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Effectiveness of Communication Skills Training Program in Developing Some Visual Perception and Writing Readiness Skills for Kindergarten Children

Naglaa Fathy Sayed Ahmed Abou-Eid

Department of kindergarten, Faculty of Education, Majmaah University, Majmaah, 11952, Saudi Arabia
E-mail; n.aboueid@mu.edu.sa, https://orcid.org/0000-0002-9314-5713

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ABSTRACT The aim of the paper is to explore the effectiveness of Communication Skills Training Program in Developing Some Visual Perception and Writing Readiness Skills for Kindergarten Children. A semi-experimental, pre-post-test for the two groups (experimental and control) was employed. Participants were 30 children. They aged between 5 and 5.7 years (M=5.3 years, SD=0.984). Two groups were constructed with equal number of children for each (experimental = 15 children, of which 9 were girls, while 6 were boys, and control = 15 children, of which 10 were girls, while 5 were boys). A program was applied to the experimental group (12 sessions; 3 sessions per week; each session lasts for 20-25 minutes, total period or application = 4 weeks, that is a month). Results advocate the effectiveness of the employed raining program.

INTRODUCTION

Educating young children ,from birth to age five, has attracted the attention of educators in recent years (Ofori-Attah 2021). According to Vygotsky, children have a specific range or zone within which they can learn efficiently (McLeod 2019) Given the importance of education in the kindergarten stage (Ebrahim 2019), the primary goal of the curriculum should be the comprehensive development of the child, their abilities, skills, tendencies and trends, discovering their talents and raising them in a comprehensive and integrated education in various aspects. The education process at this stage is a practical behavioural training process that the child receives from those around, so they gain from them behaviour, morals, habits and manner of interaction, which greatly affect the formation of the child's personality (Al-Sebaei et al. 2017), and any group witah which the child interacts is a tangled web of different social capabilities and the types of behaviour associated with it and expected from its owners. In their interaction with these groups, the child learns patterns of behaviour, and values are considered as the first piece that a child learns before other behavioural acquisitions, and values are the ideas that determine what is good and acceptable and what is bad is rejected, and this is the first thing a child acquires in their healthy social development (Othman 2002).

Problem Statement

By reviewing the literature related to the research topic, the researcher found out the main role that VP plays in the learning process and upon it, when certain aspects of VP are ineffective, they have a negative impact on the child's learning process, as well as their academic performance and academic competence. Additionally, out of the researcher's observation during field visits to supervise pre-service teacher during their practicum, she found that kindergarten children had some difficulties in the perception of spatial relationships during the implementation of games and tools as well as the difficulty of distinguishing them visually when changed. She tried to give children some activities that required them to use their delicate muscles such as connecting between two points in a straight line, folding some small papers, and shooting at distant targets using the foot, and performing some games. However, they had many visual perception skills, such as visual discrimination, the perception of spatial relationships, and visual closure.

Hence, the current research tries to answer the following two questions:

1. Are there differences experimental and control groups in post-test in visual discrimination?
2. Are there differences experimental and control groups in post-test in visual memory?

3. Are there differences experimental and control groups in post-test in spatial relationships?
4. Are there differences experimental and control groups in post-test in shape and background?
5. Are there differences experimental and control groups in post-test in visual closure?
6. Are there differences experimental and control groups in post-test in writing readiness skills?

Aim of the Study

This study aimed to explore the effect of communication skills in developing some visual perception and writing readiness skills for kindergarten children.

Literature Review

Visual Perception

Visual perception or VP is known as the state of awareness and understanding of relationships and events through the senses (Ahmed et al. 2015). It is also the state of recognising situations, as it helps the appropriate reaction in different situations. VP is "the ability to interpret the coordination between visual information and motor programming" (Önder et al. 2019).

Sensory perception is one of the skills that depend on visual input and sensory stimulation closely related to movement skills, and it appears through the ability to interpret elements of the environment, visual processing, analysing meanings, and deriving the speed and direction of the elements (Makino et al. 2016).

VP plays a major role in the future ability of the learner to learn academic subjects including reading, spelling, and completion of written and numerical tasks. The manifestations of visual perception are the jobs, and the soft skills that an individual needs in acquiring various academic tasks. The manifestations of visual perception such as matching of forms (similarities), form constancy (for example, irregular form of letters), VP, visual recognition, form recollection (VM) and the directional orientation of visual stimuli, which is essential for academic learning, performance, and aptitude (Flax 2006).

Piaget's theory is based on basic pillars, which are the muscle sensations and the interconnection of these muscle sensations with each other in the brain centres, so they form mental images of these sensations that the child perceives, and thus the child's visual perception can be corrected for a specific form, for example, through his tactile perception. The mental activity that the child performs to perceive the shapes and dimensions of things requires early sensory training that creates the neural correlation required to organise the perceptual field according to the difference of perceptions (Abdel Fattah 2009).

The role of VP lies in the interpretation of visual stimuli entering the brain through the sense of sight, so that its function is to perceive the similarity and difference between stimuli in terms of colour, shape, size, position or image, which depend on the individual's previous knowledge stored in them, which facilitates the possibility of awareness easily (Al-Butana 2009).

The components of VP include the perceptual processing processes, which are those related to recording and interpreting the response and visual attention, which means organising information according to importance, visual discrimination, visual spatial and sequential memory, distinguishing and completing shapes, and visual sequences (Salim 2013). Visual perception consists of the following skills.

Visual Discrimination

VD includes the student's ability to notice the similarities and differences between shapes and letters and the extent of this difference between things. When children fail to distinguish characteristics related to size, shape, distance, deep perception, and other appropriate details, they may have problems knowing and using letters, numbers and words in reading and arithmetic, and the difficulty of distinguishing between stimuli may affect the child's writing and drawings (Smith et al. 2006).

Visual Figure Ground

The visual distinction between the shape and the background includes the ability of the pupil to focus on some shapes, and to exclude all stimuli that exist in the background surrounding these shapes and that do not belong to them. The student who suffers from problems in determining the shape and background cannot extract the shape in

the background, which is part of it, and they appear confused when there is more than one thing on the page (Lee 2003).

Visual Memory

VM is the ability to recall visual images after a period of time. Memory is an essential part of the learning process, and in order to acquire new facts, skills and ideas the results of specific educational experiences must be preserved. Memory helps to benefit from previous experiences, current experiences, and adjust for new experiences (ElAdl and Eissa 2019). Any deficiency in memory can hinder the learning process and cause difficulty during the student's life stages (Lee 2003).

Visual Closure

VC is the pupil's ability to perceive the total form when only parts of the form appear. Closure is a tendency in the human psyche to complete the missing things, and the Gestaltians use the term closure to describe the self-completion of the incomplete pattern (Groffman 2006).

Perception of Spatial Relationships

Spatial relationships are the ability of the pupil to distinguish the things around him, which appears in how to move from one place to another, and how to perceive the objects in their relationship to themselves and their relationship to other things.

Writing Rediness Skills

Visual and auditory memory skills are the child's ability to remember the locations and characteristics of objects, names, faces, stimuli in the environment, letters and words. Motor maturity refers to the child's ability to control their limbs and their muscles to make purposeful movements that tend to provide effort in the movements of performance, and the motor coordination and control of the fine muscles in the hand and fingers are all important matters in preparing children to learn to read and write (Al Sawi 2013), and muscle development. Visual-motor coordination skills are the child's ability to synergise between the eye and the hand. This gradually grows, and as they progress, is it found that they need more guidance and assistance to employ this ability and benefit from it to the fullest extent possible, which means the ability to perform synergistic activities between eye movement and hand movement in dealing with objects, as well as coordinating eye movements from right to left or from top to bottom, whether in reading or writing activity. Linguistic preparation is all the measures taken by the teacher to enrich the linguistic development in the stage before teaching reading and writing, such as tasking, and the child describes a picture or imitates some sounds of animals and birds (Kelly et al. 1998; Kostelink et al. 2010).

Training in Visual Perception

Much of the information that one gains in daily life is done visually, as this information is recorded, stored, and retrieved through the visual memory system. This visual information can be numbers, letters, words, texts, shapes, things, or subjects, faces, verbs, etc. When multiple visual stimuli are presented to individuals, but there is a period of time between them, or all of them are presented to remember, it is said that this task requires visual serial memory, and both visual memory and visual sequential memory are an important part of preparing visual information, as they contribute to many academic activities and activities of daily life. They are also important for learning processes, as eighty percent of them are acquired visually, and teachers and educators often use visual memory as an educational resource and also use audio-visual methods to facilitate the presentation of content to avoid fatigue and boredom in students (Rodán-González et al. 2009).

Hypotheses

The following hypothesis are tested in this study:

1. There will be differences between the experimental and control groups in visual discrimination in favour of the experimental group.
2. There will be differences between the experimental and control groups in visual memory in favour of the experimental group.
3. There will be differences between the experimental and control groups in in spatial relationships in favour of the experimental group.

4. There will be differences between the experimental and control groups in in shape and background in favour of the experimental group.
5. There will be differences between the experimental and control groups in in visual closure in favour of the experimental group.
6. There will be differences between the experimental and control groups in in writing readiness skills in favour of the experimental group.

MATERIAL AND METHODS

This study seeks to provide an answer to this question on what is the effect a communication skills training program has on developing some visual perception and writing readiness skills for kindergarten children. Data were collected from children during the academic year 2019-2020.

Study Group

Participants were 30 children from Al-Islah Primary Joint School in Tanta (kindergarten stage). They were aged 5-5.7 years (M = 5.3 years, SD = 0.984). Two groups were constructed with equal number of children for each (experimental = 15 children, of which 9 were girls, while 6 were boys; control = 15 children, of which 10 were girls, while 5 were boys). To verify the homogeneity of the two groups in visual perception skills and writing skills, a visual perception skills test as well as a writing skills test was applied, prepared by the researcher, and the following table shows the results of this procedure. As shown in Table 1, all 't' values were not statistically significant. This indicates the homogeneity of the two samples in the pre-test on the visual perception test and writing skills test (sub-skills and total score).

Instrument

A visual perception test (prepared by the researcher) was used in this study. It is a non-verbal test, designed to measure the general visual perceptual ability of children, and the visual perception tasks included in the test require a number of visual processes, namely, spatial relationships, discrimination, shape and background, visual closure, and visual memory. The performance on these processes provides a degree that represents the child's general visual perceptual ability. The test consists of 40 items. Each item is presented in the form of multiple-choice questions, in which the child chooses the correct answer from four choices arranged horizontally on the page. The child determines the answer by marking the correct answer. A score is given for the correct answer, and zero is given for the incorrect answer, and hence the answer for each item ranges from 0 to 1, and the total score for the test ranges from 0 to 40 points. The reliability of the test in terms of internal consistency (Mahmoud 2021) was assessed by Cronbach's Alpha with $\alpha = 0.889$.

A writing readiness skills test (prepared by the researcher) was used as well. This test was prepared in particular for this study. It contains ten pictures. The author asks each child trace lines ,up

Table 1: Results of homogenisation of members of the two groups (experimental and control) in VP skills and writing skills

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*
Experimental	VD	15	0.6000	0.632	0.296	>0.05
Control		15	0.666	0.744		
Experimental	VM	15	1.066	0.865	0.928	>0.05
Control		15	1.012	0.636		
Experimental	SR	15	1.034	1.214	0.724	>0.05
Control		15	1.218	1.571		
Experimental	S&B	15	0.933	1.214	0.911	>0.05
Control		15	0.876	1.812		
Experimental	VC	15	0.8000	1.745	0.354	>0.05
Control		15	0.7330	1.571		
Experimental	Total	15	10.600	4.051	0.301	>0.05
Control		15	10.066	4.224		
Experimental	WS	15	4.56	2.01	0.313	>0.05
Control		15	4.39	2.03		

and down , match pictures , and color the first letter. A score is given for the correct answer, and zero is given for the incorrect answer, and then the answer for each item ranges from 0 to 1, and the total score for the test ranges from 0 to 10 points. The reliability of the test in terms of internal consistency was assessed by Cronbach's Alpha with $\alpha = 0.733$.

Design

A semi-experimental, pre-post-test with two groups (experimental and control) was employed (see Fig.1).

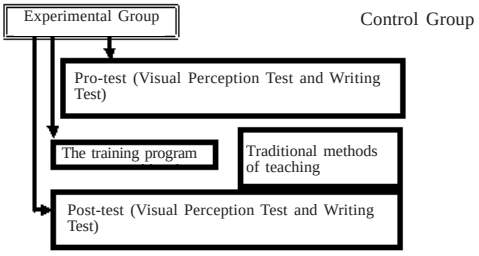

Fig. 1. The proposed model for the research study
Source: Author

Procedure

The program was applied to the experimental group (12 sessions; 3 sessions per week; each session lasts for 20-25 minutes, total period or application= 4 weeks, that is, a month). The program used in the current research relies on training in visual communication, self-awareness, visual discrimination, assertiveness, shape discrimination, colour discrimination, and transportation. Children were tested twice, that is, pre- or before the application of the program, and post or after the application of the program. Scores were extracted and analysed.

RESULTS

The research used the quasi-experimental approach due to its suitability to the nature of the research, which relies on the experimental design based on two groups, one experimental and the other is control, and by using the pre- and post-testing of the two groups. t-test was used.

To testify the first hypothesis, which states that, "There will be differences experimental and control groups in visual discrimination in favour of the experimental group", the t-test was employed as shown in Table 2. The table shows that there are differences between the mean scores of the experimental group and the control group in post-test in visual discrimination in favour of the experimental group. This indicates that the experimental group benefited from the training program that it was exposed to, and thus it achieved a gain, which is the subtest for visual discrimination, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta squared is equal to 0.835, which indicates that the effect size of the training program is high for the experimental group.

To testify the second hypothesis, which states that, "There will be differences between experimental and control groups in visual memory in favour of the experimental group", the t-test was employed as shown in Table 3. Table 3 shows that there are differences between the mean scores of the experimental group and the control group in post-test in visual memory in favour of the experimental group. This indicates that the experimental group

Table 2: t-test results on visual discrimination

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	VD	15	5.733	1.655	8.032	P ≤0.01	0.835
Control		15	1.866	1.784			

Table 3: t-test results on visual memory

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	VM	15	6.933	1.437	9.971	P ≤0.01	0.880
Control		15	2.133	1.187			

benefited from the training program that it was exposed to, and thus it achieved a gain, which is the subtest for visual memory, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta Squared is equal to 0.880, which indicates that the effect size of the training program is high for the experimental group.

To testify the third hypothesis, which states that, "There will be differences between experimental and control groups in spatial relationships in favour of the experimental group", the t-test was employed as shown in Table 4. The table shows that there are differences between the mean scores of the experimental group and the control group in post-test in spatial relationships in favour of the experimental group. This indicates that the experimental group benefited from the training program that it was exposed to, and thus it achieved a gain which is the subtest for spatial relationships, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta Squared is equal to 0.828, which indicates that the effect size of the training program is high for the experimental group.

To testify the fourth hypothesis, which states that, "There will be differences between experimental and control groups in shape and background in favour of the experimental group", the t-test was employed as shown in Table 5. The table shows that there are differences between the mean scores of the experimental group and the control group in post-test in shape and background in favour of the experimental group. This indicates that the experimental group benefited from the training program that it was exposed to, and thus it achieved a gain, which is the subtest for shape and background, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta Squared is equal to 0.805, which indicates that the effect size of the training program is high for the experimental group.

To testify the fifth hypothesis, which states that, "There will be differences between experimental and control groups in visual closure in favour of the experimental group", the t-test was employed as shown in Table 6. The table shows that there are differences between the mean scores of the experimental group and the control group in post-test in visual closure in favour of the experimental group. This indicates that the experimental group benefited from the training program that it was exposed to, and thus it achieved a gain which is the subtest for visual closure, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta Squared is equal to 0.806, which indicates that the effect size of the training program is high for the experimental group.

To testify the sixth hypothesis, which states that, the t-test was employed as shown in Table 7.

Table 4: t-test results on spatial relationships

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	SR	15	6.400	1.298	8.659	P ≤0.01	0.828
Control		15	2.466	1.187			

Table 5: t-test results on shape and background

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	S&B	15	5.866	1.355	7.802	P ≤0.01	0.805
Control		15	2.333	1.112			

Table 6: t-test results on visual closure

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	S&B	15	5.933	1.279	8.209	P ≤0.01	0.806
Control		15	1.933	1.387			

The table shows that there are differences between the mean scores of the experimental group and the control group in post-test in writing readiness skills in favour of the experimental group. This indicates that the experimental group benefited from the training program that it was exposed to, and thus it achieved a gain, compared to the control group members who were not trained but were still learning by traditional methods, without being exposed to the training program based on communication skills. Furthermore, Eta Squared is equal to 0.809, which indicates that the effect size of the training program is high for the experimental group.

DISCUSSION

This study aimed to investigate the effectiveness of a communication skills training program in developing some visual perception and writing readiness skills for kindergarten children. Looking at Tables 2-7, it becomes clear that there are differences between the mean scores of the experimental and control groups in all sub-skills of visual perception, and this indicates that children can learn basic academic skills, so the program activities were supported for these children (that is. children of the experimental group) in the direction of stimulating their motivation towards learning, through its multiplicity and diversity, the way it is presented, and its inclusion of the two elements of suspense and attraction, the gradation from easy to the most difficult, and continuous training at regular and non-spaced intervals, taking into account the individual differences.

This stage will mostly cover the pre-school years, and may extend to the first school year of the child's life, and sometimes extend to the beginning of the second school year, as the reading skill, like any other skill, requires a certain mental and physical maturity to reach it (Eissa 2014; Khalik 2014) and it also requires sufficient knowledge and experience to qualify for (Eissa 2017). The child does not learn nor master reading and writing in a good and affordable manner, unless they are ready for them. Studies confirm that a child cannot learn to read and write before this learning precedes a period of preparation and training in kindergarten, so that they acquire concepts and skills that develop their willingness to learn to read and write (Bowey 2005; Mardan 2005).

This result can also be interpreted in the light of the method used to present the content of the training program used in this study, where the method of multisensory (Eissa 2015; Eissa and Hesham 2013) was used. The visual perceptual skills do not occur automatically, but appropriate opportunities must be created for their occurrence by using methods and activities that attract students' attention. The method of multimedia development of visual perceptual skills is an attempt to use several senses in training on perceptual skills. There is a variation between children in relying on the different senses to obtain information or stimuli. That is, the difference in importance with respect to within one individual, which imposes on them a sensory or cognitive preference for any of them in the reception of information or stimuli, and through this method can create a kind of integration between the senses, so that this integration contributes more effectively to the active reception of information or stimuli.

Among the results of those hypotheses was what it revealed about the statistical effect of the program on developing the skill of visual discrimination among the pupils of the experimental group, a result that can be interpreted in the light that the training program included many activities that included training for pupils on distinguishing between colours, shapes, pictures, sizes, letters and words, and understanding aspects of similarities and differences between them, in terms of shape, colour, pattern and position, such as asking the student to extract a shape from a group of geometric shapes(Rodán-Gonzále et al. 2009). In other words, these exercises have improved the visual search process, which means trying to accurately determine the

Table 7: t-test results on writing readiness skills

Group	*Subscale*	*N*	*M*	*SD*	*t*	*p-value*	*Eta squared*
Experimental	Writing readiness skills	15	8.243	1.043	9.65	P $\leq$0.01	.809
Control		15	5.123	1.291			

target stimulus from among the other stimuli that exist with them in the visual field, so if the child is looking at a visual scene that contains several geometric shapes and asked to focus their eyesight on the triangular shape, for example, their eyes will pass over the visual scene back and forth until they see the triangle and focus on it, and those attempts made by the eyes to search for the triangular shape among the geometric shapes that exist with them in the visual scene are called the process of visual search (Mercer 2001). The visual discrimination of shapes and symbols gives the student the beginning of the thinking awareness, which they need to understand the geometric and symbolic properties, and helps them in drawing geometric shapes with a reasonable degree of accuracy, as well as in writing arithmetic numbers and symbols (Rodán-Gonzále et al. 2009).

The program has also proven to be effective in developing VM, and perhaps this is due to the diversity of the program's activities, including shapes, pictures, letters, words and numbers that were presented through independent activities, which were based on developing short-term memory by presenting stimuli that are similar to each other and need from the student the accuracy of focus and focus of feeling around the desired (standard) shape and similar shapes.

Therefore, short-term memory is a component with limited capacity to collect and carry information that requires an instantaneous response (Khalik 2104), which assimilates the necessary information that the student receives during the explanation or conversation in order to continue the conversation. Short-term memory can retain information under the frequency or significance of stimuli (Ali 2003).

Experimental data show that short-term memory is formed from a time space that does not exceed some hundreds of fractions of a second, and it is a remembrance record characterised by fragile, rapidly extinct and forgotten information. This is consistent with the experimental data showing that the work effort traveling through the active nerve pathways of this memory record (John et al. 2017) is what embodies the short-term memory information, which is fortified electrophysiological information (Mustafa 2004).

The previous results also indicated that the program led to statistically significant differences in visual closure between the pre and post-tests of the experimental group in favour of the post-test, and it also led to differences between the experimental and control groups in this subscale of visual perception.

This result can be explained in the light of the educational experiences that children of this group were exposed to through the training program, and in light of this it can be said that the training program based on the development of VP skills used in this study helped in developing the skill of attention of these children through tasks of discrimination. Lerner (2000) indicates that, in this context, one can develop these children's skills and abilities related to similarity, congruence, difference, arrangement, comparison and classification, which can lead to positive results as their selective attention improves (Alqahtani 2019). Hence, the skills of VM and VD are two important skills for VC, and then this improvement in the two mentioned skills may have contributed to the improvement of their level of VC (Rodán-González et al. 2009).

These results are in general in the same line with the results of Ramadan (2018), which emphasised the importance of developing cognitive skills in the learning process, and with Yamani's (2005) results, which indicated that visual perception can be trained in, and it was found that the performance of the experimental group members improved in post testing as a result of the effect of the training program on visual perception skills.

CONCLUSION

The early childhood stage is one of the most important stages that the human race goes through, as it represents an educational and learning framework that aims at their development in all aspects, physical, mental, emotional and social. It affects the formation of a person. Preparing the child at this stage to face the future life is an urgent requirement in these days in a world that is characterised by many developments and changes at various levels and developments. With the successive changes in the current era, the child needs a set of skills that enable them to cope in this society, as preparing the child for the future life takes place in the present, for the children of today are the people of tomorrow and the leaders of the future. It can be said that visual perceptual skills do not occur automatically, but appropriate opportunities must be created for their occurrence by us-

ing methods and activities that attract students' attention. The training program could offer the children in the experimental group the chance to improve these VP skills and writing readiness skills.

RECOMMENDATIONS

Based on the results of this study, some recommendations are presented below. The child needs to be heard, as they must feel that what they say is of interest to the parents and teachers, and not useless gossip. Although gossip is a normal symptom in children between three and seven, ignoring is not an appropriate treatment. The child must receive listening and listening all the time. Parents and teachers have the skill to postpone or end conversations without letting the child speak alone. Learning and practicing effective communication skills requires handholding. Young children mostly learn by seeing their peers and families. Thus, set an example for them and help them learn the art of communication. Oral language skills or public speaking skills are best developed through regular interactions with each other. Thus, establish positive interactions with the child frequently. Considering that having visual perceptual skills is an important method of conveying knowledge to children, curriculum programs should be arranged accordingly and improvements should be made.

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