

THE DEVELOPMENT OF A CREATIVE MIMA (MIND-MAPPING) ENGLISH BOOK FOR SUPPLEMENTING STUDENTS LEARNING MATERIAL

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SUBMISSION TRACK	A B S T R A C T
Submitted : 26 December 2022 Accepted : 21 February 2023 Published : 18 March 2023	This study aims to develop a creative supplement book, MIMA English Book, for supplementing student learning material. Implementing a mind map helps summarize learning material and stimulate the students to have a better understanding of learning English subject. This study uses research and development methods using a quasi-experimental research design. The population of this study was students of class X, SMA Negeri 2 Trenggalek, especially in class X MIPA 1 which consisted of 33 students. Methods of data collection using interviews, questionnaires, observations, and tests. From the results of research that researchers have carried out, it was found that 1) The MIMA English Book was developed according to the student needs questionnaire and the results of interviews, 2) Feasibility validation which showed that the MIMA English Book presented materials and media that deserved to be tested, 3) Positive feedback from students against the MIMA English Book, and 4) The results of the t-test showed that there was a significant effect of the use of the MIMA English Book on students' learning in English. In conclusion, the MIMA English Book is an effective learning medium for supplementing student learning material in learning English.
KEYWORDS	
supplement book, mind-mapping, students learning material,	
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Introduction

Learning media play an important role in the learning process especially in English learning because the obscurity of the material presented can be helped by presenting the media as an intermediary. Djamarah & Zein (2010) revealed that learning media are any tools that can be used as a channel for messages to achieve the learning objectives. Further, Gerlach & Ely (1971) in Arsyad (2014) said that if the media is understood broadly, then the media are people, materials, or events that build a condition or make students able to acquire knowledge, skills, or attitudes. Thus, Learning media helps learners improve understanding, presents data with interesting and reliable, facilitates interpretation of data, and compact information.

A textbook is one of the printed media that includes learning media in written form that has to be available in the learning process. This is confirmed by Ministerial regulation Number 11, 2016 that a textbook is compulsory to be used by teachers and students as a reference in the teaching and learning process. There are two kinds of textbooks namely primary books and supplement books. A supplement book is a book that accompanies and elaborates on another already published book. The goal of a supplement book is to provide the reader with a deeper understanding of concepts, themes, characters, places, and ideas in the original work. The existence of the book not only motivates students in learning but also provides them with extra values (Susilawati & Setyowati, 2022). Supplement books are usually provided to meet the student's needs that still did not meet in the primary book.

Students will have a better understanding of extensive English learning materials by constructing the material into an idea or learning model in the form of mind mapping.

According to DePorter et al. (2010), Mind mapping is a creative noting method that facilitates considering much information. Futher, Buzan (2008) explain that mind maps are the easiest way to put information into the brain and take information out of the brain Mind mapping considers an effective technique of remembering something with the help of creative shapes and various colors, so both parts of the human brain are used optimally. Considering the benefits, mind mapping predicted is predicted to facilitate students to have a better understanding of learning English lessons for Senior High School. The mind map technique is applied to make the material simpler and easy to learn with colorful images, shapes, and simple explanations in a form of a book.

Based on interviews and questionnaires, the situation at SMA Negeri 2 Trenggalek regarding English learning media, there are two available books as sourcebook, namely the main book in the form of package books and student worksheets (LKS). Even so, students lack of intention to learn English and have a tendency to be lazy to read existing books. In addition, based on the observation, the students also had poor grades in English in English lessons. The students' lack of interest in learning English is triggered by the presentation of material in books that are less attractive and the chapter/sub-chapter titles are less detailed and tend to make students feel confused.

Therefore, an interesting, innovative, concise, detailed, and easy-to-understand supplement book is needed that students can use to add references and insights into understanding English material. Integration of learning material and mind mapping is good for increasing students' understanding. Some previous researchers have developed textbooks using the Mind Mapping technique. First, a research conducted by Puspita et al.(2021) develop a textbook Fictional Prose Mind Mapping-Based, here the textbook was for university students, and the content of the textbook was about fictional prose. Second, research conducted by Ambarita et al. (2020) developed a textbook-based Mind mapping for Assessment and Evaluation Subjects. Both types of research have positive response feasible to use in supporting the learning process.

Based on some considerations above, the researchers are interested to develop an appropriate and effective English learning media for learning English by using a simple and creative student supplement book, namely a mind mapping-based supplement book.

Research Method

In this research, the researchers used R&D (Research and Development method). Gall et al.'s in (Basuki et al., 2018) states that R&D as an industry-based development model whose findings are used to design new products and procedures, which then are systematically field-tested, evaluated, and refined until they meet specified criteria of effectiveness, quality, or similar standards. To be able to produce certain products, this research used quantitative and qualitative methods to analyze the data (Hadiwijaya, 2022).

This research was carried out with a quasi-experimental research design. Moreover, (Hastjarjo, 2019) states that a quasi-experimental design is a non-randomization design that has purpose to know the effect of treatment given to an experimental group and compare the result to a control group.

There are five steps of Research and Development procedure, they are:

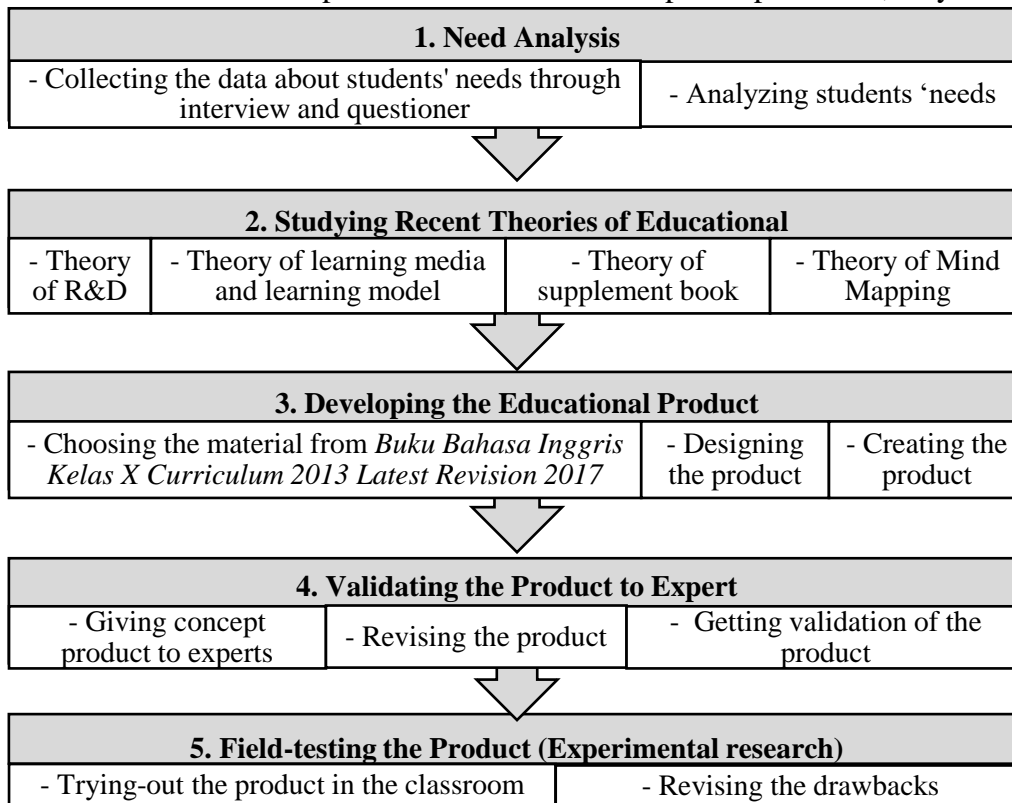


Figure 1. Procedure of MIMA English Book
(Source: Latief (2012) in (Basuki et al., 2018))

A population is all of the individuals or units of interest; generally, there is not always to be had information for nearly all people in a population (Hanlon & Larget, 2011). Thus, the researcher chose the students in Grade X, SMA Negeri 2 Trenggalek, which X MIPA 1 that consist of 33 students as experimental group and X MIPA 2 that consist of 36 students as control group.

The researchers used several instruments to collect data such as unstructured interview, questionnaire for need analysis and students responses, observation and test (pre-test and post-test). The questionnaire and test data were analyzed in quantitative way, while interview and observation data were analyzed in qualitative way.

In this research, the validity of the instrument was carried out on 33 students grade X of class MIPA 1 SMA Negeri 2 Trenggalek. To determine the validity of the instrument using the *Correlation Product Moment* technique. While, to know the reliability of a test in this research, the formula KR 20 was used because the questions used were in the form of multiple choices.

Result and Discussion

The result of the interview and need analysis questionnaire showed that SMA Negeri 2 Trenggalek provided two existing books, namely, “Bahasa Inggris Kelas X SMA/MA/SMK/MAK Edisi Revisi 2016” in the form of package books from Ministry of Education and Culture of the Republic of Indonesia and “Belajar Praktis Bahasa Inggris SMA/MA Kelas X Semester 2” in the form of student worksheets (LKS). Even so, the students lacked the intention to learn English and had a tendency to be lazy to read

existing books. The students also lacked in learning English at home. One of the biggest factors was there are no books that are able to meet the student's needs. The existing books still did not give the student's needs because of some deficiencies such as the explanations are not clear and incomplete, and students find it difficult to guess what the material is being studied because the names of the sub-chapters used did not match with the point in Table of Content.

Thus, this research has successfully developed a prototype of a supplement book for Senior High School. This book is developed using mind mapping as a form of novelty compared with other books in general. Besides, this book is appropriate to fulfill students' need analysis. Students need supplement books that can help them in learning, which have the following characteristics; presenting a Table of Contents that can make students immediately know what material will be discussed, inserting grammar material that is by the sub-chapter material, presenting material that is more concise, clear and easy to understand, mind mapping concept with various images and colors, and notes at the end of each chapter. The rating scale is adapted from Sudijono 2003 in Hartiningsari et al. (2019). The Finding of Expert Validation as follows:

Table 1. The Result of English Material Expert Validation

Appropriateness Aspect	Total Score	Percentage	Criteria	Decision
1. Contents	44	73,3%	Good	No revisions
2. Language	32	71,1%	Good	No revisions
3. Presentation	69	81,2%	Very good	No revisions
Total Percentage	145	76,3%	Good	No revisions

Table 2. The Result of Mind Mapping Media Expert Validation

Appropriateness Aspect	Total Score	Percentage	Criteria	Decision
1. Presentation	78	91,8%	Very Good	No revisions
2. Graphic	133	88,7%	Very Good	No revisions
Total Percentage	211	89,8%	Very Good	No revisions

Based on the table regarding the results of English material and mind mapping media validations that has been processed by researcher, it is known that the overall percentage of the MIMA English Book is “good”. The validation results from both experts validators showed that the MIMA English Book, which in several aspects such as content, language, presentation, and graphic are feasible to be tested with revisions in accordance with comments and suggestions from the validators.

The following is the result of the media design for mind mapping-based supplement book learning (MIMA English Book):

Table 3. MIMA English Book Design

No.	Design	Statement
1.	Physical	Book with A5 paper size and color print
2.	Material/Lesson	English
3.	Language	English and Indonesia
4.	Model Presentation	Mind-mapping based
5.	Content	<ol style="list-style-type: none"> a. Introduction: Preface, table of Contents, Learning objective b. Contents: Material in mind mapping based, material explanation or definition consist of 8 chapters, and grammar that used

		c. Closing: Note in each final chapter, references and the writer information
6.	Function	<ul style="list-style-type: none"> • Developing innovative, creative, and independent learning media for students in grade X. • Supplementing students grade X to learn English material.

The development of this research product was based on the results of students' needs and interview, the adaptation of content was from "Bahasa Inggris Kelas X SMA/MA/SMK/MAK Edisi Revisi 2016" from Ministry of Education and Culture of the Republic of Indonesia and "Belajar Praktis Bahasa Inggris SMA/MA Kelas X Semester 2". Then a MIMA English Book was developed as a learning media to supplement students learning

Observation is carried out during teaching and learning process in experimental group to record and monitor students activities while using MIMA English Book. Here is the following observation result:

Table 4. Observation Result of Students Learning Activities

Meeting	Date	Observation Result
1.	17 th May 2022	Students actively used MIMA English Book as a reference book in learning Narrative Text material during learning and teaching activities and students can understand Narrative Text material better.
2.	24 th May 2022	Students actively used MIMA English Book to supplement their learning Narrative Text material independently while at home and during learning and teaching activities in class and students can conceive Narrative Text material better through mind mapping at MIMA English Book.

Therefore, from the observation result, the researcher found that students used MIMA English Book to supplement them in learning English.

Based on the data on the score of pre-test and post-test in experimental and control group is described as in the following figure:

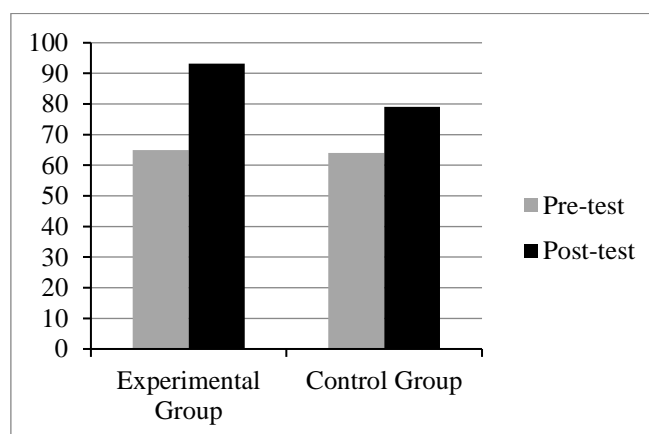


Figure 2. Procedure of MIMA English Book

The researcher used *Paired Samples T-test* to determine the difference of the pretest and posttest both Experimental and Control group. The conclusion of the study was declared not significant if the significance level was 5% and the value of $-t_{table} < t_{count} < t_{table}$.

Table 5. Paired Samples T-test Summary of Experimental Group

Test	Mean	t_{count}	t_{table}	N
Pre-test	64,97	-9,749	1,998	33
Post-test	93,21			

Based on the table above, it was obtained at a significance level of 5% and t_{count} is not between the values of $-t_{table}$ and t_{table} . Then according to the basis of decision-making in the *paired sample t-test*, it can be concluded that H_0 is rejected and H_a is accepted, which means that there was a significant differences in pre-test and post-test in the experimental group.

Table 6. Paired Samples T-test Summary of Control Group

Test	Mean	t_{count}	t_{table}	N
Pre-test	64	-9,812	1,994	36
Post-test	79,67			

Based on the table above, it was obtained at a significance level of 5% and t_{count} is not between the values of $-t_{table}$ and t_{table} . Then according to the basis of decision-making in the *paired sample t-test*, it can be concluded that H_0 is rejected and H_a is accepted, which means that there was a significant differences in pre-test and post-test in the control group.

Then, the researcher used *Independent Samples T-test* to test the differences of the average between the control group and experimental group on the use of MIMA English Book. The conclusion of the study was declared not significant if the significance level was 5% and the value of $-t_{table} < t_{count} < t_{table}$.

Table 7. Independent Samples T-test Summary of Experimental Group and Control Group Post-test

Class	Mean	t_{count}	t_{table}
Experimental Group	93,21	6,702	1,996
Control Group	79,11		

Based on the table above, it was obtained at a significance level of 5% and t_{count} is not between the values of $-t_{table}$ and t_{table} . Then according to the basis of decision-making in the *independent sample t-test*, it can be concluded that H_0 is rejected and H_a is accepted, which means that there is significance effect of using MIMA English book in supplementing students learning.

After learning by using MIMA English Book in the field testing product at X MIPA 1 with 33 students as the experimental group, a student response questionnaire to the MIMA English Book was given. Then, the data obtained is converted in the form of a percentage using the formula from Sudijono (2003) in Hartiningsari et al.(2019). The result is in this following table:

Table 8. Observation Result of Students Learning Activities

Percentage Average of Students Responses in Multiple Choices	91,88%
The result of students comment about MIMA English Book (short answer)	Most students feel happy with MIMA English Book and MIMA English Book is an attractive learning media that can supplement the students in learning English.

From the students' responses that have been processed, it is known that the MIMA English Book is categorized as "Very Good" with an average percentage of 91.88%. The

result of students' comments is MIMA English Book is interesting learning media and they feel happy that the MIMA English Book and MIMA English Book can supplement their learning in English.

The content of the product that being developed was adaptation from The English Package Book for class X, the latest revised 2013 curriculum in 2017, published by the Ministry of Culture and Education of the Republic of Indonesia and combination with Students Worksheet (LKS) by Kreatif Belajar Siswa Aktif Team, and other grammar books. Regarding the product form, the results of the Need Analysis stated that most students needed additional media such as interesting and detailed supplement books for supplementing their learning English both independently and with the teacher. Then, the product (MIMA English Book) is developed based on the result of students need analysis that has been conducted in students grade X MIPA 1, SMA Negeri 2 Trenggalek.

Referring to previous research and present research, the researcher found that MIMA English Book has the big chance to supplement student's learning in learning English.

Conclusion

Based on the results of research development and discussion, it can be concluded that MIMA English Book can supplement students learning in English lesson in grade X SMA Negeri 2 Trenggalek with a significant difference between the results of learning English before using the MIMA English Book and after using the MIMA English Book and the result of independent t-test between the control group and the experimental group is there is a significant effective of using MIMA English Book for supplementing students learning. In addition, based on the observation result, students tend to be active in learning English by using the MIMA English Book. From all of these results, it is known that MIMA English Book is feasible and effective to supplement student learning material.

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