Validity of Speaking Skills Teaching Materials for Persuasive Speech Texts Based on the Deep Learning Approach Assisted by Mobile Learning

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Abstract
Digital transformation in education demands an interactive, flexible learning system focused on developing competencies in the era of Society 5.0. However, preliminary research indicates that current teaching materials do not yet accommodate students' needs in learning to speak. The speech text material contained in the teaching materials has not integrated the Deep Learning approach and the use of technology is still very limited, resulting in minimal participation and boring learning. This results in the material being presented textually and underutilizing visual aspects, resulting in a lack of in-depth understanding of the material and students' speaking competence not being achieved. This study aims to test the validity of teaching materials for persuasive speech text speaking skills based on the Deep Learning approach assisted by Mobile Learning. This study uses the Sugiyono development model with seven research stages. The validation process was carried out by media experts, material experts, and teachers using a validation sheet as an instrument. The results showed that the media expert's validation obtained a score of 89.58%, the material expert obtained a score of 100%, and the teacher obtained a score of 97.92%, so that the overall average score was 95.83% with a very valid category. Thus, this teaching material is declared very valid for use in teaching speaking skills on persuasive speech text material in class VIII of junior high school and can be continued to the implementation stage to test its effectiveness and impact on student learning outcomes.

1. Introduction

Teaching materials are one of the supporting factors for the success of Indonesian language learning in the Independent Curriculum (Umiyati & Anhar, 2024). In implementing this curriculum, teachers are expected to facilitate learning with teaching materials that are aligned with students' needs and help in encouraging the achievement of the expected competencies (Imansyah, Rayhan & Jainab, 2024). By using teaching materials that assist learning, it is hoped that learning objectives can be achieved effectively. Such teaching materials allow for low costs yet provide numerous sustainable benefits.

However, in reality, such teaching materials are rarely available in the field, especially speaking skills teaching materials based on the Deep Learning approach and assisted by Mobile Learning. In fact, such teaching materials support the learning process in depth, not limited to understanding the theory but also to the stage of applying the theory in real-life contexts (Amo-Asante, Arthur & Bonyah, 2025; Hajian, 2019; Herrington, Reeves, Oliver, 2013). Moreover, by combining Mobile Learning as an aid, it is a new way of teaching speaking skills that reflects learning in the era of society 5.0. Moreover, students born in this era belong to a generation that is closer to technology than previous generations, as technology is now an inseparable part of children's lives (Ernalida, Oktarina, & Ansori, 2023). This aligns with the view expressed by Ozdamli and Cavus (2011) that mobile phones play a crucial role in the lives of young people. This development also encourages the use of mobile technology for educational purposes. Mobile learning fosters interaction and collaboration in the learning process by boosting students' interest in learning (Dahri, 2023). Based on the description above, this study offers a novelty by utilizing teaching materials for persuasive speech texts based on the Deep Learning approach assisted by Mobile Learning for junior high school students to improve their speaking skills. Speaking skills are the ability to pronounce articulation sounds to appreciate, express, and convey ideas, feelings, and thoughts (Lumbantoruan, Sihombing, Ginting & Melisa, 2023).

One of the problems that frequently arises in teaching speaking skills is a lack of self-confidence and students' lack of skill in applying speaking skills techniques effectively. This is in line with Siti and Ain, (2024). In their research, most students experience difficulties in learning to speak due to a fear of language errors, such as grammar, vocabulary, pronunciation, and intonation. Based on observations, this is due to limited materials

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on persuasive speech texts and the teaching materials used are still conventional. Furthermore, speaking skills are skills that need to be honed through repeated practice (Yong, Saccomandi, Chin, Lutzow, DuCette, Bueno, 2024). This is evidence that the teaching materials for speaking skills currently used by teachers still do not accommodate learning in the era of society 5.0.

Mobile learning was chosen to assist in developing speaking skills teaching materials because it can be used by students anywhere and anytime, thus directly impacting the improvement of students' speaking skills and proficiency. This is supported by the fact that mobile learning, or m-learning, has become an integral part of a more modern and responsive educational experience (Najjar & Oktasari, 2023) because Mobile Learning can support independent learning with flexibility and portability in supporting access and understanding of content or materials (Elmi et al., 2023). Strengthened by Zulaeha, Hasanudin and Pristiwati (2023) which reveals that Mobile Learning utilized in the development of teaching materials has a significant impact on the effectiveness of the learning process, providing a more meaningful learning experience. This is emphasized by Kardika, Rokhman & Pristiwati (2023) that students who engage in learning with mobile or digital devices tend to be more active.

In line with these needs, to stabilize learning in schools, the Ministry of Elementary and Secondary Education has issued several rules and regulations, as outlined in Regulation of the Minister of Elementary and Secondary Education of the Republic of Indonesia Number 13 of 2025, which emphasizes the importance of deep learning and the use of technology in learning. The success of learning outcomes is determined by the teacher's ability to manage instruction in depth (Pristiwati et al., 2024). The three key components of deep learning are meaningful learning, mindful learning, and joyful learning (Dewi et al., 2025). These three principles will be integrated into all learning activities contained in the teaching materials. Therefore, this study aims to: 1) design teaching materials for persuasive speech text skills based on the Deep Learning approach assisted by Mobile Learning for junior high school students, and 2) determine the level of validity of these teaching materials.

2. Method

The research approach used in this study is R&D (research and development), which aims to produce teaching materials for persuasive speech text skills based on the Deep Learning approach assisted by Mobile Learning. The development model used is the development model (Sugiyono, 2018), which includes potential and problems, data collection, product design, design validation, design revision, initial trials, product revision, usage trials, product revision, and mass production. However, this research is limited to the design validation stage with a focus on product validity testing.

The potential and problems stage includes curriculum analysis, analysis of teaching materials and other learning media. The data collection stage includes analyzing the need for speaking skills teaching materials that support mindful, meaningful, and joyful learning, both from the perspectives of students and teachers. The product design stage involves designing and developing the material structure, learning objectives, activities, and evaluations based on a Deep Learning approach supported by Mobile Learning, resulting in a final product.

After going through the above steps, the research results will be obtained using a validity sheet by three competent validators: two Indonesian language education lecturers and one Indonesian language teacher. The research data was collected using a validation sheet instrument. This instrument was used by the researchers to collect validity results in the form of scores and suggestions from the validators. All scores obtained in the validation sheet were calculated based on a Likert scale, with reference to (Ulandari, 2021) as presented in the Table 1.

Table 1. Categories and Scores of Likert Scale Items Validity

Score	Category
4	Very good
3	Good
2	Fair enough
1	Not good

Next, after obtaining the scores for each criterion, they are divided by the maximum score for each criterion and multiplied by 100%. The collected data is then calculated using the following Likert scale formula.

$$V = \frac{Item\ score\ obtained}{Maximum\ score} \times 100\% \quad (1)$$

The percentage results obtained will be interpreted according to the validity criteria that refer to Ilahi, Mufit,, Hidayati, and Afrizon (2021) (see Table 2).

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Table 2. Product Validity Category

Percentage of Achievement	Interpretation
81% - 100%	Very Valid
61% - 80%	Valid
41% - 60%	Quite Valid
21% - 40%	Less valid
0% - 20%	Not valid

3. Results and Discussion

3.1. Results

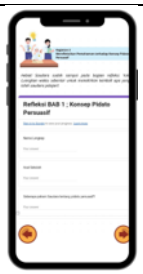
3.1.1. Design and Features of Persuasive Speaking Skills Teaching Materials Using a Deep Learning Approach Assisted by Mobile Learning

The validity of the teaching materials for persuasive speech text speaking skills based on the Deep Learning approach assisted by Mobile Learning has the output results of the teaching materials presented in Table 3.

Table 3. Output Results of Deep Learning-Based Persuasive Speech Teaching Materials Assisted by Mobile Learning

No	Development Results	Description
1		Front Page The front page of this product displays information about the title, the content of the learning materials, and the target audience for the material presented.
2		Main Menu Page The main menu page contains menus, such as reading, materials, exercises, evaluations, and bibliography. The buttons in the main menu take advantage *of shortcuts* so that they can be accessed quickly. This product is also accompanied by navigation buttons, such as *home, next,* and *back.*
3		Main Menu Page The main menu page contains menus such as introduction, materials, exercises, evaluation, and bibliography. The buttons in the main menu utilize shortcuts for quick access. This product also includes navigation buttons such as home, next, and back.
4		Materials Page The materials page in the teaching materials contains detailed descriptions of persuasive speech texts. The material is also supplemented with instructional videos and illustrations as needed by students.

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No	Development Results	Description
5		Practice Pages The practice pages in this jar contain both conceptual and practical exercises. The conceptual exercises are based on theory in the form of games, and the practical exercises relate to learning speaking skills.
6		Learning Evaluation Page The learning evaluation page contains an assessment of the persuasive speech practice, along with practice instructions and an assessment rubric.
7		Learning Reflection Page The learning reflection page in the teaching materials is used to identify students' strengths and weaknesses in learning persuasive speech skills.
8		Glossary and Bibliography Page This page contains a glossary of important terms and a bibliography of references used in the teaching materials.

3.1.2. Validity Test Results of Teaching Materials for Speaking Skills in Persuasive Speech Texts Based on the Deep Learning Approach Assisted by Mobile Learning

The validity of the product of persuasive speaking skills teaching materials based on the Deep Learning approach assisted by Mobile Learning was validated by three expert validators. Table 4 present the description of the validation by media, material, and user experts.

Table 4. Media Expert Assessment

Assessment Aspects	Criteria	Score
Media Aspects	Initial view of teaching materials	3
	The quiz feature is in the form of a simple game that is easy to operate. The suitability of the teaching materials with the standards of teaching materials assisted by Mobile Learning.	3
	Ease of access to teaching materials	4
	Easy to operate touch buttons	4
	Easy page switching	4
	Easy user manuals	3
	Convenient video playback	4
	Maintainable teaching materials	4
	Teaching materials support independent student learning	4
	Teaching materials provide opportunities for active student learning	4
	Teaching materials support the implementation of the Deep Learning approach	4
	Activities in the teaching materials encourage students to practice speaking skills	3
	Teaching materials provide a more meaningful learning experience	4

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Assessment Aspects	Criteria	Score
	Teaching materials help students learn persuasive speaking material more easily	4
Material aspects	The suitability of the material for the persuasive speech text concept (definition, purpose, structure)	4
	The suitability of the material for the persuasive speech text practice (techniques and methods)	4
	The suitability of the material for the learning outcomes	4
	The suitability of the exercises and examples for the material and student development	4
Presentation aspects	Suitability of presentation with the principles of attractiveness, creativity and innovation in teaching materials	4
Linguistic aspects	Appropriate language style in teaching materials	4
	Appropriateness of diction and punctuation in teaching materials	4
Graphic aspects	Appropriate use of illustrations	3
	Appropriate type and size of letters	3
	Total Score	86

Based on the scores obtained in Table 4, the final value given by the media validator can be seen through the following calculation.

$$V = \frac{Item\ score\ obtained}{Maximum\ score} \times 100\%$$

$$V = \frac{86}{96} \times 100\%$$

$$V = 89.58\%$$

Based on the results of the media expert assessment of the teaching materials for persuasive speech text speaking skills based on the Deep Learning approach assisted by Mobile Learning, the assessment percentage was 89.58% or very valid. The percentage of achievement obtained indicates that the teaching materials developed are in accordance with the indicators in each aspect. This proves that in general, the quality of the display, navigation, and ease of use have understood the principles of developing effective teaching materials, especially in supporting optimal user engagement. Furthermore, the integration of Mobile Learning in teaching materials can strengthen learning flexibility, allowing students to learn anytime and anywhere. This is in line with the characteristics of learning in the era of science 5.0. Viewed from the approach perspective, the application of Deep Learning is reflected in the presentation of learning activities that not only encourage basic understanding but also encourage students to think contextually and critically.

The following relates to the description of the validation results by the material expert lecturers which are presented in the Table 5.

Table 5. Subject Matter Expert Assessment

Assessment Aspect	Criteria	Score
Material Aspects	Suitability of material or content to student needs	4
	Suitability of conceptual material (structure, objectives, definitions) to the theory used	4
	Suitability of practical material (techniques and methods) to the theory used	4
	Suitability of material to learning outcomes	4
	Material does not contain elements of SARA (ethnicity, religion, race, and intergroup relations)	4
	Suitability of content dimensions of graduate profiles	4
	Suitability of examples to student needs	4
	Suitability of material to exercises in teaching materials	4
	Suitability of material to the Deep Learning approach	4
	Suitability of reflection to learning materials	4
	Suitability of learning evaluations	4
	Material or content is in line with scientific developments	4
	Material or content is coherent, systematic, and easy to understand	4
	Material or content uses reasoning patterns that are familiar to students	4
	Adequacy of persuasive speech text material in teaching materials	4
Presentation aspects	Suitability of the form of presentation with the principles of attractiveness, creativity and innovation in teaching materials	4
	The presentation of teaching materials helps students learn independently	4
	Ease of use of teaching materials	4
	Appropriate presentation of activity instructions	4
Linguistic aspects	Easy-to-understand language style	4
	Appropriate use of diction	4

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Assessment Aspect	Criteria	Score
	Appropriate punctuation	4
Graphic aspects	The suitability of the use of illustrations to the content.	4
	The suitability of the selection of font type and size, as well as the selection of colors.	4
	Total score	96

Based on the scores obtained in Table 5, the final value given by the material validator can be seen through the following calculation.

$$V = \frac{Item\ score\ obtained}{Maximum\ score} \times 100\%$$

$$V = \frac{96}{96} \times 100\%$$

$$V = 100\%$$

Based on the validation results by subject matter experts on the material, presentation, language, and graphics aspects, the Deep Learning-assisted Mobile Learning-based persuasive speaking skills teaching material achieved a maximum score of 100% across all indicators, indicating it is highly valid. This demonstrates that the teaching material meets comprehensive eligibility criteria, both in terms of its content's suitability to learning outcomes and its suitability to the needs of the field, in this case, students. Therefore, this teaching material has strong potential to support the development of speaking skills effectively, adaptively, and contextually.

Table 6 presents the validation results by users (Indonesian language teachers).

Table 6. User Assessment (Indonesian Language Teachers)

Assessment Aspects	Criteria	Score
Material Aspects	Suitability of the material or content to student needs	4
	Suitability of the material to the theories used in the teaching materials	3
	Suitability of the material to learning outcomes	4
	Material does not contain elements of SARA (ethnicity, religion, race, and intergroup relations)	4
	Suitability of the content to the graduate profile dimensions	3
	Suitability of examples to student needs	4
	Suitability of the material to the Deep Learning approach	4
	Ease of material delivery using Mobile Learning	4
	Adequacy of material in teaching materials	4
	Material or content is in line with scientific developments	4
Presentation aspects	The suitability of the presentation format to the principles of attractiveness, creativity, and innovation in teaching materials.	4
	The suitability of the material presentation to the Deep Learning approach.	4
	The ease of use of teaching materials.	4
	The suitability of the presentation of activity instructions.	4
Linguistic aspects	Easy-to-understand style	4
	Appropriate use of diction	4
	Appropriate punctuation	4
	Communicative language	4
	Conformity to standard word writing	4
Graphic Aspects	Appropriateness of Illustration Use with Content	4
	Appropriateness of Font Type, Size, and Color Selection	4
	Appropriateness of Cover Design	4
	Appropriateness of Color Combination	4
	Appropriateness of Cover Image with Content	4
	Total Score	94

Based on the scores obtained in Table 6, the final value given by the material validator can be seen through the following calculation.

$$V = \frac{Item\ score\ obtained}{Maximum\ score} \times 100\%$$

$$V = \frac{94}{96} \times 100\%$$

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$V = 97.92\%$

Based on the validation results, the Deep Learning-assisted Mobile Learning-based persuasive speech text teaching material achieved a 97.92% rating, or highly valid. These results indicate that this teaching material generally meets the eligibility criteria in terms of content suitability to learning needs and outcomes, theoretical integration, relevance to scientific developments, and attractive design.

Furthermore, based on the assessment conducted by three experts in their respective fields, an overall average validation result was obtained (see Table 7). The obtained score indicates that the developed teaching materials meet the criteria within the specified range. The following is the final score obtained by the experts for the teaching materials for persuasive speech text skills based on the Deep Learning approach assisted by Mobile Learning.

Table 7. Summary of Expert

No	Expert assessment	Mark	Criteria
1	Media expert lecturer	89.58%	Very Valid
2	Material expert lecturer	100%	Very Valid
3	User expert (Teacher)	97.92%	Very Valid
	Average	95.83%	Very Valid

3.2. Discussion

Teaching materials play a crucial role in supporting the success of the learning process because they serve as a guide for both students and teachers in directing all learning activities, as a learning resource, and as a tool for assessing student achievement and mastery of competencies. Teaching materials that are systematically designed and aligned with needs will assist teachers in optimally applying the demands of the applicable curriculum. This aligns with the opinion expressed by Nasution et al. (2024) that teaching materials are a set of learning materials or substance (teaching materials) designed to support the learning process to be more effective and efficient.

The validity test results, with an average value of 95.83% (very valid), indicate that the teaching materials for persuasive speech texts based on the Deep Learning approach with the assistance of Mobile Learning have met the eligibility criteria in terms of content or material, presentation, language, and graphics. This aligns with Vaziria and Hermawan (2022) that determining the suitability of teaching materials requires attention to content, presentation, language, and graphics. Validity in the material aspect indicates that the teaching materials align with the learning outcomes of speaking skills phase D, learning objectives, and the characteristics and needs of eighth-grade junior high school students. The persuasive speech text material presented is not merely conceptual, but oriented toward practical and applicable speaking skills, thus supporting the implementation of in-depth learning.

The combination of Deep Learning and Mobile Learning approaches supports the creation of meaningful, student-centered, and enjoyable learning, especially for persuasive speech texts. The Deep Learning approach not only introduces the concept of persuasive speech skills but also understands how to relate it to their environment contextually. This aligns with the concept of the Deep Learning approach, which emphasizes deeper conceptual understanding, critical reflection, and the integration of more meaningful learning experiences, so that material is not simply memorized but also applied in real-world contexts (Hatima, 2025).

With these teaching materials, content is presented in an integrated manner through images, text, videos, and interactive links in a digital display. By utilizing the self-navigation feature, students can explore the material according to their needs. This supports Suryati and Jalinus (2023) that state the implementation of the Independent Curriculum, accompanied by the use of technology, has been shown to increase student learning independence through more flexible and adaptive learning. Overall, the validity test results indicate that the creation of teaching materials for persuasive speech texts based on the Deep Learning approach, assisted by Mobile Learning, is highly valid and suitable for use in teaching persuasive speech texts in grade VIII junior high school.

3.3. Implications

The results of this study provide theoretical and practical implications for the development of speaking skills teaching materials at the junior high school level. Theoretically, this research strengthens the study of the integration of the Deep Learning approach with Mobile Learning in the development of Indonesian language teaching materials focused on persuasive speech texts for speaking skills. The very high validity findings indicate that deep learning principles can be accommodated through contextual, reflective, and application-oriented presentation of materials that focus on speaking skills in real-life situations. Furthermore, the use of Mobile Learning expands students' learning access through flexible presentation and the ability to study independently.

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Practically, the developed teaching materials can be an alternative learning resource for Indonesian language teachers in teaching persuasive speech texts in eighth-grade junior high schools. The systematic structure of the materials, the use of visual and video media, and digital navigation features enable teachers to implement more interactive and student-centered learning. For students, these teaching materials have the potential to support independent learning because they can be accessed anytime and anywhere according to their individual learning needs.

However, the implications obtained in this study are still limited to the aspect of product feasibility based on expert validation results. Therefore, further research is needed to test the practicality and effectiveness of teaching materials in direct learning so that its influence on improving students' speaking skills can be known.

3.4. Limitations

Developing teaching materials for persuasive speech texts based on a Deep Learning approach assisted by Mobile Learning is considered crucial for supporting the improvement of students' persuasive speech skills. To ensure a more focused research and optimal findings, the scope of the study was limited to several aspects. First, the development of the teaching materials was adapted to the needs of the applicable curriculum, focusing on persuasive speech material for eighth-grade junior high school students (mid-Phase D). Second, the Graduate Profile Dimensions integrated into the teaching materials were limited to the dimensions of citizenship, creativity, and communication, as they were deemed relevant to the characteristics of persuasive speech texts and facilitated students' ability to relate the material to their surrounding context. Third, this development research was conducted up to the product validation stage, which included design, development, and validation by experts. This limitation was imposed because the primary objective of the research was to produce teaching materials that were valid and suitable for use based on expert assessment. Therefore, this study focused on product validity testing as a basis for the feasibility of the teaching materials before their wider implementation. The resulting product is a teaching material for persuasive speech text speaking skills based on the Deep Learning approach assisted by Mobile Learning which is expected to support the learning process and optimize the speaking competence of class VIII junior high school students.

4. Conclusion

Based on the research findings, it can be concluded that the teaching materials for persuasive speech text speaking skills based on the Deep Learning approach assisted by Mobile Learning for grade VIII junior high school students have been successfully developed through the Sugiyono development model up to the design validation stage. The validation results involving material experts, media experts, and users (teachers) show that the developed teaching materials obtained a validity score of 95.83% with a very valid category, so they are suitable for use as a support for learning persuasive speech text speaking skills. In addition to meeting the eligibility criteria, the developed teaching materials also have the potential to support conscious, meaningful, and enjoyable learning in accordance with the characteristics of the Deep Learning approach in the Independent Curriculum, because they encourage students to understand the material contextually and relevant to everyday life.

Author Contributions

All authors contributed equally to this paper. All authors have read and approved the final manuscript.

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/ or publication of this article.

Data Availability

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

Declaration on AI Use

The authors declare that no artificial intelligence (AI) or AI-assisted tools were used in the preparation of this manuscript.

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