DESINGNING NCT APPS FOR 10TH GRADE SENIOR HIGH SCHOOL

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ABSTRACT
The ability of the teacher to understand and teach technology greatly affects students' abilities in their learning process. By developing technology, it can improve the quality of education in the school. Therefore, the researchers aim to design learning media for students in first grade on senior high school level. This research is designing learning media through an application to learn English Grammar in writing skills at senior high school levels. In this study using Research and Development (R&D) method and through ADDIE (Analyze, Design, Development, Implementation, and Evaluation) model. This learning media called as NCT Apps (NCT Application). This learning media is an application designed to develop products in order to test feasibility as an alternative learning media that can help students understand English Grammar in writing skills. The research instrument is a distribute questionnaire on 15 students of the first grade of MA Al-Bairuny Jombang as a sample. The results of this study show that: (1) the results of the media expert score are 3.41. (2) The results of the material expert score are 4 (3) The results of the product test to the students are 4.1. Researchers concluded that Neo Structure Technology Application (NCT Apps) is suitable to use in Grammar learning process in the classroom. From these results, there suggestion that product is revised as suggested from the expert.
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Keywords: *NCT Application, Language Skills, Structure of Sentences, Hyperlink.*

ABSTRAK
Kemampuan guru untuk memahami dan mengajarkan teknologi sangat mempengaruhi kemampuan siswa dalam proses belajar mereka. Dengan mengembangkan teknologi, dapat meningkatkan kualitas pendidikan di sekolah. Oleh karena itu, peneliti bertujuan untuk merancang media pembelajaran untuk siswa kelas satu di tingkat sekolah menengah. Penelitian ini merancang media pembelajaran melalui aplikasi untuk belajar Tata Bahasa Inggris dalam keterampilan menulis di tingkat SMA. Dalam penelitian ini menggunakan metode Research and Development (R&D) dan melalui model ADDIE (Analyze, Design, Development, Implementation, and Evaluation). Media pembelajaran ini disebut sebagai NCT Apps (Neo Structure Technology Application). Media pembelajaran ini merupakan aplikasi yang dirancang untuk mengembangkan produk dalam rangka menguji kelayakan sebagai media pembelajaran alternatif yang dapat membantu siswa memahami Tata Bahasa Inggris dalam keterampilan menulis. Instrumen penelitian tersebut merupakan kuesioner distribusi terhadap 15 siswa kelas X MA Al-Bairuny Jombang sebagai sampel. Hasil penelitian ini menunjukkan bahwa: (1) hasil dari skor pakar media adalah 3,41. (2) Hasil nilai ahli materi adalah 4 (3) Hasil uji produk kepada siswa adalah 4,1. Peneliti menyimpulkan bahwa Neo Structure Technology Application (NCT Apps) cocok digunakan dalam proses pembelajaran Tata Bahasa di kelas. Dari hasil ini, ada saran bahwa produk direvisi seperti yang disarankan dari ahlinya.

Kata Kunci: *Aplikasi NCT, Kemampuan Berbahasa, Struktur Kalimat, Hyperlink*

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INTRODUCTION

English is one of the languages which is communicated by people in various parts of the world. English has been established as an international language in the 18-19 century which made English one of the important subjects at the school level even had become one of the subjects tested on the National Examination for Junior High School and Senior High School levels until 2020. English must be studied because of its status as an international language which link one country to another.

There are four language skills that must be understood in learning language, namely: speaking, writing, reading, and the last one is listening. Four language skills are very important to learn as a first step in learning English. According to (Aydoğan & Akbarov, 2014), there are four basic skills that are interconnected from two aspects, namely the direct or written mode of communication and the direction of communication which consists of producing and receiving messages.

Grammar skill as a part of writing skill, is the main topic that researchers choose for this research. It because the researchers found some problems around of students about this. Almost all of them still cannot understand about structure of sentences, and they said that they still have difficulties about write a sentence in English. This is evidenced in the results of a questionnaire which the researchers made for 15 students of MA Al Bairuny Jombang. Almost all of them know about tenses and another structure of sentences. The students do not understand about the material of concept sentence. So, from these problems the researchers decided to design and develop application-based learning that called NCT Apps.

NCT application (Neo Structure Technology) is where it can help students learn sentence structure with an application to improve students' English skills which is packaged more attractively so that students do not get bored easily. By combining writing material and one of the media that is very popular around people nowadays, it is hoped that it can make it easier for students to learn material that they consider boring to be more interesting. Based on the explanation above, the researchers design the NCT application (Neo Structure Technology) for 10th grade senior high school students at MA Al Bairuny Jombang

METHOD

The following chapter in this part is containing about two topics, research design and research procedures. Research design is a framework that assists researcherss in research that provides an outline and details of each research procedure ranging from questions to research problems to data analysis, meanwhile research procedures is some steps are used as a tool to collect data and answer questions in research.
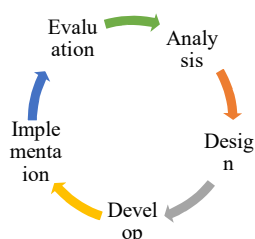
1 Research Design

Research and Development (R&D) is currently a type of research that is being developed. The definition of Research and Development (R&D) is often defined as a process or steps to develop a new product or improve an existing product. What is meant by products in this context is not always in the form of hardware (books, modules, learning aids in class and laboratory), but it can also be software such as programs for data processing, classroom learning, libraries or laboratories, or educational models, training learning, guidance, evaluation, management, etc. Research and Development method became a dominant approach in era 1960 in Europe (Gustiani, 2019). Borg and Gall (1985) in Sugiono (2009) states that research and development (Research and Development / R & D) is a research method used to develop or validate products used in education and learning (Haryati, n.d.). From these expert opinions, it can be concluded that Research and Development is a research method aimed at producing certain products and testing the validity and effectiveness of these products in their application.

Research and development (R&D) have several steps including a creating research framework, examining classroom conditions by collect questionnaire about the research topics, have a good grip of the latest theories in the educational cases, developing preliminary of the product, product validation and the last steps is preliminary field testing.

ADDIE, as the name implies, is a model that involves the stages of model development with five steps / development phases including: Analysis, Design, Development or Production, Implementation or Delivery and Evaluations). The ADDIE model was developed by Dick and Carry in 1996 to design a learning system (Mulyatiningsih, 2013). ADDIE development research model is considered more rational and more complete. (Mulyatiningsih, 2013) suggests

that this model can be used for various forms of product development in learning activities such as models, learning strategies, learning methods, media and teaching materials. There are five steps of ADDIE consists of:

Picture 1. Five steps of ADDIE

2 Research Procedure

The model used is the ADDIE model, so that the development design refers to the ADDIE model stages.

a. Analyze steps

In the analysis steps, the learning media used are not varieties, because teachers only use books or modules. In addition, researchers gave questionnaires to students to find out how high the students' need another media in learning English.

b. Design steps

The design steps are focused on three activities, namely the selection of materials according to the characteristics of students and the competency demands to be achieved, learning strategies, forms and methods of assessment and evaluation. In this stage the game structure and framework of the game are designed. The results obtained at this stage are evaluated on students to improve the design results.

c. Development steps

At the development steps, several activities were carried out, such as: searching and collecting various relevant sources to enrich the material, making and searching for the required illustrations, charts and graphics, typing, editing, and setting the layout of the NCT Apps. The following activity in the development stage is the activity of validating the draft product development and revision after input from experts.

d. Implementation steps

The results of the development are applied in learning to determine their effect on the quality of learning which includes effectiveness, attractiveness, and learning efficiency. The application is carried out in small groups to get input from students as material for improving the product draft.

e. Evaluation steps

The last step is to conduct an evaluation (evaluation) which includes formative evaluation and summative evaluation. Formative evaluation is carried out to collect data at each stage which is used for improvement and summative evaluation is carried out at the end of the program to determine its effect on student learning outcomes and the quality of learning in general. In this research, only formative evaluation is carried out, because this type of evaluation is related to the stages of development research to improve the development products produced. Evaluation in the ADDIE model has been carried out step by step. After the NCT Apps has been developed, the next step is to carry out validation activities for the resulting product.

RESULT AND DISCUSSION

1. Finding

a. The Result of Analysist

The data analysis used to test all instrument questionnaires used a Likert scale, the students was given five response options with each different score. The scale of measurement of research and development of the instrument given by using the Likert scale in the table as follows:

Table 1 Likert Scale

No	Description	Skor
1	Very Good	5
2	Good	4
3	Enough	3
4	Low	2
5	Very Low	1

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The data calculated with formula:

$$xi = \frac{\sum x}{N}$$

Description:

Xi   : Average score (mean)

$\sum x$: Value score

N   : Number assessment criteria

Based on the analysis steps conducted by researchers in April 2021, the learning media used are not varieties, because teachers only use books or modules. In addition, researchers gave questionnaires to students to find out how high the students' need another media in learning English. The student's questionnaire instrument is located in Appendix 1. Here are the scores obtained from the questionnaire divided by the number of scores divided by the number of students:

$$Score = \frac{Total\ Score}{Students\ respon} = \frac{610}{15} = 40.66$$

The average result obtained from the students' scores and the students' response was 40,66. The result calculated to find the average by dividing by the number of questions.

$$Average\ Score = \frac{Total\ Score}{Tota\ Questionaire} = \frac{40,66}{10} = 4.06$$

From the above average which was calculated to get a result of 4.06 which was included in the **Good** category, it could be said that students' need another media to their learning activity.
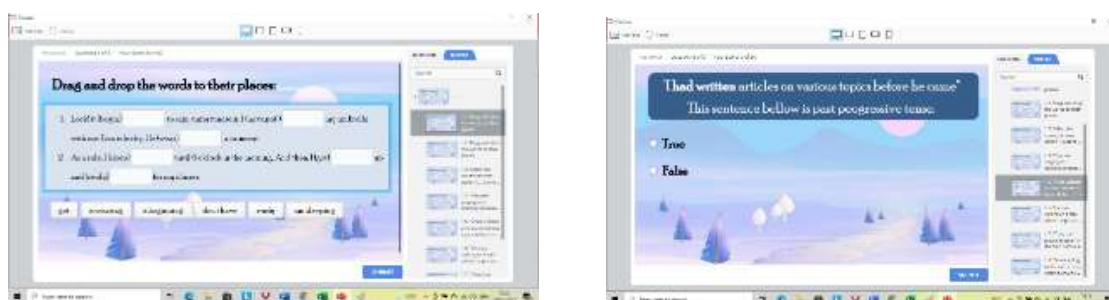
b. The Result of Design

The design step was carried out before the product was actually developed. The design carried out includes planning the flow of the game to be developed and the formulation of the material in the game. Neo Structure Technology Application (NCT Apps) was made using software hyperlink by taking icons from google chrome. Researchers collect several references that could be used for quiz material in the game. The Neo Structure Technology Application (NCT Apps) has five icons. These icons include: (1) learn icon which contains to six kinds of material, namely kinds of adverb, how to use adverb "literally", present perfect tense, simple past tense, simple present tense, simple present tense with non-action verbs (2) game icon consisting of parts, material and excercise. (3) play button icon. (4) next and back icon. (5) home icon to exit. Below was a display of the product at the design step:

Picture 1. Layout Menu And Kinds Of Materials

Picture 2. Layout Icon of Material

Picture 3. Layout Of Questions In The Game

c.   The Result of Development NCT Apps

This chapter will discuss the results of the media development process. The research method used was research and development (R&D) and the research procedure   was ADDIE. The research was held at MA Al-Bairuny Jombang. In accordance with the previous chapter the results will be presented formatively and summative. So, there was stages and results obtained, in the form of:

1)   Profile of validator

In the part of this application development which developed by researchers will be assessed by media experts and material experts to measure the feasibility of application as a learning media for students of the first grade of senior high school.

Validation of learning media that has been developed by researchers was tested by two experts who test product feasibility and material feasibility. Media validation was assessed by Mrs. Iin Baroroh Ma'arif, S.S., M.Pd. as one of the competent people in their expertise. The validation of material was assessed by Mrs. Binti Khalwatin, S.Pd as one of the teachers of English subjects in grade 10th at MA Al-Bairuny Jombang.

2)   The Result of Validation

In the development stage, the learning media developed by researchers passes the validation stage of experts who aim to provide advice and improvements to the developed media. Through questionnaires used in validation tests, the following steps analysis of the feasibility of ICT learning media is conducted using Likert scale by Sugiyono (2013) by using formula followed:

Table 1. Likert Scale

Criteria	Score
Very Good	5
Good	4
Enough	3
Low	2
Very Low	1

The data calculate with the formula *:*

$$xi = \frac{\sum x}{N}$$

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Description :

Xi = Average score (mean)

∑x = Value score

N = Number of assessment criteria

The following are the results of validation of media and materials by experts:

Media validation assessment criteria include audio visual aspects that include in terms of images, writing aspects, and conformity of media design to criteria. Validation of ICT-based learning media by media expert through the number of value scores obtained is then calculated as follows:

$$xi = \frac{\sum x}{N} = \frac{58}{17} = \mathbf{3.41}$$

The media expert's average score of **3.41** means it falls into the sufficient category. Based on the assessment criteria, media experts provide some suggestions and improvements such as giving backsound on the product so as not to monotonous and also changing the font model to make it look easier to read by students. Provide objective descriptions on competency slides so that students can easily understand the goals of media creation. Provide a description of the user's goal subject on the initial slide. And put the competency icon above to suppress the main goal of the material contained in the learning media.
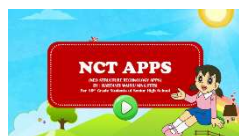
Validation of the second assessment is the assessment of materials by material experts with assessment criteria assessed from the learning aspect which includes the suitability of the learning material with basic competencies and the suitability of the use of vocabulary and grammar. Validation of technology-based learning media by material experts through the number of score scores obtained is then calculated as follows:

$$xi = \frac{\sum x}{N} = \frac{64}{16} = \mathbf{4}$$

The average material expert score of **4** with a rusty amount falls into the good category. The conclusion of material validation results by material experts is a learning medium worthy to be tested to students.

d. The Result of Media Development

Referring to the results of validation assessments by experts with some suggestions and improvements to be made, the following are the media details before and after revision.

NO	MEDIA VALIDATORS' NOTE	MEDIA DISPLAY RESULT
1	Changing name from NCT Game to NCT Apps	
		AFTER REVISION
2	Changing background design to the darker views	**BEFORE REVISION**

	AFTER REVISION

e. The Result of Implementation

The implementation stage is the implementation stage of NCT Apps learning media developed by researcherss to 10th grade students of MA Al Bairuny Jombang. After the media was implemented, the researchers gave a response questionnaire to students that aims to know the opinions and feasibility of video after using video in the classroom learning process. The student response questionnaire covers the effectiveness of using video as a technology-based learning medium. There are 15 students who fill out the response questionnaire that will be calculated using the Likert scale to get conclusions about the effectiveness of video as a learning medium in the classroom as follows:

Table 2. Likert Scale

Criteria	Score
Very Good	5
Good	4
Enough	3
Low	2
Very Low	1

The data calculated with the formula:

$$xi = \frac{\sum x}{N}$$

Description:
Xi   = Average score (mean)
$\sum x$ = Value score
N   = Number of assessment criteria

The results of the questionnaire responses distributed to 15 students. Then the results are accumulated to get the overall result of the total response score of 15 student. The total value will be calculated on average using the Likert scale formula to determine the feasibility and effectiveness of the media. First of all the total scores of all students will be summed then divided by the number of students:

$$\text{Average Score} = \frac{\text{Total Score}}{\text{Number of questionares}} = \frac{678}{11} = \mathbf{61.63}$$
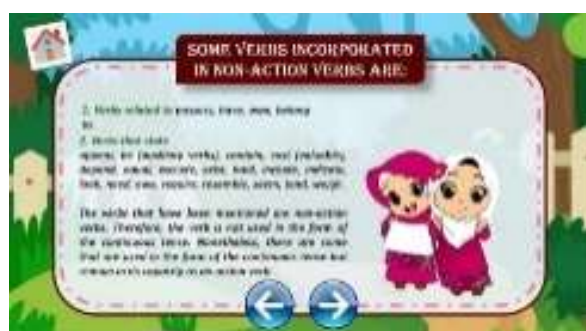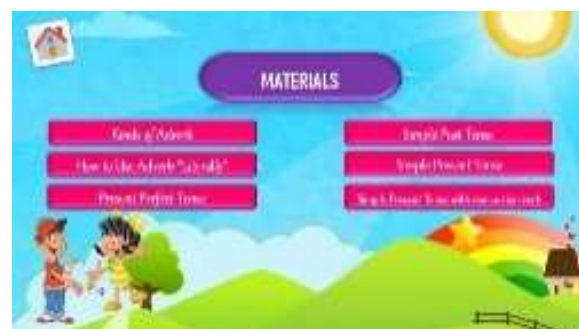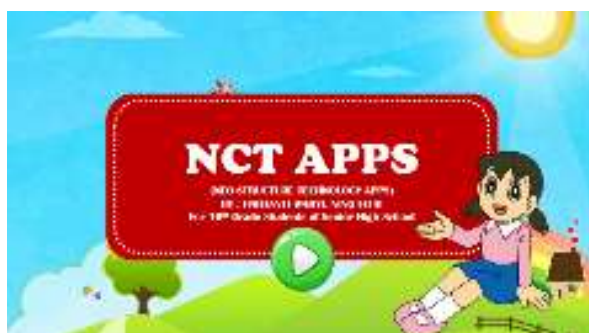
The average result of the number of students' grades and the number of students was **61.63** the results will be recalculated to find the average divided by the number of questionnaires:

$$\text{Average Score} = \frac{\text{Total Score (by number of questions)}}{\text{Number of participants}} = \frac{61,63}{15} = \mathbf{4.1}$$

From the calculation of the above average obtained results of **4.1** which belongs to the category Of Good can be concluded that the use of learning media Neo Structure Technology Application effective if do apply in english learning of 10th class.

f. The Result of Evaluation

The researchers showed the layout drawing after it was revised. The layout drawing of the NCT Apps (Neo Structure Technology Application) was as follows:

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CONCLUSION AND SUGGESTION

This research is designed a learning media product namely NCT-Apps (Neo Structure Technology application) for Senior High School level. This product is designed by using PowerPoint Hyperlink then it was converted to an application using Web2apk. This research use research and development method with ADDIE models. The objective of this research was to develop Neo Structure Technology application that can help teachers and students as an alternative media to support English learning process in writing skill especially on structure of sentences. The subject of this research is the first grade students of MA Al-Bairuny Jombang.

The result of product in this research was validated by two experts in material and media validation. The first expert is Mrs Iin Baroroh Ma'arif, S.S., M.Pd, English lecturer in KH. A. Wahab Hasbullah University as a validator of media validator. And the second is Mrs Binti Khalwatin, S.Pd. is an expert in the field of technology as a material validator. The product calculated by Likert Scale to get the result. The results of media validation obtained a score of 3.41 with a sufficient category. The results of the material validation obtained a score of 4 with a good category. The results of the student response questionnaire were 4.1 in the good category. It means that the product is feasible to apply in learning process for English learning activity.

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