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# Development of E-Modules Based on Blended Learning in Class II English Subjects at Student One Islamic School

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**Abstract**

This research aims to: (1) developing digital teaching materials in the form of class II English e-modules, (2) analyze product feasibility and (3) determine the effectiveness of product development. This research uses the Bord and Gall development model which is integrated with Rowntree. In feasibility testing, assessments were carried out by 3 experts, namely learning design experts, media experts and material experts. The test results for instructional design experts were 86.15%, media experts 90.67% and material experts 84.67%, all in the very appropriate category. The research results show that the quality of the developed E-module is good in one-to-one trials (83.33%), good for small groups (87.14%), and very good for large groups (90.43%). The results of the effectiveness test were carried out by comparing the results of the pretest and posttest scores to obtain t test results with df = 22 and a significance level of 5% or 0.05 is obtained $t_{table}$ = 2.074. It is known that $t_{count} > t_{table}$ is 3.8758 > 2.0738. It was concluded that there was a significant difference in the results of the pretest and posttest and the application of the E module based on Blended Learning for Class II English Subjects at Student One Islamic School was declared effective.

## A. Introduction

Language is a system of arbitrary sound symbols that individuals of a society use to communicate, collaborate, and identify themselves, according to the Big Indonesian Dictionary. Chomsky (1974) said that individuals are born with a language acquisition device (LAD) and discover for themselves how the language works (Endayani, 2021; Omidi et al., 2023; Widyorini et al., 2018). In mastering a language, a child has the basis of his mother tongue. Mother tongue is the first language that people learn from birth through interaction with other members of their linguistic group, such as family and the local community, according to the Big Indonesian Dictionary. Mother tongue refers to the first language learned by a child from the family as the closest environment and is used in everyday life so that mother tongue can be a regional language, Indonesian (national language), or international language. The use of mother tongue can improve children's communication in the family and school environment, encourage children's learning abilities, and maximize children's early cognitive development (Hawa et al., 2021; Morales-Obod et al., 2020; Noviyenty & Putri, 2021).

The majority of Indonesian citizens have a mother tongue in the form of a regional language or Indonesian. As time goes by, the use of foreign languages has become commonplace from an early age. An example is the use of English as a foreign language, which is most widely used and applied at primary to tertiary education levels. The importance of using English includes being able to communicate with foreign nationals, broaden your horizons and friendships, help with academic interests, increase job opportunities, be able to make international transactions, and so on (Ara, 2020; De Wilde et al., 2020; Sudarmo, 2021).

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In Indonesia, English subjects have begun to be implemented at elementary school level. One school that has implemented it is Student One Islamic School, Bogor. Student One Islamic School uses Cambridge-based English subjects whose levels are adjusted to CEFR (Common European Framework of Reference for Languages) which is an international standard for describing language abilities. This English language learning has been implemented comprehensively starting from grade 1. The use of English is not only during class hours, but is also applied in daily activities or conversations. The obstacle experienced when practicing the use of English is that students do not know the meaning of the vocabulary because English is not the mother tongue for some students. Not many vocabulary words have been mastered in English, making it difficult for students to understand the texts presented. Based on the results of the English Scanning Test, which is a preparation simulation before the official English Cambridge Assessment test, there are 61% of students who have not met the expected target scores. This shows that there are obstacles or factors that influence learning difficulties in English subjects.

As time goes by and the influence of globalization continues to occur, it seems as if humans are required to recognize and adapt to the times. This is currently a challenge for the world of education. In the face of such great changes in time, it is necessary to update the education system, so that students can receive education that is appropriate to the times. Examples of using varied learning methods by utilizing modern technology include the use of computers, cell phones, LCDs, etc (Baker, 2022; Pasaribu et al., 2023; Wiranda et al., 2020). It is envisaged that students will benefit from technological tools in the teaching and learning process, which will facilitate teachers' communication with students and help them comprehend the content more rapidly. The right learning media can make it easier for teachers to deliver material. Apart from that, the material presented must also be easily accessible to students anytime and anywhere.

Based on the problems above, the researcher conducted research with the aim of developing a blended learning-based e-module for class 2 English subjects that was feasible and effective.

## B. Research Methods

The Research and Development (R&D) technique is the research methodology employed in this study. The research approach known as "research and development" (R&D) is used to create specific goods and evaluate their efficacy (Agustian et al., 2024; Wulandari et al., 2022). Research is utilized in the nature of requirements analysis to manufacture specific products, and research is required to test the product's effectiveness so that it can operate in the larger community. The Borg, Gall, and Rowntree models—all modified by the researcher—are combined into a product-oriented learning system design model for this study. Among the development processes are:

*Research and collection information* or at the planning stage. So that learning objectives can be successfully met, learning formulations are created based on the descriptions and qualities of pupils. There are several subcomponents at this point, such as describing the students, creating broad and focused objectives, creating a content outline, selecting media, organizing learning assistance, and taking into account the instructional materials already in use.

*Planning* or the writing preparation stage by considering learning resources and obstacles, sorting writing ideas, developing activities and feedback, determining relevant examples, determining graphics/images, determining the equipment needed, and formulating the physical form of the product.

*Develop preliminary form of product*, specifically creating the prototype for the final product. The product draft is finished and edited at this writing and editing stage, after which a draft is prepared.

*Preliminary field testing*, specifically doing small-scale preliminary field testing. By using three to twelve subjects.

*Play product revision*, specifically enhancing the first product manufactured in light of the findings of preliminary trials.

*Main field testing*, the main trial involving all students.

*Operational product revision*, Specifically, enhancing and optimizing the outcomes of more extensive experiments to ensure that the final product is an operational model design prepared for validation.

*Operational field testing* (operational field trial), specifically, the operational model's validation test step that has been created.

*Final product revision*, specifically making final adjustments to the model created to generate the finished (final) output.

23 students, media experts, material experts, and instructional design specialists served as the study's subjects. Both quantitative and qualitative descriptive analysis is employed for the data analysis.

Test the suitability of materials and products using the following percentage formula:

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

Information:

$P$ = Percentage

$\sum x$ = Number of respondents' answers in one item

$\sum xi$ = Number of ideal values in the item

The results of the percentage calculation are then analyzed using feasibility interpretation criteria. As a guide, the following criteria are set:

**Table 1**. Eligibility Interpretation Criteria (Sugiyono, 2019)

| No | Criteria | Validity Level |
|---|---|---|
| 1 | 81% - 100% | Very worthy (usable) |
| 2 | 61% - 80% | Feasible (can be used with revision) |
| 3 | 41% - 60% | Not feasible (recommended not used) |
| 4 | 21% - 40% | Not suitable (not to be used) |
| 5 | 0% - 20% | Very inappropriate (not allowed used) |

Meanwhile, for the user perspective process, validation is carried out by students using the following formula:

Presentation (%) = $\frac{\sum x}{SMI}$ x 100%

Information:

$\sum x$= Total Score

SMI = Ideal Maximum Score

The Review Results Achievement Level Conversion table will then be used to understand the outcome data (Sugiyono, 2019).

**Table 2**. Conversion of Achievement Levels from Review Results

| Achievement Level | Qualification | Information |
|---|---|---|
| 100% - 90 % | Very good | No need to revise |
| 89 % - 75% | Good | Revised as necessary |
| 74% -65 % | Enough | Quite a lot of revisions |
| 64 % - 55% | Not good | Much revised |
| 54% - 0 % | Very Not Good | Totally revised |

To test effectiveness, the technique used is analysis of pre-test and post-test results and the t test. The formula used to find the value of is:

$$t_{count}=\frac{M_X-M_Y}{\sqrt{\left(\frac{SD_X}{\sqrt{N-1}}\right)^2+\left(\frac{SD_Y}{\sqrt{N-1}}\right)^2}}$$

Information:
$M_X$: Mean of variable X
$M_Y$: Mean of variable Y
$SD_X$: Standard deviation
$SD_Y$: Y standard deviation
N : Number of samples

The decision is based on the following rules:
If t-count > t-table means $H_a$ accepted and $H_o$ rejected
If t-count < t-table means $H_a$ rejected and $H_o$ accepted

## C. Results and Discussion

The development procedure in this research uses the Borg and Gall development model flow and the Rowntree model with the following explanation:

*Research and collection information* or planning stage there are several subcomponents including; description of students (researchers create student profiles, the information that needs to be known in creating student profiles includes demographic factors, motivation, learning, background in the field of study, and learning resources. All of this information was gathered through preliminary research, often known as a needs analysis. General and specific objectives were created, and a syllabus and lesson plan outline was created. The media was chosen, with the Canva application being used by the researchers to create electronic modules in place of printed ones. Instructions on how to use the modules, as well as practice questions and instructions for carrying out activities, were used to plan learning support. Additionally, the Oxford Dictionary and the printed English Cambridge Assessment book were taken into consideration.

*Planning* or the writing preparation stage by considering learning resources and obstacles, sorting writing ideas, namely: 1). Introduction 2). Instructions for using module 3). Learning objectives 5). Learning materials 6). Practice Question 7). Learning Resources, developing activities and feedback where in this module there are practice questions at each meeting which are equipped with feedback in the form of answer keys or examples of work expected in a project, determining examples related to everyday life, determining appropriate graphics/images adapted to the characteristics of the product being developed so that the product has appeal. Image illustrations are also provided regarding life situations that are relevant to the learning material, determining the equipment needed such as a printer for printing model designs (drafts), computers/laptops, and internet networks, and formulating the physical form of the product in the form of printed modules and electronic modules.

*Develop preliminary form of product*, specifically creating the prototype for the final product. A draft is produced during this writing and editing phase. Storyboard form is used to explain the product draft. Following consultation with media, instructional design, and content experts, the editing phase was completed.

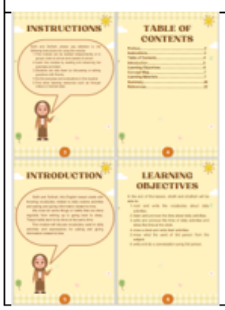
| | | Tampilan | Keterangan |
|---|---|---|---|
|  | Ditambahkan peta konsep untuk memperjelas informasi materi yang akan dipelajari. |  | Tampilan cover |
|   | Terdapat latihan soal setelah penjelasan materi. Dilengkapi dengan feedback berupa kunci jawaban.<br><br>Peserta didik dapat secara interaktif mengisi latihan soal melalui Quizizz. |  | Terdapat koreksi untuk desain dan pemilihan warna.<br>Kata pengantar dan petunjuk penggunaan menggunakan Bahasa Inggris |
|  | Terdapat rangkuman serta sumber pendukung e-modul |  | Terdapat koreksi untuk desain dan pemilihan warna.<br>Daftar isi, pengenalan materi, dan tujuan pembelajaran menggunakan Bahasa Inggris |

**Figure 1**. Product Draft Storyboard

*Preliminary field testing* (initial field trials), namely carrying out initial field trials on a limited scale. Researchers involved 3 students for the initial trial phase of the product being developed. After the initial trial, students were given a questionnaire regarding the initial product, with the following results:

**Table 3**. Results of Preliminary Field Testing

| No | Assessment Aspects | Mark | Criteria |
|---|---|---|---|
| 1 | Material | 83.33% | Good |
| 2 | Module E View | 77.8% | Good |
| 3 | Student Interests | 88.9% | Good |
| **Overall Ideal Percentage** | | **83.33%** | **Good** |

*Play product revision* (product revision), specifically enhancing the first product manufactured in light of the findings of preliminary trials. Based on the outcomes of the preliminary trials, it is quite likely that this improvement will be made more than once in order to produce a main product (model) draft that is prepared for wider testing.

*Main field testing* (field trial), the main trial involving all students. Researchers conducted Main Field Testing on 23 students. After being given treatment in the form of e-module products, students were given another questionnaire, with the following results:

**Table 4**. Main Field Testing Results

| No | Assessment Aspects | Mark | Criteria |
|---|---|---|---|
| 1 | Material | 86.96% | Good |
| 2 | Module E View | 94.2% | Very good |
| 3 | Student Interests | 91.3% | Very good |
| **Overall Ideal Percentage** | | **90.43%** | **Very good** |

*Operational product revision*, Specifically, enhancing and optimizing the outcomes of more extensive experiments to ensure that the final product is an operational model design prepared for validation.

*Operational field testing*, specifically, the operational model's validation test step that has been created. The following outcomes of validation tests conducted by media experts, instructional design experts, and material experts were obtained:

**Table 5**. Material Expert Test

| No | Validity Variables | Validity Value | Criteria |
|---|---|---|---|
| 1 | Material aspect | 88% | Very valid |
| 2 | Aspects of language and images | 85% | Very valid |
| 3 | Presentation aspect | 86.7% | Very valid |
| 4 | Display aspect | 76% | Valid |
| **Overall Ideal Percentage** | | **84.67%** | **Very valid** |

**Table 6**. Media Expert Test

| No | Validity Variables | Validity Value | Criteria |
|---|---|---|---|
| 1 | Aspects of linguistic structure | **90%** | Very valid |
| 2 | Aspects of media display | **84%** | Very valid |
| 3 | Aspects of software engineering | **100%** | Very valid |
| 4 | Implementation aspects | **90%** | Very valid |
| **Overall Ideal Percentage** | | **90.67%** | **Very valid** |

**Table 7**. Instructional Design Expert Test

| No | Validity Variables | Validity Value | Criteria |
|---|---|---|---|
| 1 | Aspects of learning design | **87%** | Very valid |
| 2 | Product development aspects | **92%** | Very valid |
| 3 | Usage aspects | **80%** | Very valid |
| 4 | Assessment aspect | **80%** | Very valid |
| **Overall Ideal Percentage** | | **86.15%** | **Very valid** |

*Final product revision*, specifically making last-minute adjustments to the model created to generate the finished (final) product.

Researchers analyzed aspects of the effectiveness of the English e-module by comparing pretest and posttest scores. After carrying out the pretest and posttest, calculations were then carried out using the t test to see the difference between the test results before and after the treatment was given. The results of the posttest t-test on students' understanding of English concepts can be seen in the following table:

**Table 8**. T-test Results

| | **Pre-test** | **Post-test** |
|---|---|---|
| Mean | 70.28985507 | 80 |
| Variance | 160.5182257 | 255.5555556 |
| Observations | 23 | 23 |
| Pearson Correlation | 0.670783314 | |
| | | |
| df | 22 | |
| tStat | 3.875888663 | |
| tCritical two-tail | 2.07387306790403 | |

| **t-count** | **t-table** | **Information** |
|---|---|---|
| 3,8758 | 2,0738 | There are differences |

Decision Rules:

If $t_{count} > t_{table}$, there is a difference

If $t_{count} < t_{table}$, there is no difference

It turns out that the t-count > t-table is 3.8758 > 2.0738. This means that there is a difference in the English language abilities of class 2 students before and after being given media treatment in the form of an English e-module.

From the results obtained in research activities, it can be seen that the English e-module developed is suitable and effective for use by grade 2 elementary school students. In the future, it is hoped that there will be the development of learning media that utilizes technology to achieve effective and efficient learning goals with an approach, methods, techniques or language learning models that are appropriate and appropriate to the teaching materials and characteristics of students. This is to create a pleasant learning atmosphere for students so that they do not have difficulty learning a foreign language.

## D. Conclusion

This research and development uses the Borg and Gall development model which is integrated with the Rowntree model. Based on the feasibility test of the development product through assessment by instructional design experts with a percentage of 86.15%, by media experts with a percentage of 90.67%, a percentage of 84.67% by material experts, thus the product development of Android-based letter recognition learning media for mentally retarded children rated “very appropriate”. And based on proving the hypothesis by comparing the value of $t_{count} > t_{table}$ or 3.8758 > 2.0738 so it can be said that there are differences in learning outcomes and effective use.

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