



The Effects of Digital Drama-Based Instruction on Developing Receptive and Expressive Language among Kindergarten Children

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Young children need to mentally retrieve and express words aloud. They also need understood words when they are heard or read. The purpose of this study was to gain insight into the potential effects of digital drama -based instruction on developing receptive and expressive language among kindergarten children. This study employed a quantitative approach using a quasi-experimental, pre-test and post-test and follow up design. Sixty students were randomly chosen from public kindergartens. The kindergartens were randomly selected from the total number of public kindergartens in the city. They were divided into two groups: experimental group, where they received drama -based instruction for 6 weeks. While children in the control group did not receive such an instruction. The researcher has chosen a number of study topics that are the main topics of the curriculum approved in Kindergarten stage (e.g. Read facial expressions, Natural phenomena, and the Four Seasons etc.). They were formulated in the form of dramatic representations in which movement and action are acted by children at this stage. Using a pre-test–intervention–post-test, and follow up design, it has been shown that digital drama -based instruction was effective in developing receptive and expressive language among kindergarten children.

Keywords: digital drama-based instruction, receptive language, expressive language, kindergarten children, instruction

INTRODUCTION

Young learners, like most of other older learners, are in need to ways to access information and to acquire skills in dealing with modern technological means (Akay, 2017, Aljaberi, 2021; Mallik and Mallik, 2017; Sanchez, 2020). Since the emergence of the WWW (World Wide Web, which is also known as a Web) in the early nineties, this digital revolution has positively affected every society in the world and opened the door to a wide range of possibilities in the visual arts.

Perhaps one of the most important contemporary teaching skills is that of using digital technology in the teaching and learning processes, where renewal and change to get out

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of the repetitive routine that often dominates the teacher's teaching performance in classrooms (Konca and Hakyemez-Paul,2021; Pittman& Gaines,2015).

Recently, educators began to think of using digital technology. This itself led to the emergence of new and diverse forms of educational resources represented in multimedia which in turn outperform traditional forms (Van Scoter, Ellis and Railsback,2001), especially in the presentation of events, description of phenomena, and places associated with the content of the curriculum (Gündüzalp,2021; Zabatiero, Straker, Mantilla, Edwards& Danby, 2018). The presence of information technology has made the emergence of computer-based learning (Hariadi et al., 2022). Through activities student's personal experiences are used to integrate with new ideas.

With the recent trends that call for making the learner the center of the educational process, educational and psychological research has taken a new path, making the learner and his/her needs a target for the educational process (Pinto& Leite, 2020). This research (Konca and Hakyemez-Paul, 2021) tended to try to reach strategies and methods that would facilitate the learning process, gain knowledge, and process information about the best way to employ digital technology in the teaching and learning processes.

Educational drama is one of the most important effective strategies that develop all aspects of learners: cognitive, mental, psychological, physical, kinetic, and social. It focuses on modern education in developing the learner spiritually, socially, and mentally (Dima, Kaiafa and Tsiaras, 2021). It works to present the educational material in an entertaining way that makes the learner express his/her potentials, and helps him/her discover his/her creative and physical abilities.

In line with the developments taken place in the interactive digital age, the term digital drama appeared. It helps to enrich and deepen the learning process for all students, especially the young ones, due to its connection to the direct experience resulting from the activity and effectiveness of the learner (Caroll, 2002). It considers the psychological and social needs of the learner.

The learner always tends to move things, even if the scenario is simple, or perhaps he/she is attracted to the smooth dialogue that led him to an interesting end. Therefore, the concept of digital drama and its various forms must be introduced to address the imbalance resulting from the gap (Davis, 2009, 2011; Michalis, 2021). In education, which was caused by students' interruption of face-to-face education, during the spread of the epidemic (Covid-19), in addition to the opportunities it provides to employ different learning styles

The primary goal of educational drama is to solve the problem of meaning. Children can be encouraged to practice speaking outside the classroom through rehearsal (Dima, Kaiafa & Tsiaras, 2020; Khasyar, haryono and Ratnasari, 2021). This revolves around the dialogue between the element of expression and the form that it creates.

Literature Review

Language acquisition in children

The child begins to speak in the first year, where words increase until the third year of his life, and as he progresses in age, the more vocabulary he learns and can pronounce. I want to drink water), and when he says (no), he means “I don’t want this thing.” (Kavak, and Deretarla, 2020; Goodluck, 2020). The child concentrates the sentences and summarizes them in words with the help of facial expressions such as slander, disgust or repulsion, or turns his face to indicate rejection.

The child’s relationship with language is a productive and continuity relationship. Language in its relationship with the child has more than one source, as it is one of the means of expression that the child deals with, and it is the crucible in which the child’s experiences melt (Rowland, Theakston Ambridge & Twomey, 2020).

As for speech, it is linguistic formations whose unity is the word, and from their totality silence is formed(Goodluck,2020). Some children get confused in knowing the names of people, things, animals, plants, cities and their locations, and at home the child acquires a linguistic wealth from the words he/she acquires through dialogue with him/her.

Chomsky points out that despite the inadequacy of the language that children hear, children all over the world learn how to speak at about the same age, and he concluded that a person is born with a mechanism that makes him able to achieve and develop language proficiency and calls this mechanism a means of language acquisition(Rowland et al.,2020), and it is a latent ability that enables children from taking advantage of all the linguistic information they encounter to actually convert it into an acceptable language competence in their mother tongue .

Paving the way for effective and meaningful communication skills and change of ideas in daily life (Okyay and Kandir, 2017), receptive and expressive language among kindergarten children constitute an important part of cognitive development and communications as well.

Digital Drama

The concept of drama and its role has evolved in the present era to become not limited to the theatre only (Tezer, Kan and Bas, 2019), but its role has extended to become a successful means of psychological support and education (Çilengir and Akar Vural, 2016; Ulaş, 2008; Yalçın, and Akar Vural, 2016). It deals with the mind, heart and body as one unit. This helps children deal with feelings, solve problems, and communicate with others through their life experiences, and contributes to the development of imagination and self-confidence and supports their ability to balance, participation, tolerance and acceptance of others (Sirisrimangkorn & Suwanthep,2013).Drama is an improvisational, non-representative process, during which the participants are directed by the teacher, and lead them to imagine, act and express real or imaginary experiences through exciting creative activities that depend on the experiences of the participants

themselves as a target, which distinguishes it from theater that requires preparation to perform theatrical work (Culha, 2020).

Educational drama goes back to the ancient Greeks. At that time, it was performed on stage only. After that, dramas began to be shown on television and then cinemas, due to the huge technological development (Cameron & Anderson, 2009). Computer technology plays a role now (Michalis, 2021). This helps using Drama in the classroom easily in a way that excites children.

Drama in the digital age

Abu Khalil (2013), Anderson, Carroll and Cameron (2009) identified a set of characteristics of drama in the digital age, which can be summarized as follows:

The child unites with the role he plays, i.e. with the character of the actor: it is not just a practice of reading or telling the facts, but rather gaining a deeper view of the events or the situation. Drama in the digital age depends mainly on the child's motor, emotional and vocal ability. It assigns the learner to a dramatic work that is appropriate for his/her motor, emotional and vocal abilities. Drama represents the appropriateness of the temporal and spatial dimensions to the conditions of the learners: the dramatic presentation must be commensurate with the learners' ability to absorb and receive information. The place no longer takes a share of the effort in preparing it. This is because digital drama has made it possible to receive content anywhere that suits the student. Finally, it presents various electronic resources, web and multimedia capabilities.

Elements of drama in the digital age

It is necessary to identify the components of the digital educational drama situation to implement the prescribed curricula in a smooth and appropriate manner, the most beautiful of which are (Abu Khalil, 2013, Anderson et al., 2009) as follows:

The topic or idea: defining the topic, and most of the time it is one of the lessons of the curriculum for students in a specific subject. Its implementation serves the objectives of the lesson, and facilitates the assimilation and simplification of the concepts that permeate the topic of the lesson in an interesting way.

The "actor" student: Choosing the appropriate student for the role, preparing him psychologically and physically to carry out the tasks entrusted to him, and how to practice constructive interaction with others, as he represents the most important element in implementing the digital educational drama method.

Dramatic activity: the focus of dramatic activity is play, which is the basis of the digital educational drama process, and interaction is freely restricted, away from all threatening situations.

Multimedia, the Internet and smart devices: Technological media is considered the hinge of digital drama, without these devices, drama turns into a traditional one.

Significance

Pre-school education being the first step of contemporary education system (Tombaka,2013). Psychologists and educators agree on the importance of the kindergarten stage in the formation and development of the child's physical, emotional and mental characteristics, and the educational activities practiced by children in kindergarten affect the development of mental processes. Kindergarten is a place for guided play and not a place for learning in the traditional way. The kindergarten offers exciting activities that make the child enjoy playing in an atmosphere of joy and pleasure. The child in the kindergarten stage uses dramatic activity as a key to the process of social normalization and achieves the integrated development of the child emotionally, linguistically, socially and mentally. Drama thus serves to be an integrated educational method that is useful in educating child and his/her upbringing.

Research Questions and Hypothesis

The purpose of this study was to gain insight into the potential effects of digital drama -based instruction on developing receptive and expressive language among kindergarten children.

Main question. How effective is digital drama -based instruction on developing receptive and expressive language among kindergarten children?

Sub-questions.

- 1- Do experimental (exposed to drama -based instruction) and control (taught traditionally) groups differ in their receptive language post test scores?
- 2- Do experimental (exposed to drama -based instruction) and control (taught traditionally) groups differ in their expressive language post test scores?
- 3- If drama -based instruction is effective in improving receptive language of experimental group, is this effect still evident a month later?
- 4- If drama -based instruction is effective in improving expressive language of experimental group, is this effect still evident a month later?

Hypotheses

- 1- There will be difference between experimental(exposed to drama -based instruction) and control (taught traditionally) groups in their receptive language post test scores
- 2- There will be difference between experimental (exposed to drama -based instruction) and control (taught traditionally) groups in their expressive language post test scores.
- 3- Drama -based instruction is effective in improving receptive language of experimental group, and this effect is still evident a month later.
- 4- Drama -based instruction is effective in improving expressive language of experimental group, and this effect is still evident a month later.

METHOD

Research Design

This study used a quantitative approach using a quasi-experimental, pre-test and post-test and follow up design to investigate the effects of digital drama -based instruction on developing receptive and expressive language among kindergarten children.

Participants

Participants were recruited from four public kindergartens in Fayoum city. The sampling methodology used random sampling. The author conducted a power analysis using the power analysis formula and Lipsey's Sample Size Table (Creswell, 2012, p. 611) to determine the minimum number of participants needed for the study. A 5% margin of error and a power of .80 with an effect size of .90 was allowed. Hence, the minimum target sample size for ANCOVA analysis was determined to be 20 or greater for each of the treatment and control groups. Participant's children were 30 per treatment and control group. Accordingly, 60 students were chosen from public kindergartens in Fayoum city. The kindergartens were randomly selected from the total number of public kindergartens in the city. They were divided into two groups: experimental group, where they received drama -based instruction for 6 weeks. While children in the control group did not receive such an instruction.

Data Collection

Instruments

Receptive Language Test. The test was developed particularly for this study. The test consists of (20) items assessing receptive language, with score ranging from 0-1 on each item and a total score of 20.

Instrument reliability and validity

Table1 shows that Cronbach's alpha of the whole questionnaire are greater than the recommended threshold of 0.7. Besides, all corrected item-total correlation values were higher than the acceptability value of 0.5, that is, the internal consistency of the questionnaire was acceptable.

Table 1
Reliability test for each item, variable and the whole scale

Variable/item	Corrected item-total correlation	Cronbach's α if item deleted	Cronbach's α
Item1	0.746	0.806	0.896
Item2	0.748	0.807	
Item3	0.750	0.811	
Item4	0.744	0.801	
Item5	0.723	0.803	
Item6	0.746	0.806	
Item7	0.748	0.807	
Item8	0.750	0.811	
Item9	0.744	0.801	
Item10	0.723	0.803	
Item11	0.746	0.806	
Item12	0.748	0.807	
Item13	0.750	0.811	
Item14	0.744	0.801	
Item15	0.723	0.803	
Item16	0.744	0.801	
Item17	0.723	0.803	
Item18	0.746	0.806	
Item19	0.748	0.807	
Item20	0.750	0.811	
Item21	0.744	0.801	
Item22	0.723	0.803	

For convergent validity of the receptive language test, correlation with the receptive language test (Fares, 2005) was significant ($r=0.65$, $p<.01$).

Expressive Language Test. The test was developed particularly for this study. The test consists of (20) items assessing receptive language, with score ranging from 0-1 on each item and a total score of 20.

Instrument reliability and validity

Table2 shows the test–retest reliability of the scale. The ICC for the scale between the two assessments was 0.73.

Table 2
Test–retest reliability results (raw scores).

Measure	1st Test M (SD)	2nd Test M (SD)	Difference M (SD)	p- Values	Effect Size	ICC (95% CI)	SEM	MDC (MDC %)	Heteroscedasticity (Pearson r)
ELT	17.8 (9.2)	15.8 (7.8)	-2.1 (6.0)	0.001*	0.23	0.73	30.8 (9.2)	28.8 (7.8)	-2.1 (6.0)

For convergent validity of the receptive language test, correlation with the receptive language test (Fares, 2005) was significant ($r=0.61$, $p<.01$).

Procedure

The researcher has chosen a number of study topics that are the main topics of the curriculum approved in Kindergarten stage (e.g. Cheating, Injury, and the Four Seasons...etc.). They were formulated in the form of dramatic representations in which movement and action are acted by children at this stage.

The researcher presented a description of the steps for implementing the instruction that the teacher followed in training children on dramatic scenes. The drama -based instruction included the teacher's training of children on elementary principles in drama, good recitation and correct movement. Children were trained in body and face expression. Children were trained in different types of feelings and emotions such as (feeling happy, anger, surprise, pride ... etc.). They were also trained in the way they enter and leave the place of acting, how to act the scene. They were also trained in representing some simple dramatic situations, taught the utterances of the letters and how to pronounce the correct word. They were introduced to the importance of theatrical scenes in theatrical performances.

The drama -based instruction begins as follows (defining the lesson, reviewing the content of the lesson, formulating objectives, manipulating the content in a dramatic way, defining the tools and aids, determining the methods of evaluation, preparing the children, presenting the lesson and distributing roles, preparing the place of acting, giving directions, acting and evaluation).

Data Analysis

The effects of digital drama -based instruction on developing receptive and expressive language among kindergarten children were assessed using ANCOVA, repeated-measures, pre- post- and follow up testing design.

Ethical Procedures

The purpose of the study has been announced. The author wishes all children can continue with her till the end of the study. However, they were free to discontinue at any time.

FINDINGS

Table 3 shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in receptive language test. The table shows that the (F) value was (153.011, $P < 0.01$).

Table 3
ANCOVA analysis

Source	Type III sum of squares	df	Mean square	F	P
PRE	1.882	1	1.882		
GROUP	211.314	1	211.314	153.011	
ERROR	380.510	57	6.675		0.01
TOTAL	1287.576	59			

Table 4. Shows T. test results for the differences in post- test mean scores between experimental and control groups in receptive language test. The table shows that (t) vale was (4.12, $P < 0.01$) in the favor of experimental group.

Table 4
T- Test results

Group	N	Mean	Std. deviation	T	P
Experimental	30	15.66	1.11	4.12	0.01
Control	30	11.86	2.10		

Table 5. Shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in expressive language test. The table shows that the (F) value was (135.229, $P < 0.01$).

Table 5
ANCOVA analysis

Source	Type III sum of squares	df	Mean square	F	P
PRE	2.441	1	2.441		
GROUP	391.444	1	391.444	135.229	0.01
ERROR	87.886	57	1.541		
TOTAL	788.775	59			

Table 6 shows that (t) vale was (4. 01, $P < 0.01$) in the favor of experimental group.

Table 6
T-test results

Group	N	Mean	Std. deviation	T	P
Experimental	30	15.200	1.349	4. 01	0.01
Control	30	12.166	4.315		

Table 7 shows data on repeated measures analysis for receptive language test. The table shows that there are statistical differences between measures (pre- post- follow up) at the level (0.01).

Table 7
Repeated measures analysis for receptive language test.

Source	Type III sum of squares	df	Mean square	F	Sig.
Between groups	430.180	1	430.180		0.01
Error 1	140.777	58	2.427	401.163	
Between Measures	810.779	2	405.389	187.121	0.01
Measures x Groups	680.933	2	340.466	156.011	0.01
Error 2	348.799	116	3.006		

Table 8 shows data on Scheffe test for multi-comparisons in receptive language test. The table shows that there are statistical differences between pre and post measures in favor of posttest, and between pre and follow up measures in favor of follow up test, but no statistical differences between post and follow up test.

Table 8
Scheffe test for multi- comparisons in receptive language test

Measure	Pre M= 11.99	Post M= 15.66	Follow up M= 15.35
Pre	--	--	--
Post	5.33*	--	--
Follow up	5.47*	.67	--

Table 9 shows data on repeated measures analysis for expressive language test. The table shows that there are statistical differences between measures (pre- post- follow up) at the level (0.01).

Table 9
Repeated measures analysis for expressive language test

Source	Type III sum of squares	df	Mean square	F	Sig.
Between groups	9891.186	1	9891.186	287.201	0.01
Error 1	211.661	58	3.649		
Between Measures	1210.478	2	605.239	188.199	0.01
Measures x Groups	608.078	2	304.039	89.550	0.01
Error 2	498.130	116	4.294		

Table 10 shows data on Scheffe test for multi-comparisons in expressive language test. The table shows that there are statistical differences between pre and post measures in favor of posttest, and between pre and sequential measures in favor of follow up test, but no statistical differences between post and follow up test.

Table 10
Scheffe test for multi- comparisons in expressive language test

Measure	Pre M= 12.189	Post M=15.200	Sequential M= 15.167
Pre	--	--	--
Post	6.22*	--	--
Follow up	6.11*	.64	--

DISCUSSION

Using a pre-test–intervention–post-test, and follow up design, it has been shown that digital drama -based instruction was effective in developing receptive and expressive language among kindergarten children. It was effective and influential in developing children's receptive and expressive language (Rodrigues & Vethamani, 2015). The researchers attribute this positive effect to the drama -based instruction's features and valuable capabilities in drawing children's attention and encouraging them to interact effectively in the educational process by integrating technology that allows them to learn more with fun and excitement.

Drama is likely to be among the most effective teaching methods as it gives the child the chance to get involved in the learning and teaching processes (Tombaka, 2013). Through drama, he/she can do, live, feel, implement, and think.

The result can be explained that the use of educational drama combines education and play. It activates the child mentally, emotionally and kinetically, to build his/her self-reliant learning, through acting dramatic roles (Casteleyn, 2019). By using educational drama it is possible to overcome some educational and psychological problems facing children (Hulse, Owens, 2019). Especially those problems related to their weak ability to focus, as the use of educational drama raises the attention of children, because the events of the lesson are embodied in a lively and tangible way, which makes the experiences that are presented, have a direct impact on children (Ulaş, 2008), and therefore the children participating in the drama the ability to infer information, as if it came from within them and they possess it.

This results can also be explained by the change in the stereotype in teaching that accompanied educational drama, which attracted children, increased their interaction, and contributed to getting rid of feelings of tension, shame and the authority of the teacher (Tombaka, 2013). Drama requires children to use their senses greatly, such as listening, focus and observation, which leads to the development and consolidation of receptive language and expressive language (Szecsi, 2008). Educational drama is an application of Brunner's theory of cognitive development and learning by discovery, as he believes that any subject can be taught to any child, and this depends on the appropriateness of the presentation style to the characteristics of the learner.

Children in the experimental group outperformed those in the control group in receptive and expressive language. This can be attributed to the fact that the use of educational drama aroused their constant desire to play roles and raise their level of ambition. And this in turn had a clear impact on developing receptive and expressive language. As for children of the control group, their abilities were not aroused within the traditional method of teaching, at the same level as the method of using educational drama (Fleming, Merrell & Tymms, 2004). The flexibility of educational drama, and what it contains of: educational means, tools and activities used in an interesting and interesting context, facilitated the process of achieving the desired goals.

Educational drama transforms school subjects into a field of scientific, cultural, and entertaining appeal to the soul, through which the scientific material is transmitted in an interesting and attractive form (Tombaka, 2013). This in turn facilitates the process of understanding, because educational drama has many positive effects on children. It helps him/her interact with his/her senses and conscience, which makes the presented material firmly established for him/her.

These results can be attributed to the fact that educational drama creates a kind of dynamic communicative interaction, through the active participation of children, and interaction among them in situations that require the realization of the mind, investing their movement, and building knowledge on their own. This would achieve meaningful learning, which is consistent with principles active learning and the spirit of constructivism. While children lack that participation in the normal classroom environment, where it is controlled by the teacher, and children's negativity prevails, in

addition to that it does not take into account the individual differences between children, and does not suit their nature.

CONCLUSION

Drama is likely to develop child's ability to live the experiences he/she is going through, express his/her feelings and needs, and transform the experiences in situations of playing, eating, drinking, picnicking, and working into improvised plays that he/she performs in while playing with his small group members in the kindergarten, for example, without being restricted to a specific text or a specific method of expression, and without trying to direct the speech to a specific audience, and without any attempt to force children to express in a certain way. What this fabrication leads to a loss of spontaneity in expression. The goal of spontaneous representation is to develop the spirit of creativity and innovation in children.

A recommendation to the Ministry of Education to hold courses to train kindergarten teachers to convert educational material into dramatic and theatrical texts and use them in the classroom. Teacher preparation programs should include experiences that enable them to use educational drama in teaching planning, implementation, and evaluation.

IMPLICATIONS

The findings of this study showed that digital drama -based instruction was effective on developing receptive and expressive language among kindergarten children. It is recommended that this method to be incorporated in into the curriculum in order to best-teach receptive and expressive language to kindergarten children. Drama helps the children to acquire different daily life skills. This is done by training them on some situations that they may face, whether at home, at school, or in some social institutions, so that they can interact with society without feeling helpless or fear or shyness from confronting others, as well as training them to practice the roles they are expected to play later.

LIMITATIONS

This study has a number of limitations. Firstly, data were gathered by self-report. As self-report instruments were used, social desirability bias affecting the findings could not be ruled out. Second, number of children was small. Therefore, findings of the present study need therefore be interpreted with caution.

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