The Feasibility of WriteMI Application as Digital Basic Writing Learning Material: Expert Judgements

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***Abstract*—This research aimed to determine the feasibility of digital basic writing teaching materials based on multiple intelligences approach in the form of an Android application called WriteMI. This feasibility test was conducted by two types of expertise: material and media. The media experts assessed three indicators: appearance, communication, and design. Meanwhile, the material experts assessed six indicators: foundation, approach, linguistic, skills, topic and organization. This was a quantitative study with several formulas to count the feasibility test from both expertises. The experts carried out assessments through questionnaires based on their respective indicators using a modified Likert scale consisting of four options, namely very feasible, feasible, unfeasible and very unfeasible. From the media expert feasibility test, it was known that the total average is 85.6% with a very feasible category, while based on the feasibility of material experts, this application obtained feasibility validation with a total average of 93.2% with also a very feasible category. From the findings, it was known that WriteMi application was very feasible for university students. This application has met a qualified standart to be used massively. This study hopefully can enrich for relevant field especially in education and basic writing learning material.**

***Keywords*—feasibility, WriteMI, digital, basic writing, learning material, expert judgements**

I. Introduction

WriteMI, an Android application, implements digital basic writing learning materials based on the multiple intelligences approach. Undergraduate English education students utilize this app in their introductory basic writing course. This foundational course covers fundamental academic writing skills, including mechanics, sentence structure, and paragraph construction [1–4].

The development of this Android-based digital learning resource addresses a significant gap: a lack of comparable, high-quality basic writing materials that incorporate multiple intelligences theory. This approach acknowledges the diverse learning styles and potentials of individual students, fostering the development of their unique strengths. The readily accessible nature of digital resources further supports the value of this learning tool in higher education [5].

The feasibility of product development is carried out through an assessment process on the instrument in the form of a questionnaire that has been prepared. In accordance with the title of this research, the purpose of writing this article is to try to determine whether this application is feasible or not for mass use for college students, especially for English language education study programs.

The physical structure chart of the digital basic writing teaching material model based on the multiple intelligences approach in the form of the WriteMI application is as shown in Fig. 1:

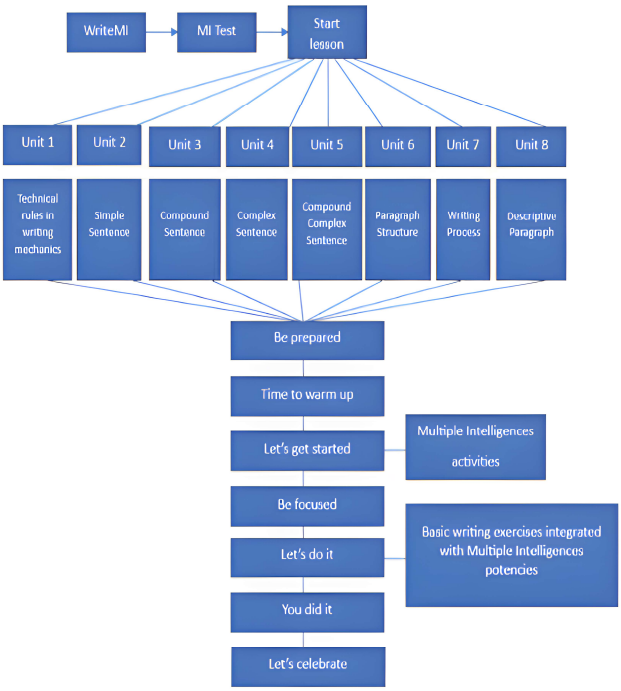

Fig. 1. Physical structure chart of WriteMI application.

From this figure, it can be seen that before proceeding to start the lesson, the students, as its users, must fill in the Multiple Intelligence Test (MI Test) to identify their strengths, which are used as the foundational knowledge for using this application, especially in conducting Multiple Intelligences Activities in the "Let's Get Started" part, and in performing basic writing exercises in the "Let's Do It" part, which are integrated with the multiple intelligence potentials of the students.

The development of a digital basic writing teaching material model based on the multiple intelligences approach in the form of the WriteMI application uses the Jensen model, which involves seven stages in designing this teaching material. The seven stages are pre-exposure, preparation, initiation and acquisition, elaboration, incubation and memory entry, verification and checking of beliefs, and celebration and integration [6–8].

The first stage is pre-exposure, called 'Be Prepared'. This phase provides a review for the brain about new learning before really digging deeper. Pre-exposure helps the brain build a better conceptual map [9–12]. The second stage is preparation, called 'Time to Warm Up'. This phase aims to create curiosity or pleasure and provide motivation regarding

the importance of studying the material to be taught in order to achieve the expected goals [13–15]. The third stage is initiation and acquisition, called 'Let's Get Started'. This phase involves providing learning content that contains initial facts rich in ideas, details, complexity, and meaning, followed by curiosity and exploration to find the meaning of the concept being studied through personal inquiry with the guidance of a lecturer [16–19]. The fourth stage is elaboration, called 'Be Focused'. This phase provides an opportunity for students to engage in group discussions to understand, analyze, and present arguments based on the results of the discussion in relation to the material [20–22]. The fifth stage is incubation and memory entry, called "Let's Do It". This phase emphasizes the importance of rest time and time for repetition [23–26]. The sixth stage is verification and checking of beliefs, called 'You Did It'. This phase involves an activity to assess students' understanding of the concepts related to the subject matter. It includes checking the results of the exercises completed by students and giving them the opportunity to write their answers on the board to be corrected together as a form of evaluation of the concepts they have learned [27–29]. The seventh stage is celebration and integration, called 'Let's Celebrate'. In the celebration phase, it is very important to involve emotions. This phase provides a stimulus regarding the celebration of the success that students have achieved and emphasizes the importance of learning meaningful [30–32].

Here is the link to download the WriteMI application, which is a manifestation of the digital basic writing teaching material model based on the multiple intelligences approach discussed in this study:

https://play.google.com/store/apps/details?id=com.spectacreative.writemi.

This link is already available in the Play Store and can be downloaded by any users, especially university students and lecturers who want to use this application to understand basic writing materials. The application is easy to use and teenager-friendly. Every student will enjoy using this application as their digital basic writing teaching material. To ensure the quality of the product produced, the WriteMI application is tested through several feasibility testing mechanisms by experts according to their expertise. The chosen expertise in this case includes media experts and material experts. Each expert conducts a feasibility test based on indicators from the designed questionnaire. The results of this test provide a description of how to validate the usage of this application for public use from two points of expertise. These feasibility tests on media and material expertise are able to measure the eligibility of this digital basic writing teaching material. For media expertise, the questionnaire used consists of 25 statement items grouped into 3 sub-sections, namely: appearance, communication, and design. The appearance sub-section consists of seven statement items, while the communication sub-section consists of nine statement items, and the design sub-section consists of nine statement items.

Media expertise discusses whether the appearance of the WriteMI application meets the required standards and also discusses whether visual and literal communication has been well structured and illustrated. In addition, this expertise also discusses whether the design of the WriteMI application is attractive and has a positive effect on students in learning. While material expertise contains matters related to the basis for developing material in the application whether it is good and appropriate. Then this expertise also discusses whether the approach used has been implemented clearly, in addition to discussing whether the grammar used is effective and whether the skills discussed in this application are well illustrated, then this expertise also discusses whether the topic of the material chosen in delivering the material is appropriate and finally whether the organization of the WriteMI application is good and neatly arranged.

II. Literature Review

Digital teaching materials represent an innovation in learning that is more modern, acceptable, and in accordance with the developments and conditions of today's society. This is also related to learning that is implemented through hybrid learning, which combines offline and online learning [33, 34]. In addition, digital teaching materials, especially in the form of Android applications, are expected to attract the attention and interest of students, motivating them to study and prepare themselves before learning in the classroom and helping them learn independently [35], Improve student competence and lighten the burden on students by eliminating the need to carry materials in printed form [36, 37]. A study on the use of digital resources in the classroom and their planning in classroom management has been conducted by several researchers, particularly regarding the recent rapid technological changes that have affected the way teachers and students write and communicate using digital tools in their classrooms [38]. There is also a study that develops an adaptive learning system which implements Gardner's Multiple Intelligences. The results of this study support adaptation and strengthen individual learning. Existing learning systems that are provided with the same instructional content can show significant effects through specific considerations for individual learners [39].

The advantages of digital technology in the form of Android applications can be applied in the field of education as a supporting medium for learning, where research products in the form of applications can be installed and downloaded via the Play Store. Android is a mobile device operating system whose development is controlled by Google [40, 41]. Android provides a platform for developers to create desired applications. Unlike conventional mobile phones, smartphones are equipped with an extensive operating system and numerous additional applications that allow users to engage with various voice and data services [20, 42].

Smartphones are powerful tools with extensive sensor capabilities that can provide useful information for research or everyday life applications [16]. Smartphones have become essential devices used to support many aspects of life. No longer constrained by space and time, advanced technology has changed the way e-learning and mobile learning systems operate [43]. In this study, digital teaching materials in the form of an Android application that can be accessed using a smartphone are referred to as the WriteMI application, which can be downloaded via the Play Store. This application was developed as a digital basic writing teaching material based on a multiple intelligences approach that facilitates students in improving their understanding of basic writing by

considering the potential and dominant multiple intelligences as a means of mastering the learning presented in the teaching materials [44].

To assess the feasibility of the WriteMI Android-based digital teaching material, expert validation was sought from media and instructional design specialists. Feasibility testing analyzes a project's viability and potential for success [45, 46]. The primary goal is to evaluate various aspects to ensure a worthwhile investment that achieves its objectives. A feasibility study assesses the project's achievability and expected benefits [47]. A feasibility test is defined as a process that evaluates various aspects of a project to ensure that it can be achieved and will provide the expected benefits. The WriteMI feasibility test focused on key aspects crucial for effective and relevant teaching materials that align with student needs and learning objectives: material and media design [24]. Each of these aspects will be validated by experts in their fields. Material experts validated the aspects of content foundation, pedagogical approach, linguistic content, skill development, topic relevance, and organizational structure. Media experts evaluated aspects of visual appeal, communication clarity, and overall design. All validation was conducted using questionnaires tailored to the specific needs of the context.

Current technological developments have introduced many types of applications aimed at enhancing students' cognitive performance, particularly in the form of popular Android applications. Students often demonstrate less activity and creativity in basic writing classes due to a lack of adaptive learning media that are teen-friendly. Additionally, each student in the class possesses varying potentials for dominant multiple intelligences, which influence how they absorb lessons. Therefore, the availability of digital teaching materials in the form of Android applications designed according to students' multiple intelligences is essential as an innovation in today's educational landscape. This approach can transform students who were initially disinterested in the subject matter into enthusiastic and more active learners, aligned with the development and tendencies of their respective intelligence potentials [48].

III. Materials and Methods

This research is a quantitative study in which the results are obtained through data from questionnaires filled out by experts and processed using a specific formula [49]. The media expertise questionnaire was completed by three media experts, while the material expertise questionnaire was filled out by three material experts. The media experts selected had backgrounds in visual communication design, IT, and communication, whereas the material experts came from backgrounds in English, learning, and education [50].

$$P = \frac{\sum x}{\sum x1} \times 100\%$$

The results of the feasibility percentage will then be analyzed using a specific formula:

Description:

P: Percentage of eligibility

$\sum x$: Total score obtained from the questionnaire

$\sum x1$: Total score ideal score (maximum)

With the product development eligibility criteria as shown in Table 1:

Table 1. Eligibility criteria

Percentage (%)	Eligibility Criteria
80─100	Very feasible
66─79	Feasible
56─65	Quite feasible
40─55	Less feasible
30─39	Not feasible

These percentage divisions distinguish the level of eligibility of the WriteMI application based on the results of the feasibility test from two areas of expertise: media and material. Meanwhile, the scoring provisions for the product test assessment questionnaire are measured using the following formula:

$$P = \frac{(4 \times \text{answers}) + (3 \times \text{answers}) + (2 \times \text{answers}) + (1 \times \text{answers})}{\text{total number of respondents}} \times 100\%$$

The validation questionnaire for the suitability of each expert was compiled using a modified Likert scale, from which the neutral option was removed, leaving four distinct options based on the level of student needs: very suitable, suitable, not suitable, and very unsuitable. This modified Likert scale is used to categorize the results into two main divisions: worthy and unworthy.

The doubtful option on the Likert scale was removed because it would complicate the calculation of what is feasible and what is not feasible. In other words, the Likert scale was modified to provide clearer research results. Removing the doubtful option, which was deemed unhelpful in distinguishing feasibility, allows experts to provide a more concrete assessment as shown in Table 2:

Table 2. Modified likert scale

Answer Options	Value
Very worthy	4
Worthy	3
Not worthy	2
Very not worthy	1

The results of the questionnaire distribution are then averaged. After the average score is calculated, the classification of the scale categories is formulated as follows:

Minimum score: 1

Maximum score: 4

Scale width: $\frac{4-1}{4} = 0.75$

Then the scale categories are determined as shown in Table 3:

Table 3. Interpretation of the average value of expert feasibility validation

Interval	Criteria
1.00─1.75	Very unworthy
1.76─2.50	Not worthy
2.51─3.25	Worthy
3.26─4.00	Very worthy

IV. Result and Discussion

The results of this study include the validation of the

feasibility of each field of expertise based on predetermined indicators. The media expertise indicators are divided into three subdivisions: appearance, communication, and design. The following are the results of the media experts' eligibility validation.

Table 4. Results of media expert feasibility validation for appearance aspects

A. Appearance	Percentage	Mean	Category
Presentation of material in the product is easy to understand	82.5%	3.3	VE
Writing is clear and easy to read	92.5%	3.7	VE
Products are displayed simply and easily accessible	92.5%	3.7	VE
Types of text and letters in teaching materials are proportional	82.5%	3.3	VE
Spacing, lines and paragraphs in teaching materials are ideal	82.5%	3.3	VE
Font size is proportional	92.5%	3.7	VE
Position of images and videos in teaching materials is appropriate	75%	3	E
Average	85.7%	3.42	VE

Description: VE (Very Eligible), E (Eligible).

Overall, the findings as shown in Table 4 explain that the product appearance aspect was generally regarded as very adequate by the majority of respondents, with a high level of agreement on most of the statements evaluated.

Table 5. Results of validation of the feasibility of media experts for communication aspects

B. Communication	Percentage	Mean	Category
Presentation of material according to CPL and CPMK	82.5%	3.3	VE
Presentation of material according to learning objectives	82.5%	3.3	VE
Initial appearance of teaching materials is attractive and proportional	92.5%	3.7	VE
Page changes from each section are good	75%	3	E
Teaching materials have attractive colors	92.5%	3.7	VE
Instructions on teaching materials are clear	75%	3	E
Application is according to learning needs	92.5%	3.7	VE
Slide transitions are precise	92.5%	3.7	VE
Application can be used offline or online	75%	3	E
Average	84.4%	3.37	VE

Description: VE (Very Eligible), E (Eligible).

As a result, the findings as shown in Table 5 indicate that the communication aspect of this product received a good rating, with the majority of respondents giving a "Very Good" rating on most of the statements evaluated

Table 6. Results of media expert feasibility validation for design aspects

C. Design	Percentage	Mean	Category
Product can be used independently	92.5%	3.7	VE
Attractive design	75%	3	E
Attractive display in the product	75%	3	E
Product easy to operate	100%	4	VE
Illustration in the product is attractive	75%	3	E
Easy operation of teaching materials	82.5%	3.3	VE
Fast application response	92.5%	3.7	VE
Ad-free application	100%	4	VE
Balanced composition of teaching materials	92.5%	3.7	VE
Average	87.2%	3.48	VE

Description: VE (Very Eligible), E (Eligible).

In conclusion, the findings as shown in Table 6 indicate that the product design aspect received a positive assessment, particularly in terms of security and ease of operation. The majority of respondents gave a "Very Eligible" rating for most of the statements evaluated, with an average score of 3.48 and a percentage of 87.2%. Although there were several statements with lower percentages (in the Eligible category), these results still reflect a generally positive view of the product design as a whole.

The following as shown in Table 7 is a recapitulation of the results of the validation of the suitability of media expertise regarding the research output of the digital basic writing teaching material development model based on the multiple intelligences approach:

Table 7. Recapitulation of media expertise eligibility validation

No.	Indicator	Mean	%	Category
1.	Appearance Aspect	3.42	85.7%	VE
2.	Communication Aspect	3.37	84.4%	VE
3.	Design Aspect	3.48	87.2%	VE
Total average		3.42	85.6%	VE

Description: VE (Very Eligible).

The majority of respondents gave a "Very Eligible" rating for each aspect, with a fairly high percentage, indicating good acceptance of the media as shown in Fig. 2. This result can be interpreted as showing that the media has succeeded in meeting the expected criteria and standards and can be considered feasible for use in the context of media expertise. In other words, the material model for basic digital writing based on the multiple intelligences approach is declared very feasible for use. From the results of the feasibility test for media expertise, it can be concluded that the WriteMI application is suitable for public use.

The material expertise indicator consists of six subdivisions: material foundation, approach, language, skills, topic, and organization. The following as shown in Table 8 are the results of the validation of the eligibility of material experts:

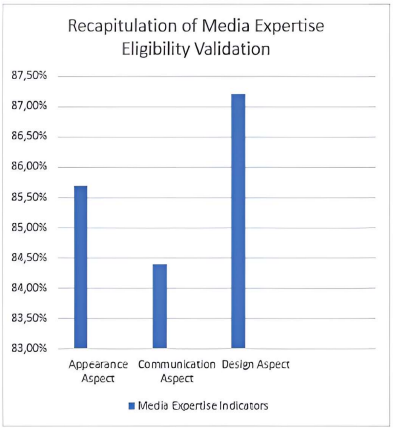

Fig. 2. Recapitulation of media expertise feasibility validation.

Table 8. Results of expert validation of the feasibility of material foundation aspects in developing teaching materials

A.Foundation Aspect in Developing Teaching Materials	%	Mean	Category
Teaching materials are in accordance with the existing curriculum	92.5%	3.7	VE
Teaching materials are utilized to achieve student knowledge competencies	100%	4	VE
Exercises provided are relevant to CPL and CPMK	92.5%	3.7	VE
Learning objectives are conveyed clearly	92.5%	3.7	VE
Contents are in accordance with the syllabus and RPP	92.5%	3.7	VE
Average	94%	3.76	VE

Description: VE (Very Eligible).

Based on the findings, it can be concluded that the foundation for developing these teaching materials received a very good assessment from the respondents. The teaching materials were evaluated as being in accordance with the curriculum, effective in achieving student knowledge competencies, relevant to the CPL (Graduate Learning Outcomes) and CPMK (Course Learning Outcomes), delivered clearly, and aligned with the syllabus and RPP (Learning Implementation Plan). The overall average percentage and mean demonstrated very good quality.

As a result, it can be stated that the Multiple Intelligence approach is effectively integrated into the teaching materials, receiving a high level of agreement from respondents. This approach is clearly illustrated, fosters a passion for learning, presents accurate examples and illustrations, and is supported by accompanying media. The overall average percentage and mean indicate very good quality, and this approach can be considered successful in supporting the learning process as shown in Table 9.

Table 9. Results of expert feasibility validation of approach aspects

B. Approach	%	Mean	Category
The Multiple Intelligence approach is clearly depicted in the teaching materials	92.5%	3.7	VE
The application of the Multiple Intelligences approach creates a passion for learning	92.5%	3.7	VE
The examples and illustrations presented are accurate and relevant	92.5%	3.7	VE
The material in the teaching materials is equipped with supporting media such as audio and visual	92.5%	3.7	VE
Average	92.5%	3.7	VE

Description: VE (Very Eligible).

Respondent feedback as shown in Table 10 indicates the teaching material's linguistic content is of very high quality. The language used is communicative, easily understood, and grammatically correct. The systematic organization and appropriate vocabulary effectively support comprehension and communication for undergraduate students. The high average percentage and mean scores demonstrate the success of this aspect in facilitating effective learning [50].

Based on the data obtained as shown in Table 11, it can be concluded that the skills included in the materials and teaching resources are considered very good by the respondents. The material is presented comprehensively, supported by clear explanations, aligned with learning needs, and effectively develops basic writing competencies. The overall average percentage and mean indicate very good quality, and this skills aspect can be considered successful in supporting learning.

Table 10. Results of expert validation of the eligibility of material for the linguistic content aspect

C. Linguistic Content	%	Mean	Category
The accuracy of the concept in the teaching materials does not create multiple interpretations	92.5%	3.7	VE
The language used is communicative	92.5%	3.7	VE
The sentences used are easy to understand	92.5%	3.7	VE
The language used is in accordance with English language rules	92.5%	3.7	VE
The teaching materials are arranged systematically	92.5%	3.7	VE
The teaching materials use good and correct English	92.5%	3.7	VE
The vocabulary used is in accordance with the level of undergraduate students	92.5%	3.7	VE
The sentence structure and grammar are communicative and easy to understand	92.5%	3.7	VE
Average	92.5%	3.7	VE

Description: VE (Very Eligible).

Table 11. Results of expert eligibility validation for skills aspects

D. Skills	%	Mean	Category
The material is presented completely	92.5%	3.7	VE
The material is supported by a good explanation	92.5%	3.7	VE
The teaching materials are in accordance with learning needs	92.5%	3.7	VE
The teaching materials are in accordance with basic writing competencies	92.5%	3.7	VE
The product is in accordance with basic writing learning	92.5%	3.7	VE
Average	92.5%	3.7	VE

Description: VE (Very Eligible).

Table 12. Results of expert eligibility validation for topic aspects

E. Topic	%	Mean	Category
The material explained improves students' understanding	92.5%	3.7	VE
The material in the teaching material is explained well	92.5%	3.7	VE
The content of the material has the right and correct concept	92.5%	3.7	VE
The parts in the teaching material are relevant to each other	92.5%	3.7	VE
Average	92.5%	3.7	VE

Description: VE (Very Eligible).

It can be concluded as shown in Table 12 that the topic aspect of the materials and teaching resources received a very good assessment from the respondents. The material presented was deemed effective in improving student understanding, the explanations were considered good, the content had the appropriate and correct concepts, and the components of the teaching materials were seen as relevant

to each other. The overall average percentage and mean indicate very good quality, and this topic aspect can be considered successful in supporting understanding and the relevance of the material.

Table 13. Results of expert feasibility validation for the organizational aspect

F. Organization	%	Mean	Category
Exercises on teaching materials can hone students' basic writing skills	92.5%	3.7	VE
Exercises on teaching materials based on Multiple Intelligence	92.5%	3.7	VE
Teaching materials can trigger students to interact with teachers and fellow students	92.5%	3.7	VE
Learning evaluation is clear	82.5%	3.3	VE
Average	90%	3.6	VE

Description: VE (Very Eligible).

Therefore, it can be concluded that the organization of the materials and teaching resources is regarded as very good by the experts as shown in Table 13. The exercises in the teaching materials are considered effective in honing basic writing skills based on the Multiple Intelligence theory and are able to foster interactions among students and between students and teachers. Although the learning evaluation received a slightly lower percentage, it remains in the "Very Eligible" category. The overall average percentage and mean indicate very good quality, and this aspect of organization can be considered successful in supporting student learning.

The following is a recapitulation of the results of the validation of the eligibility of material expertise against the research output of the digital basic writing teaching material development model based on the multiple intelligences approach as shown in Table 14:

Table 14. Recapitulation of the results of the validation of the eligibility of material expertise

No.	Indicator	Mean	%	Category
1.	Foundation Aspect	3.76	94%	VE
2.	Approach Aspect	3.7	92.5%	VE
3.	Language Content Aspect	3.7	92.5%	VE
4.	Skill Aspect	3.7	92.5%	VE
5.	Topic Aspect	3.7	92.5%	VE
6.	Organization Aspect	3.6	90%	VE
Total average		3.69	92.3%	VE

Description: VE (Very Eligible).

As shown in Fig. 3, all assessed aspects are included in the "Very Eligible" category, indicating that the teaching materials have met the material expertise standards very well. Based on the recapitulation results, it can be concluded that the materials evaluated by the experts are considered very good and highly feasible in every assessed aspect. This demonstrates that the materials have been carefully designed and developed, meet the standards, and can effectively support student learning. The total average of 92.3% confirms that the materials are of very high quality according to the experts' perspective. In other words, this indicates that the material model for basic digital writing based on the multiple intelligences approach is declared very feasible for use. From the results of the feasibility test for material expertise, it can be concluded that the WriteMI application has met the requirements for public use. All assessed aspects are included in the "Very Eligible" category, indicating that the teaching materials have met the material expertise standards very well.

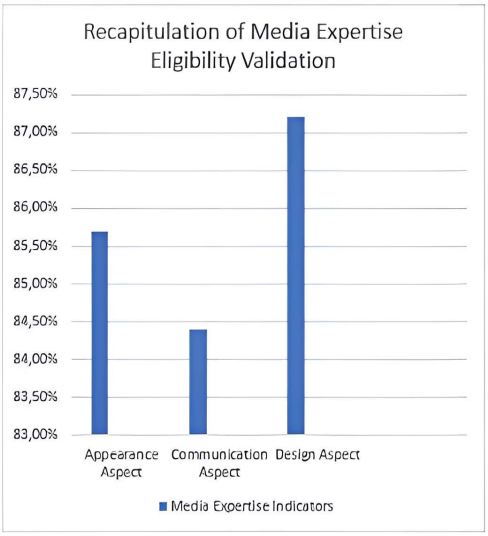

Fig. 3. Recapitulation of the results of the validation of the feasibility of material expertise.

Based on the recapitulation results, it can be concluded that the materials evaluated by the experts are considered very good and highly feasible in every assessed aspect. This demonstrates that the materials have been carefully designed and developed, meet the standards, and can effectively support student learning. The total average of 92.3% confirms that the materials are of very high quality according to the experts' perspective. In other words, this indicates that the material model for basic digital writing based on the multiple intelligences approach is declared very feasible for use. From the results of the feasibility test for material expertise, it can be concluded that the WriteMI application has met the requirements for public use.

V. Conclusion

From the media expert feasibility test, it was determined that the average total is 85.6%, which falls into the "very feasible" category. In contrast, based on the feasibility assessment by material experts, this application received a validation score with an average total of 93.2%. The conclusion drawn from the findings of this feasibility test assessment is that the WriteMI application is considered very feasible according to both media experts and material experts, making it suitable for use as a digital basic writing teaching material based on a multiple intelligences approach for college students. This research is recommended for future researchers who want to explore digital teaching materials, especially for basic writing in the form of an Android application, and it is hoped that it will enrich the references for subsequent studies in the same field for other language skills.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

Mu'thia Mubasyira conducted the research, analyzed and wrote the paper; Muchlas Suseno and Nuruddin Nuruddin are the advisors of this research; all authors had approved the final version.

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