

Development of the “Sopanspeak” Interactive Multimedia Application as a Learning Innovation to Instill Language Politeness in Early Childhood

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ABSTRACT

Language politeness is an important aspect in the moral, social, and communication development of early childhood. However, language politeness learning in early childhood education institutions is generally still carried out through habituation and direct examples so that children do not receive interactive and contextual learning experiences. Although various studies have developed media for moral education, interactive multimedia-based learning media specifically designed to teach language politeness in early childhood are still limited. This gap indicates the need for innovative media that can provide concrete examples, interactive practice, and engaging learning experiences to help children understand and internalize polite language usage. This study aims to develop an interactive multimedia application, “Sopanspeak” as a learning medium to instill language politeness in early childhood. The study used the Research and Development (R&D) method with the Lee & Owens model, which includes the stages of analysis, design, development, implementation, and evaluation. The study was conducted at TK Muslimat NU 2 Singosari with research subjects of 15 children in group B3 aged 5–6 years. Data collection techniques included observation, interviews, validation by material experts, validation by media experts, and product trials. The resulting product is an interactive multimedia application that integrates digital stories, educational songs, learning videos, educational games, interactive puzzles, and reward features in one learning medium. The results showed that the “Sopanspeak” application met the eligibility criteria based on expert assessment and user trials, with material expert validation reaching 95.8%, media expert validation reaching 94%, and product trials obtaining 90.3%, all in the “Very Feasible” category. This application can be used as a learning innovation to help children understand and get used to using polite language in everyday life.

Keywords: Interactive Multimedia, Polite Language, Early Childhood, Educational Games, Sopanspeak

1. INTRODUCTION

Language politeness is an important aspect of the language, social, and moral development of early childhood. The ability to use polite language not only helps children communicate effectively but also plays a role in building harmonious social relationships with their surroundings. Brown & Levinson, (1988) Explain that language politeness serves to maintain social relationships through the use of communication strategies that consider the feelings and respect of the interlocutor. In early childhood, the concept of politeness is manifested in simple behaviors such as saying hello, using words like “please,” “sorry,” “excuse me,” and “thank you,” and showing respect for others in daily interactions (ELDS, 2022). This behavior reflects children's efforts to understand and apply the social norms that apply in their environment (Wijaya Erik & Nuraini Farah, 2023).

At the age of 5–6, children's language development is very rapid. Children not only experience an increase in their vocabulary but also begin to learn to use language appropriately within the social context and rules of their environment (Mukhlis, 2025). The ability to use polite language is a crucial part of this development because it is closely related to a child's ability to respect others, control themselves, and build positive social relationships (Ministry of Education and Culture, 2014). Polite language does not emerge automatically but develops through a process of habituation, role modeling, and social interaction, through which children internalize social values, acquire appropriate linguistic behavior, and learn to use polite expressions in various social contexts (Ababil & Trifauzi, 2024; Naibaho et al., 2025; Saidah, 2021). However, these conventional approaches often lack the interactive and contextual experiences needed to optimally support children's language politeness development, highlighting the need for innovative learning media that can provide concrete examples and engaging practice opportunities.

From a moral development perspective, learning polite language also plays a crucial role in shaping children's character. Piaget and Kohlberg's moral development theories explain that early childhood is in the early stages of moral development and therefore requires concrete experiences, habituation, and positive reinforcement to understand behaviors that are considered good and in accordance with social norms (Safitri & M. Hajar Dewantoro, 2025). Meanwhile, Vygotsky's sociocultural theory emphasizes that children's language development and social behavior occur through interactions with their environment and support from adults (Fitriani & Maemonah, 2022). Therefore, learning polite language needs to be designed through learning experiences that allow children to observe, understand, and practice polite behavior in various everyday life situations.

Based on initial observations conducted during an internship program at TK Muslimat NU 2 Singosari, Malang Regency, children's polite language skills still need to be developed and practiced more consistently, even though at the age of 5–6, children are expected to demonstrate polite behavior as a foundation for daily life in accordance with early childhood development standards. The observations revealed that some children still speak in a high tone when interacting with friends, interrupt others while they are speaking, answer questions spontaneously without waiting their turn, and are not yet accustomed to using polite expressions such as "please," "sorry," "excuse me," and "thank you" consistently in daily interactions. Additionally, in certain situations, children were observed to imitate the speaking styles of their peers rather than following the teacher's guidance, indicating that peer influence plays a significant role in their language development. During the observation period, it was noted and later confirmed by the classroom teacher that the school is situated near a traditional market, where some parents of the children work as traders. This environmental context is relevant as it exposes children to diverse linguistic models that may influence their speech patterns and communication habits. Furthermore, it was found that the learning media used in daily activities was still dominated by conventional media such as storybooks, pictures, posters, and worksheets. These media often failed to sustain children's attention during extended learning sessions, as many children appeared easily bored, less focused, and more engaged when learning involved moving images, sounds, games, or interactive activities. This condition indicates the urgent need for innovative learning media that can provide concrete examples, interactive practice, and engaging experiences to help children understand, practice, and internalize the use of polite language in everyday life.

Developments in educational technology have opened up opportunities for more innovative learning media tailored to the learning characteristics of early childhood. One potential medium is interactive multimedia, which integrates text, images, audio, animation, video, and interactive activities into a single learning environment. According to Mayer (2009) children learn more effectively when information is presented through a combination of mutually supportive visual and auditory elements. Through the Cognitive Theory of Multimedia Learning, Mayer explains that integrating various multimedia elements can help students build more meaningful understanding than using a single type of media (Fiorella & Mayer, 2024). Research by Yafie et al. (2021) also shows that the use of narrative- and game-based multimedia can significantly improve children's social-emotional development and language skills.

Various previous studies have shown that instilling polite language skills in early childhood can be achieved through habituation, role modeling, the use of storybooks, literacy media, and learning activities involving social interaction. Zalmi & Mahyuddin (2021) emphasize the importance of literacy media such as

picture storybooks in enriching vocabulary and teaching polite language contextually. Furthermore, research by Saputri et al. (2020) dan Dwi Ismawati (2024) shows that the role of parents as role models, supervisors, and motivators is very influential in developing polite behavior in children in the digital era. However, based on previous research studies, teaching polite language skills in early childhood is still dominated by conventional approaches such as teacher familiarization, role modeling, and the use of simple media, while the development of interactive multimedia-based media specifically designed to stimulate polite language is still relatively limited.

Based on these conditions, learning media is needed that not only conveys the concept of polite language, but also provides opportunities for children to observe examples of polite language use, listen to appropriate speech, and practice it directly through interesting activities that are appropriate to the learning characteristics of early childhood. Therefore, this study developed the interactive multimedia application “Sopanspeak” as a learning innovation to instill polite language in early childhood. The novelty of this research lies in the development of media that integrates the politeness principles of Leech and Brown & Levinson, the moral theories of Piaget and Kohlberg, Vygotsky's sociocultural theory, and Mayer's multimedia principles into one learning application that combines digital stories, audio, educational songs, animation, video, educational games, interactive puzzles, and a reward system. Unlike conventional media that rely on habituation and storytelling, “Sopanspeak” offers an integrated learning experience where children can learn, practice, and receive immediate feedback through various interactive activities within a single platform. Thus, this study aims to develop and test the feasibility of the interactive multimedia application “Sopanspeak” as a learning medium for polite language in early childhood.

2. RESEARCH METHOD

This study used the Research and Development (R&D) method with the Lee & Owens development model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (William W & Diana L, 2004). This model was chosen because it is specifically designed for developing multimedia-based instructional media, making it more suitable for producing digital learning products like “Sopanspeak”. Unlike general instructional design models, the Lee & Owens model provides a systematic and structured procedure that emphasizes the integration of various multimedia elements such as text, images, audio, animation, and interactivity into a single cohesive learning application, from needs analysis to final product evaluation.

The study was conducted at Muslimat NU 2 Kindergarten, Singosari, Malang Regency. The research subjects consisted of two material expert validators, two media expert validators, and 15 group B3 children aged 5–6 years who participated in the product trial.

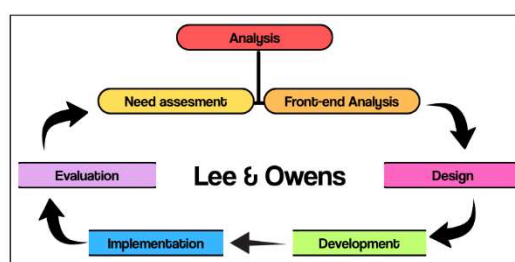


Figure 1. Lee & Owens development procedure

2.1. Analysis

The analysis phase was conducted through a needs assessment and front-end analysis. The needs assessment aimed to identify learning conditions, priority needs, and gaps between expected learning objectives and current learning practices. The analysis was conducted through observation of learning activities, observation of children's activities, and analysis of the media used in early childhood learning. The analysis results showed that language politeness learning was still dominated by conventional methods such as storytelling, repetition, direct examples, and simple habituation. The media used was also limited to storybooks, pictures, posters, and worksheets, thus preventing children from experiencing interactive and contextual

learning experiences. Furthermore, children were still not accustomed to consistently using polite expressions such as "please," "sorry," "excuse me," and "thank you."

Furthermore, a front-end analysis was conducted to obtain a comprehensive overview of learning conditions and media development needs. This analysis included audience analysis, technology analysis, situational analysis, task analysis, critical incident analysis, issue analysis, objective analysis, media analysis, existing data analysis, and cost analysis. The analysis results indicated that early childhood children were more attracted to media that combined visual elements, audio, animation, and play activities. In addition, there has not been any digital media specifically designed for learning polite language, so it is necessary to develop multimedia applications that are capable of integrating various learning activities in one platform.

2.2. Design

The design phase involved developing the "Sopanspeak" application concept, compiling learning materials, creating flowcharts and storyboards, designing the interface, and developing research instruments. The media was designed as an interactive game application that integrates elements of images, animation, audio, video, and narration. The developed materials focused on the use of polite expressions such as "please," "sorry," "excuse me," and "thank you" in various situations in children's daily lives. This phase also included various interactive activities such as composing polite sentences, choosing appropriate responses, and identifying polite and impolite behavior.

2.3. Development

The development stage is the process of creating the "Sopanspeak" application based on the pre-designed design. Development is carried out by integrating various multimedia components such as images, audio, animation, learning videos, educational songs, digital stories, and interactive games into a single learning application. After the product is developed, validation is carried out by subject matter and media experts to obtain input regarding the suitability of the material, display quality, interactivity, navigation, and ease of use. The validation results are used as a basis for revising and refining the product before being tested on users.

2.4. Implementation

The implementation phase involved a product trial with 15 children in Group B3 of Muslimat NU 2 Kindergarten in Singosari. The trial aimed to determine the media's acceptability, ease of use, and user response to the "Sopanspeak" application. During this phase, the children used the application directly to participate in various learning activities within the platform.

2.5. Evaluation

The evaluation stage is conducted to assess the product's suitability based on validation results from subject matter experts, media experts, and user trials. Evaluation is conducted continuously at each stage of development to ensure that the resulting application aligns with the learning objectives and characteristics of early childhood. Evaluation results are used as a basis for product improvements and refinements until an application is suitable for use in teaching polite language.

The data collection techniques used in this study included observation, media expert validation, material expert validation questionnaires, and user response questionnaires (Sugiono, 2019). Data were analyzed using quantitative descriptive techniques by calculating the percentage of eligibility using the formula:

$$P = \frac{\sum X}{\sum X_{maks}} \times 100\%$$

Product eligibility criteria are determined based on the percentage of validator and user assessment results (Hoesny et al., 2026).

Table 1. Product Eligibility Interference Criteria
Presentase Category

81% - 100%	Very suitable
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Presentase	Category
61% - 80%	Suitable
41% - 60%	Fairly suitable
21% - 40%	Not suitable
0% - 20%	Very not suitable

3. RESULT AND ANALYSIS

3.1. RESULT

3.1.1. Media Development Needs Analysis

The analysis phase was conducted to identify the need for developing media for teaching polite language for early childhood. Based on observations at Muslimat NU 2 Kindergarten in Singosari, polite language learning has been implemented through habituation activities in daily activities. Teachers guide children in using polite expressions such as "please," "sorry," "excuse me," and "thank you" when interacting with friends and teachers. This habituation is carried out repeatedly so that it becomes part of the children's daily behavior.

However, observations indicate that some children are still inconsistent in using polite expressions in various situations. Furthermore, the learning media used is still dominated by conventional media such as storybooks, pictures, flashcards, and direct explanations from the teacher. These media assist in delivering material, but fail to provide an optimally interactive and engaging learning experience for early childhood.

A review of various previous studies also shows that teaching polite language for early childhood is generally still conducted through habituation approaches, role models, storytelling methods, and the use of simple media. There are not many interactive multimedia-based learning media specifically developed to instill polite language in early childhood. Based on these conditions, innovative learning media are needed that can integrate various learning activities in one digital platform that is interesting and appropriate to children's characteristics.

3.1.2. SOPANSPEAK Application Design

The design phase involved developing the "Sopanspeak" application concept. Activities included developing learning materials, creating flowcharts, storyboards, designing the user interface, and developing research instruments.

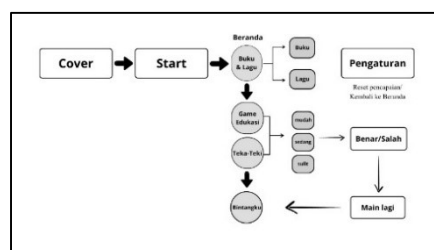


Figure 2. Flowchart of the "Sopanspeak" application

The developed materials focused on the use of polite expressions such as "please," "sorry," "excuse me," and "thank you" in various everyday situations. All materials were structured based on the developmental characteristics of children aged 5–6 years to ensure they were easy to understand and apply in real life.

3.1.3. Product Development

The development phase resulted in the "Sopanspeak" interactive multimedia application, designed as a learning tool for polite language for early childhood. The application was developed by integrating various multimedia elements such as text, images, audio, animation, video, and educational games. In general, the

“Sopanspeak” application consists of several main menus that are integrated to support the polite language learning process.



Figure 3. “Sopanspeak” homepage



Figure 4. Homepage

Books and songs

The digital storybook feature contains interactive stories that highlight situations in children's everyday lives. The stories are structured based on the context of the use of the words "please," "sorry," "excuse me," and "thank you," so children can understand the meaning and function of each expression contextually. Through this feature, children not only read the story but also listen to the narrative, complete with visual illustrations and simple animations. The combination of text, images, and audio aims to increase children's attention span and understanding of the material presented.

The educational song feature was developed to help children remember polite expressions through singing activities. The songs are composed with simple lyrics that are easy for young children to understand and remember. Singing activities were chosen because they align with the learning characteristics of children who enjoy fun and repetitive activities. Through songs, children can internalize the values of polite language more naturally.



Figure 5. Display of the Book and Song Feature

Educational Games

Educational games are a key feature of the “Sopanspeak” app. In this feature, children are presented with various social situations and asked to choose the most appropriate response. For example, when a character asks a friend for help, children are asked to determine the appropriate expression. Each correct answer earns points and positive feedback, strengthening the child's understanding of the material being studied.



Figure 6. Display of the Educational Games Feature

Interactive Puzzles

The interactive puzzle feature was developed to train thinking skills while strengthening children's understanding of polite language. Available activities include matching images, composing words, and choosing the appropriate answer for the given situation.



Figure 7. Display of the Puzzle

My Achievements Feature

The My Achievements feature functions as a reward system that displays the number of stars a child has accumulated while using the app. The rewards aim to increase learning motivation and provide positive reinforcement for desired behavior.



Figure 8. Display of the "My Achievements" feature

Media Expert Validation Results

Media expert validation was conducted to assess the quality of the application's appearance, navigation, interactivity, and ease of use.

Table 2. Results of Material Expert Validation

Assessment Aspect	Media Expert 1	Media Expert 2
Total Score	39	36
Percentage of Feasibility	86,6%	80%
Category	Very Feasible	Feasible
Number of indicators scored 3	9 indicators	8 indicators
Number of indicators scored 2	6 indicators	5 indicators
Number of indicators scored 1	0 indicators	2 indicators

The validation results show that the application's appearance is considered attractive and appropriate for the characteristics of early childhood. The use of color, illustrations, icons, and animations enhances the application's visual appeal. Furthermore, simple navigation makes it easier for children to operate the application independently.

The media validator suggested several improvements related to button size and the placement of several visual elements to improve user accessibility. After revisions, the application was categorized as very feasible.

Material Expert Validation Results

Material expert validation was conducted to determine the level of suitability of the material to the learning objectives, the developmental characteristics of early childhood, and the linguistic aspects used in the application.

Table 3. Subject Matter Expert Validation Results

Assessment Aspects	Subject Matter Expert 1	Subject Matter Expert 2
Total Score	44	46
Percentage of Feasibility	91,6%	95,8%
Category	Very Feasible	Very Feasible
Number of indicators score 3	12 indicators	14 indicators
Number of indicators score 2	4 indicators	2 indicators
Number of indicators score 1	0 indicators	0 indicators

Based on the validation results, the subject matter suitability aspect received a very good score because the material presented aligns with the language and social-emotional development indicators for children aged 5–6 years. From a linguistic perspective, the use of simple and communicative sentences is considered to facilitate children's understanding of the material. The validator also provided several suggestions for improvement, such as simplifying some instructions and adding examples of polite language use in certain situations. After revisions, the application was declared suitable for testing.

3.1.4. Implementation of Media Use

Product trials were conducted on 15 children in Group B3 of Muslimat NU 2 Kindergarten, Singosari. And obtained a score with the following description:

Table 4. Media Trial Results

NO	NAME	SCORE				TOTAL	Percentage
		1	2	3	4		
1.	P1		2	4	3	30	75%
2.	P2			2	8	38	95%
3.	P3			2	8	38	95%
4.	P4			1	9	39	97,5%
5.	P5			3	7	37	92,5%
6.	P6			2	8	38	95%
7.	P7			7	3	33	82,5%
8.	P8			2	8	38	95%
9.	P9		2	8		31	77,5%
10.	P10				10	40	100%
11.	P11			6	4	37	92,5%
12.	P12			4	6	36	90%
13.	P13			3	7	37	92%

NO	NAME	SCORE				TOTAL	Percentage
		1	2	3	4		
14.	P14			1	9	39	97%
15.	P15		1	4	5	34	86%

Based on the results of a trial implementation of the “Sopanspeak” media with 15 children in Group B3 of Muslimat NU 2 Kindergarten in Singosari, a total score of 555 was obtained, with an average percentage of 90.3%. “Sopanspeak” is categorized as “Very Suitable” for use as a medium for teaching polite language to early childhood. The children appeared enthusiastic during the learning activities and were able to complete various activities within the application. Furthermore, teachers observed that the children were more active in using polite expressions during the learning process. This indicates that the application is capable of creating an engaging learning experience while supporting the habit of using polite language.

3.1.5. Product Evaluation

The evaluation phase was conducted to determine the suitability of the “Sopanspeak” application based on validation results from material experts, media experts, and user trials. Formative evaluation was conducted throughout the development process to ensure that the resulting product aligns with the learning objectives, the characteristics of early childhood, and the principles of interactive multimedia development. The material expert's assessment focused on the appropriateness of the content, language, and the relevance of the material to indicators of politeness, while the media expert's assessment covered the application's appearance, navigation, interactivity, and ease of use. The evaluation results indicated that the “Sopanspeak” application received a very good rating for both the material and media aspects. However, the validator provided several suggestions for improvements. These suggestions included refining the visual appearance, adjusting the size and position of the navigation buttons, and revising several sections of the material to make it more accessible to children.

3.2. ANALYSIS

The research results show that the interactive multimedia application “Sopanspeak” was categorized as highly appropriate based on validation by material experts, media experts, and user trials. This high level of appropriateness indicates that the material, display, and learning activities contained in the application align with the developmental characteristics of early childhood. Furthermore, implementation results indicate that children responded positively and enthusiastically while using the application. This indicates that the use of engaging and interactive media can increase children's engagement in the learning process compared to conventional media, which have been more commonly used in teaching polite language. The positive evaluation results of the “Sopanspeak” application may be associated with the integration of various multimedia elements such as text, images, audio, animation, video, digital stories, educational songs, educational games, and interactive puzzles into a single learning platform (Mayer, 2024). This integration aligns with Mayer's Cognitive Theory of Multimedia Learning, which states that students more easily understand information when presented through a combination of visual and verbal channels. Through diverse presentations, children gain a more engaging learning experience, which can help improve attention, understanding, and retention of the material learned (Mayer, 2009).

The material presented in the “Sopanspeak” application introduces children to the use of polite expressions such as “please,” “sorry,” “excuse me,” and “thank you,” as well as to behaviors that are commonly considered appropriate in everyday social interactions (Zahra, 2025). Through the stories, videos, and games contained in the app, children learn to recognize good behavior, respect others, and understand the importance of politeness in interactions. This aligns with the theory of moral development, which explains that early childhood begins to understand social values and rules through experience, familiarity, and interaction with their surroundings (Safitri & M. Hajar Dewantoro, 2025). The use of the expressions “please,” “sorry,” “excuse me,” and “thank you” in the “Sopanspeak” app also reflects the application of the principle of linguistic politeness. According to Leech, linguistic politeness serves to maintain harmonious social relationships between speakers, while Brown and Levinson explain politeness as a communication strategy used to respect and protect the feelings of the interlocutor (Leech, 1983). Therefore, getting used to using polite expressions from an early age is an important foundation in the development of communication skills as well as the formation of children's social character (Rahmawati & Luthfatun Nisa', 2024).

The findings of this study support previous research that suggests that habituation, role modeling, and the use of engaging learning media can help instill polite behavior in early childhood (Zalmi & Mahyuddin, 2021). However, previous research generally used conventional approaches or simple media. Unlike these studies, “Sopanspeak” was developed as an interactive multimedia application specifically designed for learning polite language. The novelty of this research lies in the integration of digital storybooks, educational songs, learning videos, educational games, interactive puzzles, and a reward system in one application. This allows children not only to gain knowledge about polite language but also to observe, practice, and strengthen their understanding through various fun learning activities. Thus, “Sopanspeak” can be an innovative learning medium relevant to the needs of early childhood and current developments in educational technology.

4. LIMITATION

This study has several limitations. The product trial was conducted at a single institution with only 15 children, limiting the generalizability of the findings. The research also focused on feasibility testing rather than measuring the app's effectiveness in improving children's language politeness, so causal claims cannot be made. Additionally, the application is only compatible with specific devices, and its content remains limited, with few story titles and interactive activities available. Finally, the trial duration was relatively short, preventing observation of long-term effects. These limitations suggest that future research should involve larger and more diverse samples, experimental designs, and expanded content and platform accessibility.

5. CONCLUSION

The interactive multimedia application “Sopanspeak” was successfully developed as a learning medium to instill polite language in early childhood. Based on validation by material experts (95.8%), media experts (94%), and product trials with 15 children (90.3%), the application was consistently categorized as “Very Feasible” across all assessment aspects. These results indicate that “Sopanspeak” meets the criteria for an effective and engaging learning medium, both in terms of content accuracy and media quality. “Sopanspeak” offers a distinctive learning experience by integrating digital stories, educational songs, learning videos, educational games, interactive puzzles, and a reward system into a single, cohesive platform. This integration allows children to learn, practice, and receive immediate feedback through various interactive activities, making the learning process more engaging and meaningful. The application also provides a concrete and contextual learning experience that supports the internalization of polite language values, which is particularly important for early childhood development.

The findings of this study contribute to the field of early childhood education by providing an innovative digital solution for teaching language politeness, an area that has received limited attention in the development of interactive multimedia. Unlike conventional approaches that rely heavily on habituation and storytelling, “Sopanspeak” offers a more structured and varied learning experience through its multiple features. Teachers can utilize this application as a supplementary tool to reinforce polite language habituation in the classroom, while parents can use it to support character development at home. However, the findings should be interpreted with caution due to several limitations, including the small sample size (15 children from a single institution), the focus on feasibility rather than effectiveness, and the limited content and platform compatibility. Therefore, future research is recommended to examine the application's effectiveness in improving children's polite language skills using experimental designs with larger and more diverse samples. Further development is also needed to expand the application's content, add more interactive features, and enhance its accessibility across multiple platforms to reach a wider audience.

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