaining the difference between the group before and after is Meaning  $R = 0.402$   $F(7.303) = 17.910^{**}$ . The fourth indices explaining the difference between the group before and after is Regulating behavior  $R = 0.37$   $F(2.309) = 25.759^{**}$ .

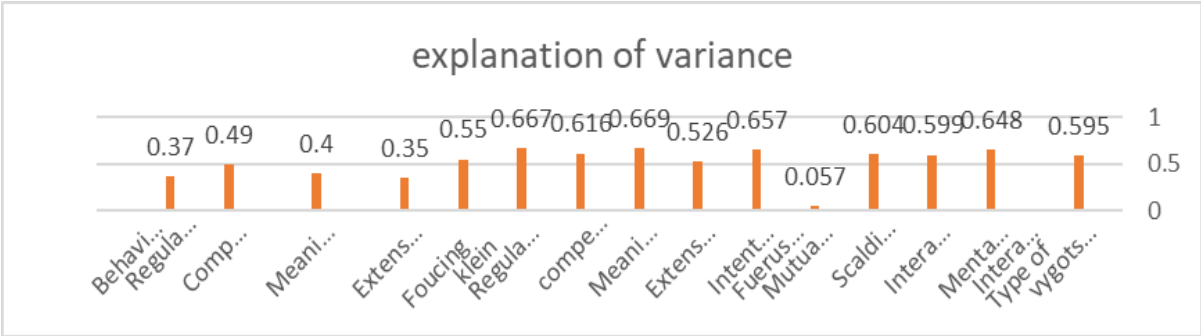


Fig. 3 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for closing sound

From figure 3 we see that the highest explanation of the use of the principle of meaning and regulating behavior according to Feuerstein and principles intent and reciprocity also according Feuerstein and the mental instruments principle according Vygotsky and the competence according Feuerstein the and principle of Vygotsky and the scaffolding principle of Vygotsky the interaction and focusing according Klein.

According to hypothesis 2 for relationship sound with letters and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis was conducted by ANOVA for a relationship sound with letters single test scores before the intervention program. The independent variables were through the mediation, and the dependent variable was a relationship sound with letters single test score.

Table 6.

Averages, standard deviation, and F - grades of relationship sound with letters single scores and through mediation (program /not program) by Vygotsky; Feuerstein; Klein

relationship sound with letters single Achievements before the intervention program: after the intervention program																	
	before Vygotsky					after				Feuerstein							
mediation indices	R	$\eta^2$	Eta	F		R	$\eta^2$	Eta	F		R	$\eta^2$	Eta	F	N		
Type of In	0.39	0.11	0.04	F(3.308)	M	15.68	0.43	0.186	F(3.308)	Intent and	0.15	0.134	F(9.300)	0.477	0.249	F(9.300)	155
	SD	0.489		4.017	SD	8.44			4.017**				5.203			11.062**	
Mental ins	0.39	0.12	0.11	F(15.294)	M	15.68	0.46	0.254	F(15.294)	Extension	0.23	0.086	F(7.302)	0.238	0.085	F(7.302)	155
	SD	0.489		2.457	SD	8.44			4.017**				4.088			4.007**	
Interactor	0.39	0.12	0.03	F(5.306)	M	15.68	0.45	0.214	F(5.306)	Meaning	0.19	0.065	F(7.302)	0.433	0.209	F(7.302)	155
	SD	0.489		1.63	SD	8.44			16.560**				No signifin				
Scalding a	0.39	0.14	0.07	F(14.297)	M	15.68	0.44	0.225	F(14.297)	competenc	0.14	0.044	F(6.305)=	0.418	0.198	F(6.305)=	155
	SD	0.489		1.635	SD	8.44			6.153**				2.317			12.501**	
Mutuality	0.39	-0.11	0.04	F(13.298)	M	15.68	0.1	0.161	F(13.298)	Regulating	0.19	0.079	F(7.304)	0.439	0.286	F(7.304)	155
	SD	0.489		0.916	SD	8.44			4.017**				3.717			17.375*	155
									$p < 0.001$								
									$P < 0.01$								

Observing table 6, there is a difference in the phonological awareness level that the relationship sound with letters single for the group who received intervention program after intervention program the average of the closing sound level increased from 0.39 to 15.68 among the group who received project intervention program. There is a significance difference between before and after. The explanation of this variance, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention according to the principles of Vygotsky was the indices of Mental

instruments  $R=0.46$   $F(3.308)=4.017$   $** P<0.01$ . The second indices explaining the difference between the group before and after that is Interactions  $R=0.45$   $F(5.306)=16.560$   $** P<0.01$ . The third indices explaining the difference between the group before and after the is scaffolding and support  $R=0.436$   $F(14.297)=6.153$   $** P<0.01$  The fourth indices explaining the difference between The group before and after the is Type of Interaction  $R=0.427$   $F(3.308)=4.017$   $P<0.01$   $**$

Observing table 6, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices the first indices were the is intention and reciprocal  $R=0.477$   $F(9.300)=11.062$   $**$ ,  $P<0.01$ . The second indices explaining the difference between the group before and after that is the regulation of behavior  $R=0.439$   $F(7.304)=17.375$   $* P<0.01$ . The third indices explaining the difference between the group before and after is Meaning  $R=0.433$   $F(7.302)=11.418$   $**$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R=0.418$   $F(6.305)=12.501$   $* P<0.01$ . The fifth indices explaining the difference between the group before and after it is Extension  $R=0.238$   $F(7.302)=4.007$   $*** P<0.001$ .)

The examination of this hypothesis about Klein was conducted by ANOVA a for a relationship sound with letters single test scores before the intervention program. The independent variables were through the mediation, and the dependent variable was a relationship sound with letters single test scores. A significance difference between before and after found, but the level of explanation is less than 0.5.

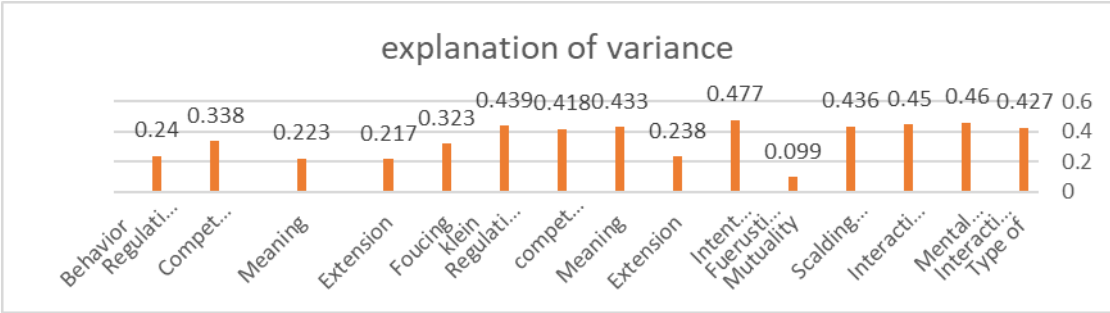


Fig.4 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for the relationship sound with letters single

From figure 4 we see that the highest explanation of the use of the principle of intent and reciprocity according to Feuerstein and the mental instruments principle and interaction and scaffolding and support according Vygotsky and the regulating behavior meaning competence according Feuerstein.

According to hypothesis 2 for opposite vocabulary and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis was conducted by ANOVA for a test opposite vocabulary scores before the intervention program. The independent variables were through the mediation, and the dependent variable was a vocabulary opposite test scores.

Table 7.

Averages, standard deviation and F - grades of scores opposite vocabulary and through mediation (program /not program) by Vygotsky; Feuerstein; Klein Achievements before the intervention program achievements after intervention

mediation indices	before Vygotsky				after				Feuerstein before				after				Klein before				after				F	N=155	N
	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	mediation R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F			
Type of In	0	-0.2	0.059	F(3.308)=	M	11	0.449	0.204	F(3.308)=	Intent and	-0.24	0.08	F(9.300)	0.5	0.263	F(9.300)	Focusing	-0.21	0.049	F(4.307)	0.442	0.218	F(4.307)	155			
SD	0		6.444	SD	4.11		47.495*		No sig	3.408		11.950**		3.947		21.354*											
Mental ins	0	-0.22	0.093	F(15.294)=	M	11	0.516	0.298	F(15.294)=	Extension	-0.22	0.07	F(7.302)	0.4	0.218	F(7.302)	Extension	-0.14	0.054	F(7.303)	0.362	0.223	F(7.303)	155			
SD	0		2.031	SD	4.11		12.110**		Sig no	3.125		12.131**		2.477		12.427*											
Interaction	0	-0.26	0.102	F(5.306)=	M	11	0.476	0.234	F(5.306)=	Meaning	-0.28	0.11	F(7.302)	0.5	0.281	F(7.302)	Meaning	-0.11	0.03	F(4.307)	0.328	0.125	F(4.307)	155			
SD	0		6.976	SD	4.11		35.212*			5.124		16.970**		2.36		2.360*											
Scalding a	0	-0.21	0.108	F(14.297)=	M	11	0.461	0.266	F(14.297)=	competenc	-0.19	0.1	F(6.305)	0.5	0.227	F(6.305)	Competen	-0.18	0.05	F(6.305)	0.415	0.21	F(6.305)	155			
SD	0		2.58	SD	4.11		12.839**			5.314		14.943**		2.701		13.477*											
Mutuality	0	0.026	0.103	F(13.298)=	M	11	0.09	0.23	F(13.298)=	Regulating	0.65	0.5	F(7.304)	0.7	0.487	F(7.304)	Regulating	-0.12	0.016	F(2.309)	0.331	0.11	F(2.309)	155			
SD	0		2.625	SD	4.11		6.866**			5.673		18.251**		2.54		19.160**											
P<0.01**																											

Observing table 7 there is a difference in the opposite vocabulary for the group who received Project intervention program after intervention program the average of the vocabulary opposite increased from 0. to 10.97 among the group who received an intervention program there is a significance difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research

strategies according to the principles of Vygotsky was the indices of Mental instruments  $R=0.516$   $F(15.294)=12.110$  \*\*  $P<0.01$  .the second indices explaining the difference between the group before and after that is the is Interactions  $R=0.476$   $F(5.306)= 35.212$ \*\*  $P<0.01$ . The third indices explaining the difference between the group before and after the is scaffolding and support  $R=0.461$   $F (14.297=12.839$ \*\*  $P<0.01$  The fourth indices explaining the difference between The group before and after the is Type of Interaction  $R=0.449$   $F(3.308)= 47.495$   $P<0.01$

Observing table 7 according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices the first indices Regulation of behavior  $R= 0.65$   $F(7.3040=18.251$ \*\*  $P<0.01$  The second indices explaining the difference between the group before and after that is the Meaning  $P<0.01$ .  $R= 0.51$   $F (7.302=.16.970$ \*\* $P<0.01$ . The third indices explaining the difference between the group before and after is Intention and reciprocal  $R= 0.49$   $F (9.300).=**11.950$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R = 0.46$   $F (6.305) = 14.943$ \*\* . The fifth indices explaining the difference between the group before and after it is Extension  $R= 0.42$   $F (7.302) = 12.131$ \*\*  $P < 0.01$ .

Observing table 7, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices Focusing  $R= 0.44$  $F(4.307)= 21.354$ \*\*  $P<0.01$ .The second indices explaining the difference between the group before and after that is the Competence  $R= 0. 415$  $F(6.305)= 13.477$ \*\*  $P<0.01$ . The third indices explaining the difference between the group before and after is Extension  $R=0.362$   $F (7.303 =12.427$ \*  $P<0.01$ . Meaning  $R= 0.402$   $F (7.303) =17.910$ \*\* . The fourth indices explaining the difference between the group before and after is Regulating behavior  $R= 0.37$   $F (2.309) 25.759$ \*\*



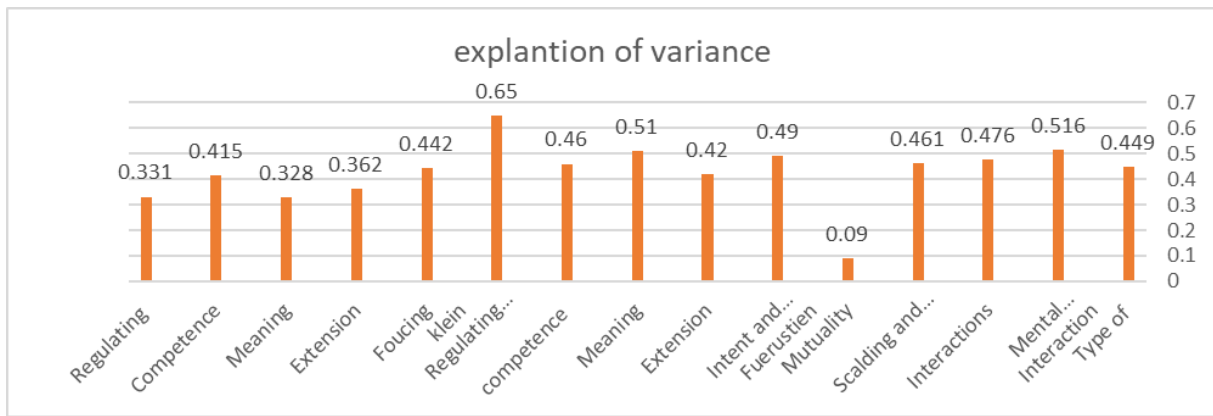


Fig.5 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for vocabulary

From figure 5 we see that the highest explanation of the use of the principle of regulating behavior and according to Feuerstein and principles meaning also according and the mental instruments principle and interaction and scaffolding and support and type of interaction according Vygotsky and intent according Feuerstein and the competence according Feuerstein.

According to hypothesis 2 for vocabulary categories and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis was conducted by ANOVA for a test vocabulary categories score before the intervention program. The independent variables were through the mediation, and the dependent variable was a vocabulary categories test score.

Table 8.

Averages, standard deviation, and F - grades of scores vocabulary categories and through mediation (program /not program) by Vygotsky; Feuerstein; Klein

Achievements before the intervention program/ Achievements after the intervention program.

		vocabulary categories Achievements before the intervention program: Achievements after the intervention program																								
		Vygot before				after				Feuer before				after				Klein before				after				
		R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	mediation R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	mediation R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	N
Type of In	M	4.97	0.544	0.316	F(3.368)	M	11.2	0.597	0.364	F(3.368)	Intent and	0.65	0.453	F(9.300)	0.64	0.471	F(9.300)	Focusing	0.52	0.35	F(4.307)	0.561	0.37	F(4.307)	155	
	SD	3.72			8.761*	SD	5.36			47.495*			27.828			29.897**				40.993			44.919*			
Mental ins	M	4.97	0.612	0.413	F(15.294)	M	11.2	0.595	0.38	F(15.294)	Extension	0.5	0.283	F(7.302)	0.51	0.292	F(7.302)	Extension	0.33	0.15	F(4.307)	0.372	0.2	F(4.307)	155	
	SD	3.72			13.869	SD	5.36			12.110*			17.107			17.897*				13.589			18.650*			
Interaction	M	4.97	0.58	0.352	F(5.306)	M	11.2	0.595	0.365	F(5.306)	Meaning	0.63	0.426	F(7.302)	0.64	0.421	F(7.302)	Meaning	0.41	0.31	F(7.303)	0.432	0.22	F(7.303)	155	
	SD	3.72			33.314	SD	5.36			35.212*			32.249			31.642**							16.119*			
Scalding a	M	4.97	0.591	0.395	F(14.297)	M	11.2	0.589	0.377	F(14.297)	competenc	0.62	0.424	F(6.305)	0.6	0.419	F(6.305)	the compe	0.48		21.415			18.912*	155	
	SD	3.72			13.867	SD	5.36			*12.839			37.346			36.595*	Regulating	0.35	0.13	F(2.309)	=0.404	0.17	F(2.309)	155		
Mutuality	M	4.97	0.096	0.338	F(13.298)	M	11.2	0.027	0.295	F(13.298)	Regulating	0.65	0.495	F(7.304)	0.69	0.545	F(7.304)				23.724			30.828*		
	SD	3.72			11.713	SD	5.36			9.602*			42.613			41.210**	$P < 0.01$	**								

Observing table 8, there is a difference in the vocabulary categories for the group who received Project intervention program after intervention program the average of the vocabulary categories increased from 4.97. to 11.2 among the group who received an intervention program. There is a significance difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices is Type of Interaction  $R=0.597$   $F(3.368) = 47.495^*$   $P<0.01$ . The second indices explaining the difference between the group before and after that is Interactions  $R=0.595$   $F(5.306) = 35.212^*$   $P<0.01$ . The third indices explaining the difference between the group before and after is Mental instruments  $R=0.595$   $F(15.294) = 12.110^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after the Scaffolding and support  $R=0.589$   $F(14.297) = 12.839^{**}$   $P<0.01$ .

Observing table 8, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation. Principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices is Regulating behavior  $R=0.692$   $F(7.304) = 41.210^{**}$   $P<0.01$ . The second indices explaining the difference between the group before and after that is the meaning  $R=0.640$   $F(7.302) = 31.642^{**}$   $P<0.01$ . The third indices explaining the difference between the group before and after is Intent and reciprocity  $R=0.639$   $F(9.300) = 29.897^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R=0.598$   $F(6.305) = 36.595^*$   $P<0.01$ . The fifth indices explaining the difference between the group before and after is Extension  $R=0.51$   $F(7.302) = 17.897^*$   $P<0.01$ .

Observing table 8 according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices focusing  $R=0.561$   $F(4.307) = 44.919^*$   $P<0.01$ . The second indices explaining the difference between the group before and after that is the Competence  $R=0.481$   $F(6.305) = 18.912^{**}$   $P<0.01$ . The third

indices explaining the difference between the group before and after is Meaning  $R=0.432 = F(7.303 = 16.119 * P < 0.01)$ .

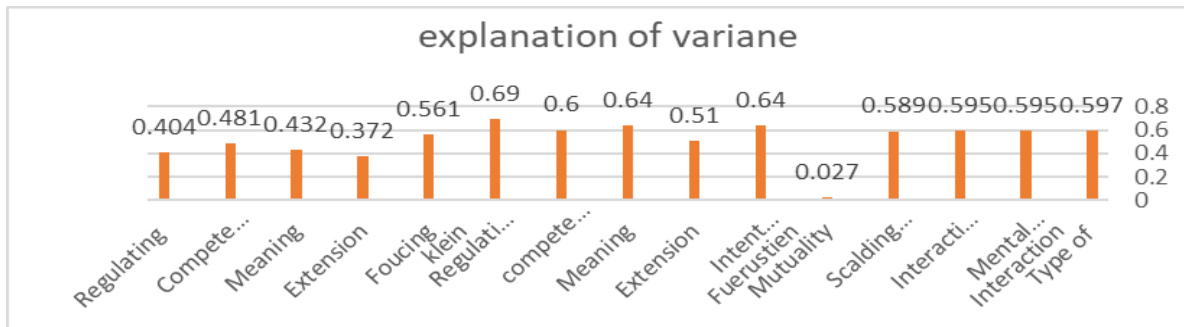


Fig.6 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for vocabulary category

From figure 6 we see that the highest explanation of the use of the principle of regulating behavior and intent according to Feuerstein and principles meaning and competence also according and the mental instruments principle interaction and scaffolding type according Vygotsky and the focusing according Klein.

According to hypothesis 2 for similar vocabulary and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis was conducted by ANOVA for a test vocabulary categories score before the intervention program. The independent variables were through the mediation, and the dependent variable was a vocabulary similar test score.

Table 9.

Averages, standard deviation and F - grades of scores similar vocabulary and through mediation (program /not program) by Vygotsky; Feuerstein; Klein  
 Similar vocabulary achievements before the intervention program/ achievements after the intervention program

		vocabulary different Achievements before the intervention program: Achievements after the intervention program																																				
		Vyg before					after					Feuerstei before					after					Klein					before					after						
mediation indices		R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	R	$\eta^2$	Eta2	F	N								
Type of Interaction	M	16.11	0.67	0.462	F(3.308)	M	23	0.593	0.366	F(3.308)	Intent anc	0.676	0.52	F(9.300)	0.743	0.618	F(9.300)	Focusing	0.591	0.404	F(4.307)	0.664	0.51	F(4.307)	155													
	SD	3.924			7.996	SD	4.29			59.286**				36.401			54.324**				51.95				78.769													
Mental instruments	M	16.11	0.68	0.496	F(15.294)	M	23	0.638	0.432	F(15.294)	Extension	0.568	0.354	F(7.302)	0.604	0.413	F(7.302)	Extension	0.447	0.312	F(7.303)	0.503	0.38	F(7.303)	155													
	SD	3.924			19.41	SD	4.29			14.989**				23.832			30.526*								19.63													
Interactions	M	16.11	0.69	0.491	F(5.306)	M	23	0.628	0.402	F(5.306)	Meaning	0.684	0.481	F(7.302)	0.75	0.578	F(7.302)	Meaning	0.385	0.208	F(4.307)	0.45	0.27	F(4.307)	155													
	SD	3.924			41.12	SD	4.29			59.035**				40.286			59.452**				20.17				28.599													
Scaffolding and support	M	16.11	0.63	0.416	F(14.297)	M	23	0.69	0.519	F(14.297)	competen	0.644	0.474	F(6.305)	0.694	0.544	F(7.304)	Competen	0.508	0.308	F(6.305)	0.581	0.38	F(6.305)	155													
	SD	3.924			15.13	SD	4.29			22.856**				45.892			81.739**																					
Mutuality	M	16.11	0.05	0.337	F(13.298)	M	23	0.044	0.431	F(13.298)	Regulatin	0.692	0.545	F(7.304)	0.756	0.653	60.645**	Regulating	0.413	0.174	F(2.309)	0.481	0.23	F(2.309)	155													
	SD	3.924			11.63	SD	4.29			17.389**				51.959							32.47				47.316													
P<0.01**																																						

Observing table 9, there is a difference in the vocabulary categories similar vocabulary for the group who received project intervention program after intervention program the average of the vocabulary categories increased from 16.11 to 22.97 among the group who received an intervention program. There is a significance difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices is scaffolding and support  $R=0.69$   $F(14.297) = 22.856^{**}$ .  $P<0.01$ . The second indices explaining the difference between the group before and after that is of Mental instruments  $R=0.638$   $F(15.294) = 14.989^{**}$   $P<0.01$ . The third indices explaining the difference between the group before and after the intervention. Interactions  $R=0.628$   $F(5.306) = 59.035^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Type of Interaction  $R=0.593$   $F(3.308) = 47.495$   $P<0.01$ .

Analyzing table 9, according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program Analyzing table 9, according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program Analyzing table 9, according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has

shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program present. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices is Regulating behavior  $R=0.756$   $F(7.304) = 81.739^{**}$   $P<0.01$ . The second indices explaining the difference between the group before and after that is the Meaning  $R=0.750$   $F(7.302) = 59.452^{**}$   $P<0.01$ . The third indices explaining the difference between the group before and after is Intent and reciprocity  $R=0.743$   $F(9.300) = 54.325^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R=0.694$   $F(6.305)=60.645^{**}= P<0.01$ . The fifth indices explaining the difference between the group before and after is Extension  $R=0.604$   $F(7.302) =30.526^* P<0.01$ .

Observing table 9, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices Focusing  $R= 0.664$   $F(4.307) = 78.769^* P<0.01$ . The second indices explaining the difference between the group before and after that is the Competence  $R= 0.581$   $F(6.305) = 30.490^* P<0.01$ . The third indices explaining the difference between the group before and after is Meaning  $R=0.503$   $F(7.303)19.630 = * P<0.01$ . The fourth indices explaining the difference between the group before and after is Regulating behavior  $R=0.481$   $F(2.309) =47.316^*$ . The fifth indices explaining the difference between the group before and after is Extension  $R=0.45$   $F(4.307) =28.599^*$ .

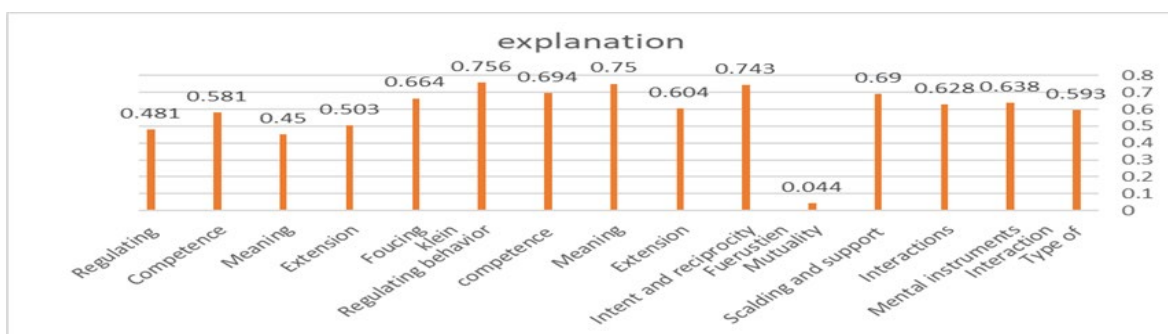


Fig. 7 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for different vocabulary achievements

From figure 7 we see that the highest explanation of the use of the principle of regulating behavior and meaning and intent and competence according Feuerstein and principles scaffolding mental and interaction and focusing according Klein.

According to hypothesis 2 for different vocabulary and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis was conducted by ANOVA for a test different vocabulary score before the intervention program. The independent variables were through the mediation, and the dependent variable was a vocabulary different test score.

Table 10.

Averages, standard deviation, and F - grades of scores different vocabulary and through mediation (program /not program) by Vygotsky; Feuerstein; Klein  
 Different vocabulary Achievements before the intervention program: Achievements after the intervention program

vocabulary different Achievements before the intervention program				Achievements after the intervention program																			
Vygotsky before				after				Feuerstein before				after				Klein before				after			
mediation indices	R	$\eta^2$ , Eta2	F		R	$\eta^2$ , Eta2	F	mediation R	$\eta^2$ , Eta2	F	R	$\eta^2$ , Eta2	F	mediation R	$\eta^2$ , Eta2	F	R	$\eta^2$ , Eta2	F	N			
Type of InM	6.31	0.25	0.06 F(3.308)=	M	8.76	0.538	0.3 F(3.308)=	Intent and	0.294	0.111 F(9.300)	0.595	0.414 F(9.300)	Focusing	0.209	0.073 F(4.307)	0.511	0.31 F(4.307)				155		
SD	2.389		6.583	SD	5.173		42.932**			4.184		23.72**			6.009		34.627*						
Mental insM	6.31	0.28	0.11 F(15.294)=	M	8.76	0.576	0.38 F(15.294)=	Extension	0.153	0.055 F(7.302)	0.535	0.331 F(7.302)	Extension	0.161	0.049 F(7.303)	0.325	0.22 F(7.303)				155		
SD	2.389	No sig	2.42	SD	5.173		12.079*		No sig	2.524		21.516**											
Interaction M	6.31	0.27	0.08 F(5.306)=	M	8.76	0.554	0.32 F(5.306)=	Meaning	0.269	0.089 F(7.302)	0.606	0.386 F(7.302)	Meaning	0.154	0.031 F(4.307)	0.283	0.13 F(4.307)				155		
SD	2.389		5.166	SD	5.173		28.194**			4.229		27.252**			2.426		11.041*						
Scaffolding a M	6.31	0.26	0.1 F(14.297)=	M	8.76	0.555	0.32 F(14.297)=	competen	0.249	0.078 F(6.305)	0.564	0.392 F(6.305)	Competen	0.189	0.052 F(6.305)	0.407	0.22 F(6.305)				155		
SD	2.389	No sig	2.454	SD	5.173		10.042**			4.301		32.775**			2.783		13.972*						
Mutuality M	6.31	0.09	0.14 F(13.298)=	M	8.76	0.038	0.3 F(13.298)=	Regulating	0.247	0.082 F(7.304)	0.564	0.392 F(7.304)	Regulating	0.149	0.038 F(2.309)	0.312	0.1 F(2.309)				155		
SD	2.389		3.699	SD	5.173		9.6*			3.888		30.566**			6.06		17.536*						

Observing in the table 10, there is a difference in the different vocabulary for the group who received Project intervention program after intervention program the average of the vocabulary different increased from 6.31. to 8.76 among the group who received an intervention program. There is a significance difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices is Mental instruments  $R=0.576$   $F(15,294) = 12.079^* P<0.01$ . The second indices explaining the difference between the group before and after that is Scaffolding and support  $R=0.555$   $F(14.297) = 10.042^{**} P<0.01$ . The third indices explaining the difference between the group before and after is Interactions  $R = 0.554$   $F(5,306) = 28.194^{**} P<0.01$ . The fourth indices

explaining the difference between the group before and after is Type of Interaction  $R=0.538$   $F(3.308) = 42.932^{**}$   $P<0.01$ .

Observing table 10 according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation. Principles have explained more than 0.50 of the difference the intervention program. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices is Meaning  $R=0.606$   $F(7.302) = 81.739^{**}$   $P<0.01$  The second indices explaining the difference between the group before and after that is the Intent and reciprocity  $R=0.595$   $F(9.300) 23.72^{**}$   $P<0.01$ . The third indices explaining the difference between the group before and after is Regulating behavior  $R=0.564$   $F(7.304) = 30.566^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R=0.564$   $F(6.305) = 32.775^{**}$   $P<0.01$ . The fifth indices explaining the difference between the group before and after is Extension  $R=0.535$   $F(7.302) = 21.516$   $P<0.01$ .

Observing table 10 according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Klein has shown that 5 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Klein was the indices Focusing  $R=0.511$   $F(4.307) = 34.627^{*}$   $P<0.01$ . The second indices explaining the difference between the group before and after that is the Competence  $R=0.407$   $F(6.305) = 13.972^{*}$   $P<0.01$ . The third indices explaining the difference between the group before and after is Meaning  $R=0.503$   $F(7.303) = 19.630^{*}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Regulating behavior  $R=0.481$   $F(2.309) = 47.316^{*}$ . The fifth indices explaining the difference between the group before and after is Extension  $R=0.45$   $F(4.307) = 28.599^{*}$ .

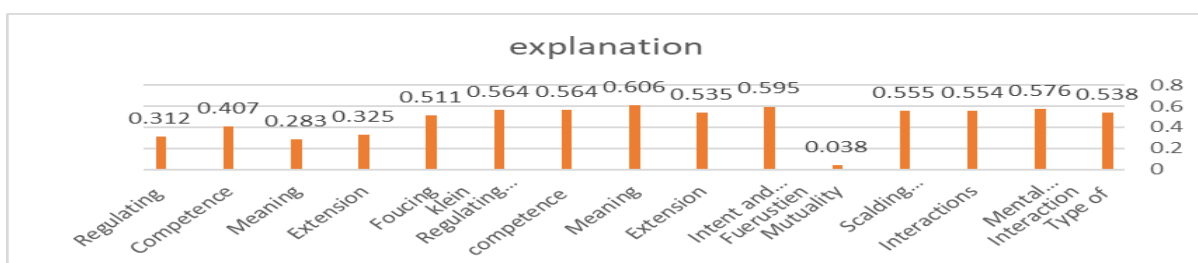


Fig.8 Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for different vocabulary

From figure 8 we see that the highest explanation of the use of the principle of meaning and intent and competence and regulation according Feuerstein and principles mental instruments and interaction and scaffolding and type according Vygotsky and the competence according Feuerstein the and principle focusing according Klein.

According to hypothesis 2 for writing letters and the mediation strategies there will be difference before and after the intervention. The examination of this hypothesis of this hypothesis was conducted by ANOVA for a test different vocabulary score before the intervention program. The independent variables were through the mediation, and the dependent variable was a writing letters test score.

Table 11.

Averages, standard deviation, and F - grades of writing letters scores through mediation (program /not program) by Vygotsky; Feuerstein; Klein  
Writing letter achievements before the intervention program/ achievements after the intervention program

		writing letters: Achievements before the intervention program:				Achievements after the intervention program												
Vygotsky before		after				Feuerstein before		after										
mediation indices		R	$\eta^2$ , Eta2	F		R	$\eta^2$ , Eta2	F		R	$\eta^2$ , Eta2	F	R	$\eta^2$ , Eta2	F	N		
Type of In	M	0.155	0.138-	0.14	F(3.308)=	M	16.02	0.48	0.23	F(3.308)=	Intent and	-0.37	0.308	F(9.300)	0.546	0.337	F(9.300)	155
	SD	0.749			6.583	SD	7.301			16.444*				14.9			17.091*	
Mental ins	M	0.155	-0.32	0.2	F(15.294)	M	16.02	0.5	0.28	F(15.294)	Extension	-0.34	0.158	F(7.302)	0.336	0.136	F(7.302)	155
	SD	0.749			4.919	SD	7.301			7.823**				8.135			6.831**	
Interactor	M	0.155	-0.36	0.15	F(5.306)	M	16.02	0.49	0.26	F(5.306)	Meaning	-0.41	0.199	F(7.302)	0.501	0.274	F(7.302)	155
	SD	0.749			11.01	SD	7.301			21.296**				10.82			16.413**	
Scalding a	M	0.155	-0.36	0.22	F(14.297)	M	16.02	0.49	0.29	F(14.297)	competenc	-0.36	0.189	F(6.305)	0.48	0.281	F(6.305)	155
	SD	0.749			6.08	SD	7.301			8.599**				11.85			19.901**	
Mutuality	M	0.155			F(13.298)	M	16.02	0.123	0.26	F(13.298)	Regulating	-0.41	0.266	F(6.305)	0.518	0.342	F(6.305)	155
	SD	0.749	0.16	0.17	4.27	SD	7.301			7.977*				15.74			22.525**	

Observing table 11, there is a difference in the writing letters for the group who received Project intervention program after intervention program the average of the writing letters increased from 0.155 to 16.02 among the group who received an intervention program. There is a significance difference between before and after. The explanation of this variance according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Vygotsky has shown that 4 indices of mediation principles have explained more than 0.50 of the difference the intervention program explain. The indices that explains the difference between the group before and after the intervention Program of this research strategies according to the principles of Vygotsky was the indices is Mental instruments  $R=0.502$   $F(15.294) = 7.823^{**}$   $P<0.01$ . The second indices explaining the difference between the group



before and after that is Interactions  $R=0.494$   $F(5.306) = 21.296^{**}$ .  $P<0.01$ . The third indices explaining the difference between the group before and after is scaffolding and support  $R=0.491$   $F(14.297) = 8.599^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Type of Interaction  $R=0.477$   $F(3.308) = 16.44^*$   $P<0.01$ .

Looking at table 11, according to the ANOVA test, the effect of the indices of intermediate learning strategies the mediation of Feuerstein has shown that 5 indices of mediation. Principles have explained more than 0.50 of the difference the intervention program explain. The indices that explain the difference between the group before and after the intervention Program of this research strategies according to the principles of Feuerstein was the indices is the intent and reciprocity  $R=0.546$   $F(9.300) = 17.091^*$ . The second indices explaining the difference between the group before and after is Regulating behavior  $R=0.518$   $F(6.305) = 22.525^{**}$   $P<0.01$ . The third indices explaining the difference between the group before and after is Meaning  $R=0.501$   $F(7.302) = 16.413^{**}$   $P<0.01$ . The fourth indices explaining the difference between the group before and after is Competence  $R=0.48$   $F(6.305) = 19.901^{**}$ .

The examination of this hypothesis about Klein was conducted by ANOVA a for a relationship writing letters single test scores before the intervention program. The independent variables were through the mediation, and the dependent variable was a writing test scores. A significance difference between before and after found, but the level of explanation is less than 0.5.

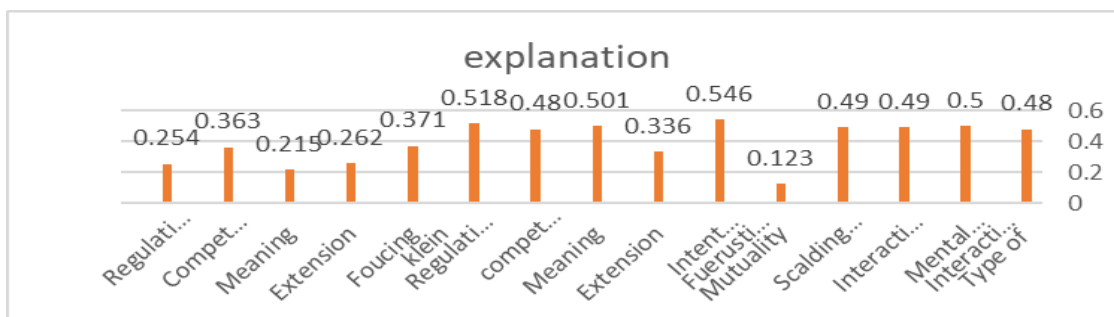


Fig.9. Explanation of variance according to ANOVA test, the effect of the indices of intermediate learning strategies the mediation for writing letters

From figure 9 we see that the highest explanation of the use of the principle of Intent, Regulating, Meaning and Competence, according to Feuerstein and principles the Mental instruments principle and Scaffolding and Interaction according to Vygotsky.

## Discussion

A central purpose of this research was to examine the effectiveness of the through mediation – by the project intervention program "Let's get to know our beautiful language" as an effective mediation tool in the field of literacy. The findings of the research are evidence of the influence of the mediation by intervention program project as a mediation tool on two main subjects: mediated learning strategies according to the principles of Vygotsky, Feuerstein and Klein and the achievements in the field of emergent literacy.

In the research hypotheses, we referred to the children's achievements in the field of emergent literacy. Hypothesis one was that mediation with the intervention program will increase achievements in the field of emergent literacy. We derived it from research findings regarding the use of intervention programs in the field of education, which revealed a beneficial impact of intervention programs for promoting literacy for children's acquisition of literacy knowledge (Aram & Besser-Biron, 2017; Buckingham, 2020; Myers et al., 2014; Tzuriel, 2020).

The second hypothesis was that children who received mediation with the intervention program will improve emergent literacy performance in phonological awareness, opening and closing sound, in the relationship between a sound with signal letters, in the vocabulary opposites, similar, different, categories, and writing letters. This hypothesis has been corroborated as shown below:

Phonological Awareness is examined before and after the project intervention program. It was found, as expected, significant difference between the two groups of children who received mediation through the intervention program (experimental group) and the group that did not receive it (control group). After the intervention program, there is a significant difference between the two mediations through that is, in the group of children who received mediation with the intervention program the phonological awareness closing sound are improved.

These research findings are compatible with the findings of other authors (Buckingham, 2020; Saiegh-Haddad et al., 2020; Suortti & Lipponen, 2016; Vaknin-Nusbaum et al., 2018) who found that an intervention program in a phonological practice improves and raises phonological awareness among children (Aram et al., 2013; Korat & Falk, 2019). These results make a significant theoretical and practical contribution to the study of mediation in education and phonological awareness instruction. The theoretical significance of the results is related to the comprehension of the intervention program's influence, particularly the use of Haraz magna songs as a mediation tool. It is directly related to their emotions as well as the level of comfort and expertise of the student mediator who uses it. The findings' practical significance lies in

highlighting the necessity of thorough training in relation to the subject areas studied and the resources used by kindergarten teachers.

The vocabulary (opposites, categories similar and different) has been examined before and after the intervention program in the two groups - group who received mediation through the intervention program (experimental group) and the group who did not receive it (control group). After the intervention program, there is a significant difference between the two mediation methods that, in the group of children who received mediation with the intervention program (experimental group), has improved the vocabulary on 4 elements. There were significant differences in the four elements of vocabulary.

The student mediator used literary texts in this story as *The Small Silver Fish*, author Paul Corr, translated to Arabic by Anton Shalcht; *The Three Butterflies*, author Leven Kimpis, translated to Arabic by Salma Almadi; *The Fish Who Did Not Want to Be a Fish*, author Paul Kaher and *The Breakfast*, author Mohammad Ali Taha. Also, the students- mediators in this case used mediation through way of integrating a puppet theater. The finding this research: average scores of children in vocabulary among children who have been in mediation with an intervention program (experimental group) were higher than the average among the children who did not experience the intervention program.

The gains made in vocabulary and the usefulness of the intervention program in this instance—the use of the puppet theater doll—might have been important. This finding may have several explanations, one of which has to do with vocabulary and linguistic understanding. In order to deepen the understanding of the text that has being learned, the student mediator discussed with the children in visible and hidden messages that arise from him, the significant place of the doll (puppet theater) in this field, as emerges from these findings, stands in the way of the literature that relates to the doll's teeth by the teacher in the mediation interaction. Researchers suggested that working with theater dolls for teaching purposes provides a tangible attempt to explain abstract ideas, process demonstration, and develop dialogue with the children (Banerjee et al., 2016; Chambré et al., 2017; Hashmi et al., 2022; Skibbe & Foster, 2019). The doll is used by the teacher to show how the doll is a non-controlling figure who encourages the kids to express themselves. Children identify with the doll, who is also perceived as a scholar, and explain their ideas and responses to her in a detailed and clear manner, as opposed to the teacher, who knows the answers and understands the explanations that are given to them even though they are not widely and clearly explained. The dialogue between the children and the puppet enables the teacher to evaluate the degree of understanding, knowledge and skills of the

children and to give an answer to the necessary extent (G. E. Bingham et al., 2018; Pyle et al., 2018).

These results and the findings regarding the frequency incidence of use of the mediated learning strategies during the mediation of the intervention program might be related. Another explanation for how the intervention program affected the vocabulary achievement of the children can be found in this relationship. As stated earlier, the intervention program in conjunction with the puppet doll is strongly expressed in the strategies of intent and reciprocity, focus, support, and scaffolding, and meaning mediation. The exemplary positive effect of the Puppet use on the achievements of the children in the field of vocabulary, as it emerges from this section, are also linked to the extensive use they have made with the doll mainly in these strategies, which constitute the basis for conceptual thinking, from which vocabulary develops (Farrow et al., 2020).

The relationship between sound and signal recognition capability has also been tested before the intervention program and after the program. Regarding the mediation through, there is a significant difference in the children's identification the letters signal and sound. In other words, the average of the grades in identifying a signal letter with its sound among the children, who were in mediation with the intervention program that included such activities (such as the visualization activity and the activity of understanding the pattern such as correspondence and association, etc.) was higher than the average of the children who did not experience mediation without a program.

These research findings join the previous findings on the effect of integrating the project intervention program in the process of mediation of relationship between sound and signal (Aram & Besser-Biron, 2017; Levin & Aram, 2013; Preece & Levy, 2020). We can see that using the intervention program to engage in activities like visual visualization and pattern recognition as an association of color-matching songs is natural and comfortable. It is crucial to remember that the student mediator needs to receive specific instructions on the potential intensity of the intervention program.

Writing letters – the children's achievements in writing letters, measured by the average of the grades of writing words among the children who have been in mediation with the intervention program (which included the following manual writing activities), were also reviewed before the intervention program and after the program regarding the mediation through: A. Acquiring orthographic knowledge; B. Training by sending letters from memory after the signal has been covered; C. Learning children to format the letters with the image of the "traffic light"; D. Format of letters correctly in terms of writing direction, connection

between the signal components; E. Using a whiteboard and sensory tasks to the letters. The average of the children who were in intervention program (experimental group) was higher than children without the program (control group). These research findings join the previous findings regarding the effect of integrating the intervention program in the process of mediation for the achievements in writing letters (Aram & Besser-Biron, 2017; Lifshitz & Har-Zvi, 2015; Zucker et al., 2021).

We observe that it is natural and comfortable to use the mediation by intervention program to be coordinated in the activities of learning orthography, training in letters from the memory of the mediation, formatting letters in the shape of a traffic light, formatting letters according to the direction of writing, and using the Whiteboard. It's critical to remember that the policy needs to be specific in relation to manual writing and training activities.

*Mediation for writing* – the results demonstrate that the students' mediators' use of learning strategies mediation in the intervention program increases the use of mediation for writing in accordance with the mediation principles of Vygotsky, Feuerstein, and Klein. These results concur with those of other authors (Aram & Besser-Biron, 2017; Bindman et al., 2014; L. B. Bingham et al., 2005; Darling-Hammond, 2017; Elimelech & Aram, 2022; Levin & Aram, 2013; Levlin & Waldmann, 2020; Neumann, 2018; Ravid et al., 2015; Share & Bar-On, 2018). They found that an intervention program promotes the mediation for writing.

*The mediation learning strategies predict the achievement of children* in relation to the mediation through. The research hypothesis was that children's achievement in the field of emergent literacy can be predicted in a positive manner by the mediation strategies, and that the degree of prediction shall be high in a group of children who receive an intervention program (experimental group) than the children of the control group. This hypothesis was tested through a model of learning strategies according to Vygotsky, Feuerstein, Klein, and according to the intervention program. When at first the independent learning strategies was through the mediation (intervention program/ no program) group type the experimental group or control group.

Four indices of the principles of the mediation of Vygotsky explained the difference in favor of the project intervention program "Let's get to know our beautiful language". In the field of literacy these are: Type of interaction; Mental tools; Social interaction; Support and scaffolding.

Five indices of principles of Feuerstein mediation explained the difference in favor of the project intervention program "Let's get to know our beautiful language" in the findings of literacy - Intent and reciprocity; Extension Meaning; Competence; Regulation of behavior.

Five indices of principles of Klein mediation explained the difference in favor of the intervention program. In the field of literacy these are: Extension focuses; Meaning; Competence; and Regulating behavior. All elements were examined before and after intervention program.

The results of this research correspond to the results of the studies regarding the use of mediation by intervention of education that show the positive impact and the intervention for the advancement of literacy on the acquisition of oral knowledge for children (Aram & Besser-Biron, 2017; Korat & Segal-Drori, 2016; Myers et al., 2014; Tzuriel, 2020).

There were five steps, and the five models were displayed: the first one that contained only the experimental group contributed 59.8% to the different explanation. The second model that also contained the literacy the phonological awareness element sound closing explained 64.1% of the variance (that is, the phonological awareness a closing sound was a unique contribution beyond the contribution of the experimental group of about 4.3%). The model which also contained mediation indices learned in the college (Principles of Vygotsky, Feuerstein, Klein) explained 66.6% of the variance (that is, the mediation principles learned in the college by the students and being transferred in activities with the students was a unique contribution to the various explanations, beyond the contribution of the experimental group that received the intervention and the phonological awareness closing sound 2.5%). The model which also included the mediation for writing strategies explained 67.3% of the variance (i.e., the mediation for writing strategic teaching was a unique contribution to the various explanation) beyond the contribution of the experimental group and the phonological awareness component a closing sound and the principles of mediation learned and transferred by the students working with the children in activities of 0.7%). The model which also contained phonological awareness of opening sound explained 67.8 of the variances (that is, the phonological awareness of opening sound was a unique contribution beyond the contribution of the experimental group and the phonological awareness component of the closing sound, and the principles of mediation learned and transferred by the students working with the children in activities, for the mediation of index writing strategies of 0.5)

The findings of the current research are in coordination of studies from the field of mediation learning strategies, in which the researchers focused on the causal of children according to theoretical studies that have found (Tzuriel, 2020).

Because there is a positive connection between mediated learning processes and cognitive variability in the studies in which the learning strategies were examined, they had to explain significantly the cognitive variability of children and their success in intelligence tests

and found that these are competence (Klein et al., 2017) and regulating behavior (Gil de Zúñiga et al., 2022; Hall et al., 2015; Tzuriel, 2020).

There are strategies that have a large contribution to predicting the conventional change capacity. These findings are consistent with the findings of the current research, but the findings of these studies indicate a positive prediction of the children's achievement through the two strategies, in the current research, the principles of Vygotsky were 4 strategies, and according to Feuerstein and Klein were 5 indices that predicted.

This study yields several key conclusions about the benefits of using mediation by project intervention program regarding the following issues:

Mediation with the use project "Let's get to know our beautiful language" of intervention program improves achievements in the field of emergent literacy found that mediation with the intervention program has resulted higher achievements than without a program in all the indices of literacy elements for phonological awareness, vocabulary, contact letter, writing letters.

Mediation in the use of the Project intervention program improves achievements in the level of writing of the children. It is found that mediation with the project intervention program has resulted in higher achievements than without a program.

Mediation with the Project intervention program predicts achievements in the field of literacy – in the analysis in which the independent variable was through the mediation, found that in the group of children who had received the intervention, 4 indices of the mediated learning strategies of Vygotsky predicts the achievements in the field of literacy (type of interaction, social interactions, psychological tools, support and scaffolding) .While Feuerstein was found that the 5 indices of Feuerstein's mediated learning strategies were predicts the achievements in the field of literacy (intention and reciprocity; regulating behavior, competence; extension pending; meaning) .In addition, according to Klein, the 5 indices of Klein's mediated learning strategies predicted achievements in the field of literacy (focusing and regulating behavior, competence; extension; meaning).

The study's findings have a significant impact on working with children in Arab society. The impact of mediation through the intervention program reflects the intensity of the intervention program as a mediation tool, which must cater to Arab children. An intervention program is planned and built based on the cognitive level of children at this age; the research findings demonstrate the importance of such programs in promoting emergent literacy among children in Arab kindergartens.

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