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The Combination of Imaginative Teaching Methods and Multimedia Learning in Early Childhood Education during COVID Pandemic: Social-Emotional and Language Development

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Abstract

Purpose – This study aimed to identify whether there is an increase in social-emotional and language aspects' enhancement through the combination of imaginative teaching methods and multimedia learning that the teacher carried out.

Design/methods/approach – This is a quantitative study that applies the pre-experimental design method. The model applied through this research was in the form of a pretest-posttest group which was carried out by comparing the emotional abilities of children before and after being given treatment in the form of a combination of imaginative processing methods and multimedia learning. The sampling technique used purposive sampling where the research subjects were in their early childhood, aged 5-6 years.

Findings – Imaginative teaching approaches and multimedia-based learning impact the development and improvement of children's socio-emotional and language development. This can be seen from the comparison between the post-test scores that are more significant than the pre-test scores, namely, and the significance value on all dimensions is $0.000 < 0.05$.

Research implications/limitations – In this study, the use of pretest and posttest methods in experimental design helps to clarify differences in the provision of imaginative processing methods and multimedia learning. The obstacles faced by the majority relate to the internet connection in communicating with teachers.

Practical implications – The combination of imaginative learning methods and multimedia learning improves language social-emotional aspects effectively. The results of this study contribute to understanding for teachers and school institutions to better utilize information and communication technology in optimizing child development.

Keywords Social-emotional development, Language development, Imaginative method, Multimedia learning

Paper type Research paper

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1. Introduction

As set out in Law No 20 of 2003 of the Republic of Indonesia, early childhood education aims to develop age-based developmental aspects so that children are ready to enter elementary school levels. Cognitive, socio-emotional, language, physical motor, moral value, religion, and art are six aspects that focus on development in early childhood education. Teachers and parents must adequately stimulate all aspects of child development to develop optimally. However, several factors can hinder children's development, including parental knowledge, environment, nutrition, and inappropriate stimulation or learning methods (Yafie, Nirmala, et al., 2020).

The most critical time in children's growth and development is at the early years of their lives. At this period, a child's brain contains around 100 billion neurons ready to communicate between cells as long as the child receives the necessary stimulation (Belsky & De Haan, 2011). The stimulants provided by the surrounding environment will affect children's growth. According to Black (2017), the children's development of qualifiable human beings should start early. The way that can be done is to optimize the brain by providing as much stimulation as possible. Children's socio-emotional and language development barriers have recently been widely discussed, especially in the COVID-19 pandemic. The pandemic requires every child to do online learning, limiting children from interacting and communicating with their peers. This action will undoubtedly determine the development of children's language and socio-emotional development.

Following Williford (2013) the Social development is closely related to children's ability to adapt to their environment, including adults, peers, and the wider environment. Children's social issues, including shyness, lousy behavior, assertive behavior, destructive behavior, and temper tantrums, have increased since the COVID-19 outbreaks with the government policy to stay at home (Benner & Mistry, 2020). Imran et al. (2020) report that school closings and limited interaction with friends due to the pandemic are causing children to experience stress and anxiety. It can also be said that the disease is one of the issues linked to children's socio-emotional well-being and language skills.

Children's social abilities are closely related to the language development aspects they acquire (Lederberg et al., 2013). Through language, children can interact with their peers. On the other hand, social activities require language to help two or more individuals interact. During learning from home activities, the intensity of the children playing with peers is missing. Therefore, it is natural that these two issues have increased in cases during COVID-19. Some teachers and parents often experience problems regarding attracting children's attention to focus on learning activities. On the other hand, the curriculum demands want children to participate in learning activities actively.

A preschool teacher must teach based on the needs of the child. Therefore, the teacher must provide a stimulus that can attract children's interest in learning activities (Zimmermann & Curtis, 2020). This circumstance requires learning media to make it easier for teachers and parents to provide information to children to tackle face-to-face learning limitations. One of the efforts is by using multimedia learning. Multimedia is defined as a medium that combines sound and image elements (Tinedi et al., 2018). The use of multimedia eases teachers to provide factual information to children. Abdulrahman et al. (2020) state that multimedia can attract children's interest in listening to stories so that learning processes are done more effectively and efficiently using Multimedia (Bus et al., 2015). Also, multimedia can help educators create a learning atmosphere through games (Nilsson et al., 2018).

Multimedia as a learning media is proven to optimize the development of cognitive, affective, and psychomotor aspects (Cooper & Higgins, 2015). With multimedia-based learning, teachers can provide stimulants such as teaching caring behavior by displaying relevant learning videos. The use of multimedia learning can provide more benefits by using appropriate teaching methods. According to Egan and Judson (2009), the teacher can use the innovative approach with the exploratory character to teach children early. Combining the imaginative teaching method and multimedia learning in preschool gives children the freedom to express ideas, opinions,

imaginations, and imaginative capabilities in their tasks and activities (Yafie, 2017). This method can motivate the children more so that they can express everything they feel and think. Imaginative teaching with a combination of multimedia can increase children's effectiveness in understanding information. The freedom of opinion provided can make it easier for children to explore without certain boundaries (Yafie, Nirmala, et al., 2020).

Multimedia can be in various modes, such as video, interactive powerpoints, games, and animated films. Imaginative teaching with a combination of multimedia can stimulate children's socio-emotional development (Mayer, 2017). Furthermore, multimedia broadcasts can affect children's behavior since they always imitate the behaviors and actions of the characters in animated shows or any other shows they watched. Stimulation from socio-emotional aspects has been done mainly by getting used to good habits or by having good and bad posters placed at schools. Currently, video shows attract children's attention more than teachers' explanations that are usually more extended and less entertaining.

Teachers as second parents for early years are expected to develop their creative, innovative, and adaptive (Yarbro et al., 2016). Teachers can carry out imaginative teaching methods by stimulating children to think and imagine an activity or object to increase their thinking skills. After children imagine, they will talk about their imagination to develop language and social, emotional skills that have been hampered by the lack of interaction during the covid pandemic (Hadzigeorgiou & Fotinos, 2007). In addition to these demands, research needs to be carried out immediately on children's social-emotional and language development through a combination of imaginative teaching approaches and multimedia learning for early childhood education. Imaginative teaching methods and multimedia learning are proper for early childhood education with children's imaginative characters and technological developments (Almarabeh et al., 2015).

2. Literature Review

2.1. Social-Emotional Development

Social-emotional development has an essential role in human development and growth (Malti & Noam, 2016). Generally, growth requires knowing, managing, and communicating emotions in ways appropriate to the age and development and the ability to create, sustain and establish healthy relationships with peers and adults (Brackett, Rivers, & Salovey, 2011). The expected attitudes to arise when the child's social-emotional development is well developed are, for instance, being active when they are involved in a situation, having an autonomous attitude, and having responsibility with oneself in social relationships with those around them (Jennings, 2014).

Social development aims to provide an overview of what to do when establishing social interaction relationships (Malti & Noam, 2016). Three points support children's socio-emotional development, including 1) self-awareness and mental state, 2) self-management, and 3) comprehension and social relationships.

Table 1. Children's Socio-Emotional Development

Children's Socio-Emotional Development	
Self-awareness and mental state	<ol style="list-style-type: none">1. The children show increased self-confidence and start expressing their opinions2. The children's independence develops3. The children begin to accept rejection and begin to seek support from their surroundings4. The children demonstrate the ability to adapt to various situations5. The children start to differentiate caution to strangers and trust those closest to them

Self-management	<ol style="list-style-type: none"> 1. The children begin to understand themselves and know the boundaries in personal qualities 2. The children show their self-interest and understand their self-distinct from others
Social understanding and social relations	<ol style="list-style-type: none"> 1. The children understand the feelings of the people around them 2. The children understand the cause and effect of a particular behavior 3. The children have an interest in playing with peers 4. The children want to share with others 5. The children can be cooperative with peers or other people

("Early Childhood Indicators of Progress: Minnesota's Early Learning Standards," n.d.)

2.2. Language Development

Language is the primary tool for people to communicate with each other. Stimulations of language skills in children have a crucial role in their language development (Yafie, Giavarini, & Maulidia, 2020). In activities that involve subjects and activities of their interests, children may learn new vocabulary (Harris, Hirsh-Pasek, & Golinkoff, 2011). Communication built with children should have a meaningful context to grasp the meaning they want to convey while adding their vocabularies. Language development involves a wide range of skills, including vocabulary (receptive and expressive), syntactic awareness, and narrative discourse processes (understanding and storytelling), which positively affect the achievement of reading during the early stages of learning, speaking skills, and the ability to understand information fully (Boons et al., 2013).

According to NIDCD (2010), there are three aspects in children's language development, i.e., sound, speech, and language. Teachers can encourage them with questions such as: what ideas they have, how children feel about something, and their reactions to a specific experience. By asking these questions, the children will be happy to respond since they tend to quickly talk about something they have experienced (McNeill & Pimentel, 2010). During discussions with kids, teachers can use open-ended questions. Open-ended questions will expand the conversation and allow teachers to promote vocabulary and encourage peer discussion (Wasik & Iannone-Campbell, 2012).

Table 2. Children's Language Development

Children's Language Development	
Receptive	<ol style="list-style-type: none"> 1. Show an interest in simple stories and answer related questions 2. Hear and understands most advice at home and school 3. Understand grammar 4. Understand multiple commands that are obtaining simultaneously
Expressive	<ol style="list-style-type: none"> 1. Have the ability to answer complex questions 2. Start telling the details 3. Start telling stories about topics he/she interests 4. Have accessible communication with fellow friends or adults 5. Except for a few sounds, say most sounds correctly, such as l, s, r, v, z, ch, sh, and the 6. Use words that rhyme 7. Capable of compiling simple sentences with a complete structure by including the main sentence - the predicate description
Literacy	<ol style="list-style-type: none"> 1. State the known letter symbols 2. Recognize sounds that come from the names of objects around them 3. Understand the relationship between sounds and letterforms 4. Able to spell to read his name 5. Capable of writing their name

2.3. Imaginative Teaching Methods

Walsh expresses the imagination as conscious behavior outside the habit or what is usually thought (Walsh, Chappell, & Craft, 2017). Imaginative learning emphasizes the freedom to think about things that have never been done or encountered before. There is the freedom to express various forms of ideas or opinions and fantasize about the activities. This learning method will stimulate children to have a balanced right and left brain (Lian, Kristiawan, & Fitriya, 2018). This attempt also gives children the potential to develop their intelligence and creativity. The world of imagination is so close to children, like the play's world (Moore, 2017). Through imagination, children can channel creative ideas that are usually lost from the radar of adult thinking.

The child's imagination will develop along with the development of language skills. However, the following factors influence a child's imagination: 1) the environment in which the child grows up, especially the family that witnesses the child's development and provides a treatment that the child can imitate; 2) the talent for natural imagination; 3) teachers who can stimulate children's imagination to develop (Dudley, 2013).

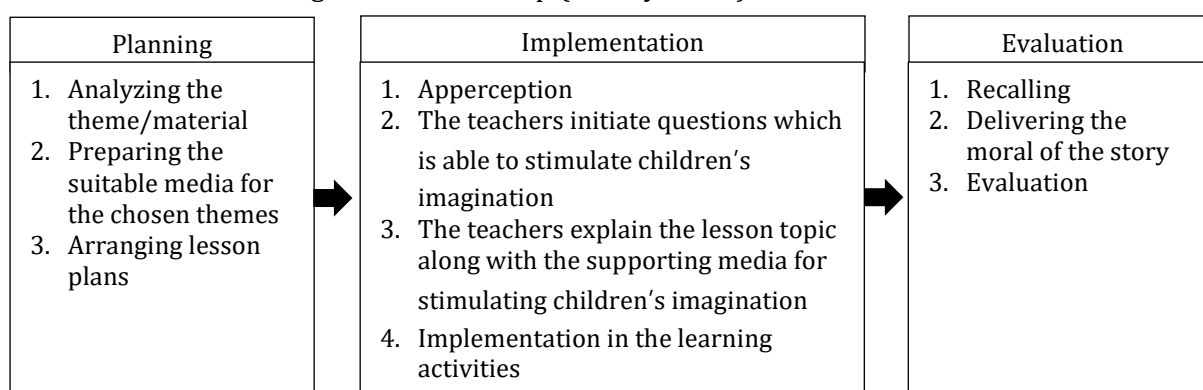


Figure 1. Procedure for Imaginative Learning Methods (Dudley, 2013)

2.4. Multimedia Learning

Multimedia learning utilizes various multimedia components such as text, images, audio, video, and animation as a learning resource. Mayer and Fiorella (2014) further explain that this learning method is shown in books containing text and diagrams, computer-based lessons containing animation and narration, and face-to-face slide presentations containing graphics. Interactive learning includes learning from words and photographs. In the research conducted by Mayer, he produced a theory called the multimedia principle, such as readiness, motivation, use of attention-centering tools, repetition, active participation of students, and feedback. Learning is more readily accepted when combining words and images compared to words alone (Mayer & Fiorella, 2014).

Betrancourt (2012) describes an integrated model of understanding text and images in multimedia-based learning. The three components of working memory (sensory, work, and long-term) play an essential role. It says that students learn better than text and images, provided they are semantically related (Zhang, Islam, & Lu, 2012). The text functions to guide information processing conceptually, while images can be considered a visual tool is representing the subject matter. People will understand more profoundly when they obtain descriptions in words and photos instead of words alone (Mayer, 2014).

Multimedia learning methods give opportunities for children to get the learning style they have. Multimedia can facilitate auditory learning styles with sound, visuals with images, and kinesthetic examples are given via video or animation (Clark & Feldon, 2014). Children with a relatively short attention span can quickly shift their focus back when the teacher displays something interesting to them through multimedia-based learning (Koh, Chai, Wong, & Hong, 2015).

3. Methods

3.1. Research Type

This research is classified as a quantitative study with a pre-experimental design method. The model used in this analysis is a pre-test-post-test group to evaluate children's socio-emotional skills before and after a mixture of creative teaching approaches and multimedia learning in early childhood education.

O ₁ X O ₂

Explanation:

O₁ = Pretest
X = Treatment
O₂ = Posttest

3.2. Population and Sample

The population of this study was all students at four Kindergartens (TK and PAUD) in Malang Regency, TK PGRI 5 Kromengan, TK Muslimat 01 Pulungdowo Tumpang, PAUD Mawar Putih Jatisari Pakisaji, and TK Dharmawanita Pucangsongo Pakis. Meanwhile, this research's sample is determined by the purposive sampling technique, which only requires 5-6 years old children.

Table 3. Sample

No	Name of school	Sample
1	TK PGRI 5 Kromengan	18
2	TK Muslimat 01 Pulungdowo Tumpang	15
3	PAUD Mawar Putih Jatisari Pakisaji	16
4	TK Dharmawanita Pucangsongo Pakis	15
Total sample		64

3.3. Data Collection Technique

Data collection technique is defined as how researchers obtain their research data. In this study, data collection was carried out in two ways, test, observation, and documentation. First, observation is used to assess children's language and socio-emotional development using observation guidelines, containing indicators with a Likert scale of 4,3,2,1. Meanwhile, documentation strengthens the data obtained, such as teacher activities, children's activities, and other research activities.

3.4. Validity and Reliability Tests

The validity and reliability tests were used to test the feasibility of the instrument. The validity test in this study used the product-moment formula by correcting each item with a total score. If there is a result of $r_{\text{value}} \geq r_{\text{table}}$ for an error level of 5%, the instrument is valid. In this study, the researchers used Cronbach's alpha formula based on the hypothesis. The reliability test in this study used the Cronbach's Alpha technique. The data were declared reliable if the reliability coefficient was above 0.60.

3.5. Data Analysis Technique

The quantitative data on social and emotional development were then analyzed using the paired t-test formula to determine the differences in socio-emotional and language development scores before and after treatment. The calculation was performed using SPSS software. Some of the requirements that must be fixed before conducting the paired t-test hypothesis are:

3.5.1. Normality Test

A normality test is used to find out whether the data are normally distributed or not. The normality test was performing using the Kolmogorov Smirnov test. Data are declared normal if the significant value is greater than 0.05 ($P > 0.05$).

3.5.2. Homogeneity Test

A homogeneity test is used to test whether the data is homogeneous or not. In this study, the researchers used the F-test provided that the data was homogeneous if the significance value in the Levene statistic test (P) is higher than 0.05 ($P > 0.05$).

3.5.3. Hypothesis Test

Hypothesis testing using Paired Sample T-Test determines the difference between the average value before and after combining imaginative teaching methods and multimedia learning in early childhood education. The hypotheses used are:

- H_0 : if the significance > 0.05 , there is no significant difference between the mean pre-test scores and the mean post-test scores.
- H_1 : if the significance is < 0.05 , there is a significant difference between the mean pre-test scores and the mean post-test scores.

4. Result

This study aims to measure children's language and socio-emotional development before and after being given a combination of imaginative teaching methods and multimedia learning. The sample of this study was all students in the four Kindergartens of Malang Regency, which amounted to 64 children taken by purposive sampling. The validity test was carried out using the product-moment formula at the 5% significance level, which indicates that all instruments are declared valid. After conducting the validity test, a reliability test is conducted to measure the instrument's reliability level.

4.1. Validity Test

The validity test shows the extent to which the measuring instrument used in measuring what is being measured is the observation instrument of social-emotional development and language development.

Table 4. Results of the Validity Test for Social-Emotional Development

Dimension	Indicator	r-	r-table	Explanation
Self-awareness and mental state	SAMS 1	0.675	0.2042	Valid
	SAMS 2	0.743	0.2042	Valid
	SAMS 3	0.709	0.2042	Valid
	SAMS 4	0.828	0.2042	Valid
	SAMS 5	0.845	0.2042	Valid
Self-management	SM1	0.762	0.2042	Valid
	SM2	0.777	0.2042	Valid
Social understanding and social relations	SUSR 1	0.794	0.2042	Valid
	SUSR 2	0.811	0.2042	Valid
	SUSR 3	0.726	0.2042	Valid
	SUSR 4	0.692	0.2042	Valid
	SUSR 5	0.862	0.2042	Valid

The validity test results of social-emotional development show all $r_{\text{value}} > r_{\text{table}}$ (0.2042). Therefore, all indicators or items are declared valid.

Table 5. Result of Validity Test of Language Development

Dimension	Indicator	r-	r-table	Explanation
Receptive	REC1	0.542	0.2042	Valid
	REC2	0.568	1.2042	Valid
	REC3	0.776	2.2042	Valid

	REC4	0.802	3.2042	Valid
Expressive	EXP1	0.646	4.2042	Valid
	EXP2	0.672	5.2042	Valid
	EXP3	0.880	6.2042	Valid
	EXP4	0.906	7.2042	Valid
	EXP5	0.750	8.2042	Valid
	EXP6	0.594	9.2042	Valid
	EXP7	0.620	10.2042	Valid
Literacy	LIT1	0.828	11.2042	Valid
	LIT2	0.854	12.2042	Valid
	LIT3	0.698	13.2042	Valid
	LIT4	0.724	14.2042	Valid
	LIT5	0.932	15.2042	Valid

The results of the validity test of language development show that all $r\text{-value} > r\text{-table}$ (0.2042) can conclude that all indicators or items are declared valid.

4.2. Reliability Tests

The reliability test aims to ensure the research instrument used to collect data has an adequate reliability level.

Table 6. Result of Reliability Test

Variable	Reliability coefficient	Explanation
Socio-emotional Development	0.893	Reliable
Language Development	0.821	Reliable

4.3. Normality Test

The normality test is carried out with the Smirnov Kolmogorov formula with the provision of standard data if the significance value (P) is more significant than 0.05 ($P > 0.05$).

Table 7. Normality Test

Variables	Asymp. sig (2-tailed)	Explanation
Socio-emotional development	0.347	Normal
Language development	0.527	Normal

The normality test results show that the socio-emotional development variable's sig value is 0.347 and 0.527 in the Language development variable. Therefore, it can be concluded that the data on both variables are expected.

4.4. Homogeneity Test

A homogeneity test is used to identify whether the data have the same variance (homogeneous) or not.

Table 8. Homogeneity Test

Variable	Levene Statistic	Sig.	Explanation
Socio-emotional development	2.324	0.176	Homogeny
Language development	2.466	0.273	Homogeny

The analysis results show that the Leneve test values are 2.324 and 2.466, and the significant value is greater than 0.05 (0.176 & 0.273). Therefore, it can be concluded that the data in each school have the same variance.

4.5. Paired T-Test Hypothesis Test

4.5.1. Socio-Emotional Development

Below are the results of the influence of imaginative learning methods and multimedia learning on children's socio-emotional development:

Table 9. Pre-test and Posttest Results

Dimension	Pre-test	Pos-test	Sig	t-	Explanation
Self-awareness and mental state	2.21	3.32	0.000	8.18	Significant
Self-management	2.15	3.20	0.000	7.89	Significant
Social understanding and social relations	2.41	3.5	0.000	8.89	Significant

The results of the paired sample t-test on each dimension of socio-emotional development showed significant results. The t_{value} for the aspect of self-awareness and mental state is 8.18, the t_{value} for self-management is 7.89, and the t_{value} for Social understanding and social relations is 8.89. The three dimensions of socio-emotional development have a significance value of 0.00 < 0.05. Hence, it can be concluded that there are significant differences in socio-emotional development between before and after given a combination of imaginative teaching methods and multimedia learning in early childhood education.

4.5.2. Language Development

Data collection related to children's language development was carried out by conducting tests and observing language skills. The test was carried out by giving verbal orders and questions then the teacher made observations and assessments of the child's verbal answers. The activity was to measure receptive dimensions (telling children to repeat sentences and answer questions verbally), expressive (retelling events seen from multimedia), and literacy (mentioning character characteristics in the story). Based on the test results of language development before and after using imaginative teaching methods and multimedia learning in preschool. Multimedia can combine sound and images with its advantages, making the children understand the teacher's information easier. Teaching with multimedia is characterized by the use of hardware such as tape recorders or projectors. Here are the results of the test that shows the effect of imaginative teaching methods and multimedia learning on children's language development:

Table 10. T-Test Results

Dimension	Pre-test	Pos-test	Sig	t-	Explanation
Receptive	2.13	3.25	0.00	8.05	Significant
Expressive	2.22	3.30	0.00	8.11	Significant
Literacy	2.17	3.21	0.00	7,15	Significant

The paired sample t-test shows that all aspects of language development, receptive, expressive, and literacy, have significant values. For example, the t_{value} in receptive aspect is 8.05 with a significance value of 0.00 < 0.05, the t_{value} for the aspect of Expressive is 8.11, and the literacy aspect is the t_{value} of 7.15. Therefore, it can be concluded that there is a significant difference between before and after being given a combination of imaginative teaching methods and multimedia learning in early childhood education.

5. Discussion

Combining imaginative teaching and multimedia learning methods in preschool improves children's language and socio-emotional skills. Assessment of children's language skills can be done with tests in the form of interviews, discussions, storytelling, and other verbal activities. This was done to see the development of language, especially related to speaking and listening (Hodges, Kline, Stern, Cytryn, & McKnew, 1982). However, pre-test result indicates that some children were still shy about expressing their opinions in the middle of the learning process, some were less independent so that most of the tasks were still completed by parents, some had a short attention span when listening to the teacher explanations, and some had difficulty understanding the information provided by the teacher. This problem arises from learning, often performed in a

monotonous way using learning media available in schools. For example, teaching literacy and vocabulary is mainly done using flashcard alphabet media, through guessing pictures and numbers according to the cards presented. However, these media and methods are repeatedly used every day for almost every lesson taught.

In early childhood learning activities, children are more easily distracted. When learning is implemented online, the child will not sit for hours in front of a screen and focus without assistance, especially in distance learning, where learning cannot do by face-to-face. Learning tends to make children get stuck in front of a screen monitor because various activities cannot be done freely. Therefore, learning based on innovative methods can be an option for early childhood, whose characters still tend to be explorative (Egan & Judson, 2009). This imaginative learning method can efficiently be combined with learning multimedia, which does involve technology massively. According to Yafie (2017), multimedia learning can help children explore ideas, opinions, and imagination when doing play activities. In practice, multimedia must be supported by the teacher's role, including directing children to imagine, answer children's questions, listen to children's opinions and stories, and direct the learning process according to the goals achieved. With the help of this type of learning, multimedia information is of a nature abstract can be presented in a concrete manner that triggers the emergence of children's imagination and creativity.

Imaginative teaching and multimedia learning can make it easier for teachers to stimulate language development. They can include sharing senses, such as listening to audio and reading knowledge simultaneously through visual effects. In addition, imaginative teaching strategies and multimedia learning illustrated in different colors will build children's excitement in carrying out the learning process without feeling forced and bored when they recognize letters.

For example, when teaching the topic of vegetable, the teacher displays the words 'CARROT' by asking a few questions, "I am orange. I am a type of vegetable. You used me as a complement in vegetable soup. Who am I? With enthusiasm the children answered "carrots" in unison. This shows that through imaginative teaching and multimedia learning, the children will understand the information more accessible. Furthermore, the observations show that listening to stories through a combination of imaginative and multimedia teaching methods can bring children to imagine what they hear so that when the teacher tells the story, the child asks some related questions that matched with their daily life.

To optimize children's potential, from aspects of physical, cognitive, moral, religious, and socio-emotional, language to art, parents and teachers each have a crucial role. So far, the socio-emotional aspect is only carried through children's habituation and activities at home and school. When learning from home is enforced, children do not have the opportunity to play with friends. If the children do not receive an excellent emotional stimulus, they will experience developmental obstacles that will impact their future lives. Early childhood at the concrete operational stage requires media that helps them see, feel, and associate so that their developmental aspects do not experience obstacles.

Using multimedia, imaginative teaching methods can facilitate socio-emotional development by presenting various acceptable behaviors and biases in a video (D'Amico, 2018). Shows presented in multimedia can influence children's behavior, especially those who are their favorite characters. As it is stated by Bandura (1977), children can learn through a model as long as the model is attractive and reliable. Implementation of teaching with innovative and multimedia methods can be presented using the child's favorite character, "UPIN and IPIN," who have done two wrong and right actions. Children raise their fingers as a code, 1 for wrong action and 2 for proper action. It was observed that every child could understand what the teacher says, based on the post-test results. The teacher displayed various relevant examples on the screen to stimulate the students. For example, they display a grandmother who has difficulty crossing while helping the teacher with exciting stories so that children can have the initiative to develop their socio-emotional aspects.

The increase in children's socio-emotional development and their language skills proves that imaginative teaching methods and multimedia learning can be an option for teachers. The combination of imaginative teaching methods with multimedia is relevant to an era in which everything is entirely digital, as to how it is now. Currently, children prefer to use gadgets rather than doing learning activities. This condition is complemented by exploratory early childhood characteristics so that it requires teachers who can balance the characteristics of children. Imaginative and multimedia teaching methods are presented by combining what the children like through learning methods based on their character

6. Conclusion

Imaginative teaching approaches and multimedia-based learning impact the development and increase the socio-emotional and language development of children. This conclusion can be seen from the comparison between post-test value more significant than the pre-test value, and the significance value on all dimensions is $0.000 < 0.05$. The teacher may take the creative approach by enabling children to visualize the shape of an object presented in multimedia-based learning. Multimedia learning can take the form of games, videos for learning, and interactive PowerPoint. This research can be a reference for teachers and school institutions to utilize information and communication technology in still optimizing children's development. For future researchers, it is hoped that they will conduct development research related to multimedia learning in a different way to improve other aspects of development besides Social-Emotional and Language.

Declarations

Author contribution statement

Evania Yafie conceived of the presented idea. Olusola-Fadumiye Titilope Olufunke, Lisa Nur Maulidia, and Diana Setyaningsih developed the theory and performed the computations of imaginative teaching methods and multimedia learning. Manal Ali verified the analytical methods. Evania Yafie encouraged Inayatur Robbaniyah to investigate social-emotional and language development and supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

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Data availability statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.


Declaration of interests statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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