



# Development of Chinese Digital Teaching Material for the 11th Grade Topic 家庭 [Jiātíng] Based on Flipbook

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**Abstract.** The purpose of this research is to develop digital Chinese language teaching material for the 11th grade, topic 家庭 [Jiātíng]. This research is Research and Development (R&D) method using the DDD-E development model. The supporting instrument used in this study was a questionnaire. The questionnaire sheet was used to collect the information obtained from the material experts and the learning media experts. The results of the validation test were used to determine the feasibility of the digital teaching material and the suggestions from the experts were used as the basis of the product revision to obtain the maximum results. The data that has been obtained from the field are then analysed to get the results that this digital teaching material is suitable for use in learning Mandarin for the 11th grade students. Based on the results of the analysis, it was found that this digital teaching material obtained an average presentation of 88%. It is hoped that further developers can develop Chinese digital teaching materials with other topics are in accordance with the current curriculum.

**Keywords:** development · teaching materials · Mandarin language · 家庭 [Jiātíng]

## 1 Introduction

Education in the era of globalisation and digitalization provides convenience and has its own challenges for educators and students, including learning Mandarin. Learning Mandarin is currently more in demand by Indonesian. In the 2013 Curriculum, Mandarin is now included in one of the cross-interest foreign languages lessons at high schools. This shows that the government also feels that Indonesian students need to learn Mandarin as one of the foreign languages.

In the requirement analysis stage, the information was found that currently Mandarin has been widely taught in Indonesia. However, Chinese teachers find it difficult to get teaching materials that match the current curriculum and needs. There are many studies that are relevant to the suitability of Chinese teaching materials with the applicable curriculum. In fact, this research has been carried out since 2013 [1–5] etc. The results of this study indicate that there are very few Chinese textbooks available in the market that are in accordance with the 2013 curriculum for upper secondary level.

The results of Mardasari [6] showed that one of the Chinese teaching materials that are widely used in Malang City High Schools is not in accordance with the Chinese syllabus contained in the 2013 Curriculum. In line with Mardasari, Han Ming [7] stated that the majority of the Chinese textbooks used in Southeast Asia are textbooks originating from Chinese universities. In relation to Han Ming's findings, Haryanti [1] stated that there are very few Chinese textbooks in Indonesian, making it difficult to transfer knowledge so that teachers still use Chinese-published book for Chinese teaching materials. This fact makes Mandarin teachers in the city of Malang forced to use teaching materials on the market even though they are not fully in accordance with the learning objectives. The results of Mardasari [6] which show that one of the Mandarin language teaching materials that are widely used in Malang City High School is not in accordance with the Mandarin syllabus contained in the 2013 Curriculum.

In 2021, the research team has developed a digital textbook for the material “个人信息” [gèrén xìnxī] which is in accordance with the 2013 curriculum for class X students. The textbook has gone through the process of media expert validation and material expert validation. The results of the validation the digital textbook considered suitable for use in the learning process. Not only that, the book also received good response from users, the teachers and students. The digital teaching materials are considered to be able to facilitate learning Mandarin because of the attractive appearance, the variety of material presentations, and the varied examples presented. There are audio and video to make learning Mandarin Chinese easier. Digital teaching materials also help Chinese teachers in maximising the use of technology facilities in the learning process.

When conducting trials with Chinese teachers in Malang City, the teachers expressed their hope for the research team to continue developing similar teaching materials with appropriate themes for the 2nd grade and 3rd grade. Finding teaching materials that match the curriculum for the 2nd grade and 3rd grade is as difficult as finding teaching materials that match the curriculum for the 1st grade. However, Chinese teachers find it harder to develop independent learning materials because the materials are getting more difficult. The higher the level of difficulty of the material, the higher also the level of difficulty in learning it.

During the observation to find out the requirement analysis, the information was also obtained that there are schools that oblige the students to take Mandarin subjects. In some schools, Chinese courses are provided as elective subjects, so that the students have a personal interest in learning Chinese. Meanwhile, in schools that require students to take Mandarin subjects, the teachers have difficulties in growing interest in learning Mandarin. Baroroh [8] mentions that one of the factors that influence the quality of learning outcomes is the interaction between students and teachers and teaching materials. This is in accordance with one of the objectives of preparing teaching materials proposed by the Ministry of National Education [9, p. 10] that the purpose of a teaching material is structured to facilitate teachers in the learning process.

This development is a continuation of the previous development. The research team decided to continue using the flipbook application because it is very easy to operate, looks good and attractive, and the teachers and students are also familiar with the operation of flipbook-based digital books. This will make it easier and more interesting for users to learn Mandarin. Yulinar [10] mentions that the Kvisoft flipbook is a digital book with

the addition of music, pictures and animation. Development research using flip books showed good results [10–14] etc. The results of the study indicate that flipbooks are effective in improving the learning process.

Antje Benedix [15] classifying six criteria in the preparation of teaching materials, namely Han script, organization and structure of teaching materials, texts and content, vocabulary, types of exercises, and grammar. Meanwhile, Prastowo [16] classified the benefits of teaching materials for the teachers and students. The benefits obtained by the teacher are teaching materials in accordance with the demands of the curriculum, not depending on textbooks and government aid packages, while the benefits obtained by students are creating interesting learning, growing motivation, reducing dependence and getting convenient in studying each indicator contained on the learning device compiled by the teacher. The purpose of this research is to develop a digital Chinese language teaching material [Jiāntíng] for the 11th grade. The results of this study are expected to help the Mandarin teachers and students in the Mandarin language learning process, especially in education in the era of globalisation and digitalization.

## 2 Method

This study aims to develop digital teaching materials that can be used online and offline in the Mandarin language learning process. Therefore, this research uses the method of development (Developmental and Research). This is in line with the statement of Tegeh [17, p. 17] which argues that the DDD-E model is one of the learning designs that can be used to develop learning multimedia. The researcher is the main instrument in this research. However, the researcher also prepared a media and material validation questionnaire as a research instrument. The results of the questionnaire will be used as a reference for revising the teaching materials that have been prepared. The data that has been obtained from the results of the material validation questionnaire and media validation were analysed using the analysis technique of Miles and Huberman [18], namely data reduction, data presentation, and drawing conclusions.

## 3 Findings and Discussion

This research develops a product in the form of a flipbook-based digital teaching material for Chinese language [Jiāntíng]. The digital teaching materials have been tested for feasibility through material expert validation and media expert validation. The results of the material validation showed that the Chinese digital teaching material [Jiāntíng] obtained a percentage of 93.7%. Material validation includes learning aspects and material aspects which are presented in Table 1.

The validation of the material that has been carried out including the truth of the material and practice questions contained in digital teaching materials. The percentage value obtained is 93.7%. Based on this percentage, it shows that the Chinese digital teaching material [Jiāntíng] is feasible to use in terms of material. However, there are several suggestions that need to be made to optimise the digital teaching materials that have been developed. The suggestion given by the material validator is to add a review

**Table 1.** Material Expert Questionnaire Results

No	Statement	score				x	xi	(%)
		STB	TB	B	SB			
		1	2	3	4			
<b>Learning Aspect</b>								
1	There are examples in the form of text, images, and videos				√	4	4	100%
2	Provide opportunities for students to learn independently				√	4	4	100%
<b>Material Aspect</b>								
1	Learning materials used are in accordance with curriculum needs				√	4	4	100%
2	the concept of the material is presented clearly				√	4	4	100%
3	There is an evaluation in this game			√		3	4	75%
4	The overall presentation of the material is interesting				√	4	4	100%
5	The material presented is easy to understand				√	4	4	100%
<b>Overall view</b>								
1	The stimulus and exercise provided is sufficient to achieve the learning objectives			√		3	4	75%
	$\sum x$					30		
	$\sum xi$						32	
	P							93,7%

Information:

1 = very bad    x = the score obtained

2 = not good    xi = highest score

3 = good    % = score validation percentage result

4 = very good

at the middle and end of the material. The intention is to give summative evaluation of the teaching materials.

In the learning aspect, the material expert gave a perfect score in two indicators, namely providing examples and providing opportunities for students to learn independently. The team has provided examples of each material presented. The purpose of this is to attract students and make it easier for the students to learn Mandarin using these teaching materials. Thus, it is expected to help students to learn independently. This is in accordance with the opinion of Prastowo [16, p. 301] that the benefits of teaching materials obtained by the students are creating interesting learning, reducing dependence, and getting convenience in studying the material contained in the learning devices that have been prepared.

In the material aspect, there are four indicators that get 4 points, namely the content of the material in accordance with the 2013 curriculum, the material is presented clearly, attractively, and easy to understand. The data shows that the material in this Chinese digital teaching material has been in accordance with the needs of the 11th grade students. This is in accordance with the function of teaching materials proposed by Aisyah et al. [20] that teaching materials as a substance of competence that should be taught/trained to students are at the same time a substance that should be learned/mastered by students. Prastowo [16] also stated the same thing that teaching materials must be in accordance with the demands of the curriculum [21]. This is because the use of media as a tool in learning must be chosen that is appropriate and can really help students understand the material presented.

This Chinese digital teaching material contains text, vocabulary, grammar, Han script, types of exercises, and organisational structure. These digital teaching materials are being displayed in several chapters according to indicators that are in accordance with the curriculum. Each chapter contains four language skills, namely listening, speaking, reading, and writing skills. This is created in accordance with the theory of Antje Benedix [15]. The theory described six criteria for the preparation of teaching materials consisting of the organisation and structure of teaching materials, texts and content, vocabulary, grammar, Han script, and types of exercises. The material contained in the current teaching materials is in accordance with the Chinese language syllabus Curriculum 2013 for the 11th grade contains ten basic competency points for knowledge competence and skill competence which are described in KD 3.1–3.10 and KD 4.1–4.10 [22, p. 11] (Table 2).

In this study, the team conducted a media expert validation test on the product. The media validator provides an assessment and feasibility of displaying teaching materials which are divided into ten indicators. There are five indicators that get the score of 4, namely the attractiveness of the composition, combinations, the clarity of writing and text in the media, video quality in teaching materials, and the suitability of the design of teaching materials with the needs of students. The attractiveness of a teaching material is an important part in compiling the teaching materials. Widodo and Jasmadi [23] define teaching materials as a set of learning tools or tools that contain learning materials, methods, limitations, and evaluation methods that are designed systematically and attractively in order to achieve the expected goals.

The assessment on the cover display and the attractiveness of the images in the teaching materials get these 3 points because there are several revisions needed on the cover, while the attractiveness of the images because they are still taken from other sources, do not produce their own images. While the audio quality aspect gets a score of 2 because there is a lot of noise outside the material content so it needs to be repeated or revised. Based on the improvements that still need to be done, the overall assessment of attractiveness and systematics gets a score of 3 because some improvements are still needed. The total presentation obtained on media validation is 85% before being revised. So that in terms of the appearance of the digital teaching materials [Jiāntíng] this material is getting better, it is necessary to make improvements in the form of suggestions given by media validation experts, namely (1) it is necessary to change the colour of the cover so that it is not exactly the same as the previous digital teaching materials, (2) to replace

**Table 2.** Media Expert Questionnaire Results

No	Statement	Score				X	Xi	(%)
		STB	TB	B	SB			
		1	2	3	4			
1	The cover display of digital teaching materials is liked by students			√		3	4	75%
2	Interesting composition and colour combination				√	4	4	100%
3	Clarity of writing and in teaching materials				√	4	4	100%
4	Images in digital teaching materials are appropriate and interesting			√		3	4	75%
5	Video quality in teaching materials				√	4	4	100%
6	Audio quality in teaching materials		√			2	4	50%
7	Easy to operate				√	4	4	100%
8	The suitability of the design of teaching materials with the needs of students				√	4	4	100%
9	The attractiveness of digital teaching materials			√		3	4	75%
10	Overall arrangement systematic			√		3	4	75%
	$\sum x$					34		
	$\sum xi$						40	
	P							85%

*Information:*

1 = very bad  $x$  = the score obtained

2 = not good  $xi$  = highest score

3 = good % = score validation percentage result

4 = very good

some pictures to make the resolution better, and (3) to improve the audio to make it clearer.

This digital teaching material for the Chinese theme [Jiātíng] is designed using the DDD-E model. Thus, the research team carried out the preparation stage to the evaluation stage. This is in accordance with the opinion of Mardasari [6] that there are nine guidelines for developing Chinese high school level textbooks in accordance with the 2013 Curriculum. The DDD-E development model includes nine steps, including conducting a requirement analysis, studying, and analysing the curriculum of Chinese language for the 11th grade, compiling the contents of teaching materials, including at the deciding stage. At the design stage, the research team determines the title of the book, then decides the topic and material in each chapter, and prepares the outline of the material. At the development stage, the research team began to collect various sources of material, design illustrations and layouts for teaching materials, and at the evaluation stage, the research team finally evaluated the research team finally evaluated the results of the writing.

This Chinese digital teaching material is designed to be used in laptops, computers, and smartphones. It aims to make an easier access digital teaching material and so that they can be used anywhere and anytime by the users. This is in line with the opinion of Asmi et al. [11] that innovative teaching materials can basically be created by lecturers by utilising interesting information technology that can be carried and read anytime and anywhere, which students can access through their own devices. The product in this study can display a book-like effect, which can cover each sheet because it was developed using flipbook software. This is in accordance with the opinion of Yulinar [10] who argues that a flipbook maker is a software that has a function to open every page to be like a book.

The product in this study is a teaching material developed based on flipbooks, so that in addition to displaying book-like effects, these teaching materials are also accompanied by pictures, sound recordings, and videos. This is in accordance with the opinion of Hidayatullah [14] that flipbooks can not only insert text, but can also insert images, graphics, sound, links, and worksheet videos. In line with Hidayatullah, the research results of Asmi et al. [11] stated that the advantage of this application is that the resulting e-book is not just a book, but can be equipped with images, sound, and video. Wijayanto [24, p. 76] stated that flipbook maker software can be made by converting pdf files, images, or photos into a book or physical album when we open it page per page.

## 4 Conclusions and Suggestions

Based on the explanation presented in the previous section, it can be concluded that the Chinese digital teaching material [Jiāntíng] is valid and feasible to use even though there are several inputs given for the product improvement so that the results obtained are more optimal. The Chinese digital teaching materials for [Jiāntíng] are valid and suitable to be used in the Chinese learning process for high school students in class XI. For further researchers who are interested in taking the same theme and topic as this research, the researcher gives two suggestions. It is recommended to develop with another theme, because this teaching material only contains [Jiāntíng] material. While in the 2013 curriculum there are other materials such as hobbies, travel, and daily life. Another suggestion is that further researchers can develop products using other software whose operation is as easy as flipbook software, so that they can add references to the use of technology in learning Chinese.

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