Requirement Analysis of Project-based Thematic Teaching Material Design as An Effort of Character Education Reinforcement

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Article Info	Abstract
	The purpose of this research was to analyze the need for project-based thematic teaching material design as an effort of character education reinforcement for elementary students grade IV. This research used mixed methods by using the model of sequential exploratory strategy. Data analysis technique of this study was qualitative and quantitative analysis. The first step was a qualitative method and then measuring result using tools or certain instrument by using the quantitative method. The analysis of this study consists of qualitative analysis by using resource triangulation technic and quantitative descriptive analysis. The result of this study showed that (1) teacher, principal, and students need teaching materials design based on teaching materials feasibility aspect that was content, presentation, language, and graphics. Project-based thematic teaching materials design as an effort to the character education reinforcement of mutual cooperation appropriate with the competency claim in the sub-theme teaching lesson. (2) Validation result of teaching materials design showed the average score from three validators was 35.67 with very good criteria. In general, validation result from the three validators stated that project-based thematic teaching materials design was proper to be used.

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INTRODUCTION

One of the best ways to reinforce class-based character education with class-based is optimally utilizing the learning resource such as teaching materials and ordered materials in the curriculum. Teaching materials design is a set of activity that possible for students to get reinforcement of character education value through the holistic curriculum. Designing proper teaching materials design based on certain teaching lesson model, hopefully, can give a positive effect on the achievement affectivity on the learning result, and positive effect on students character reinforcement.

Character education reinforcement moval in the curriculum especially class-based activity can be created by designing teaching materials based on certain learning model. The teaching material design should be balanced with a proper instrument. The integration implementation can be developed by paying attention to the content of the curriculum and the content of the lesson, thematically or integrated into the lesson. Learning model in the teaching materials design hopefully can become optimize an alternative to maximize the education quality.

Teaching materials are one of the important components based on the curriculum 2013 thematics learning. The teaching materials context in the curriculum 2013 set by Permendikbud number 8 year 2016 article 2 verse 1 stated that book which used by education unit consists of the lesson textbook and non-lesson text book. The lesson textbook is the main learning resource to achieve competence established by the government. In line with that Prastowo (2013) explained that existed textbook can be the main resource and then another supporting book that relevant with our need can be used as learning materials. This is relevant with the implementation of curriculum 2013 to the integrative thematics learning. Curriculum flexibility is potential at giving advance action to give investment of character value. Character education contents based on class activity is a moral which implemented by packing teaching materials with science nuance in it.

Permendikbud number 22 year 2016 about the standard of education process stated that in encouraging student's skill to produce contextual work, individually or in the group so that it is suggested to use learning approach that produces work with project-based learning. Taher (2014) stated that one of the learning models which relevant with scientific approach is project-based learning. Nasruloh (2013) also explained that project-based learning brings teacher and student to the real-life situation, the real problem where project-based activity is given in the integrated thematics teaching materials with a possible lesson to reinforce student education character. In line with the statement, Voronchenko, Klimenko & Kostina (2015) gave an opinion that when student participated in the project activity and of a sort, they are able to show higher toleration towards friends or towards each other. From those opinions can be concluded that project-based learning gives positive potential in giving reinforcement of student character education through project-based learning in class.

Curriculum 2013 that designed with project-based learning gives an opportunity for the student to learn with their own learning style. Students are allowed to explore their skill with their own plan. Project-based learning is suggested to be implemented in the learning process of curriculum 2013. Sakti (2017) said that in his findings result, the investment of character value can be done in the learning activity which can be implemented by including character concept in each learning process in the elementary school.

The previous research which relevant to the result of this study is the findings from Meyer & Wurdinger (2016) which revealed that project-based learning has a positive impact towards student skill improvement age 6-12 years old. This is the basic of students character building and helps them to prepare their success in the global community and 21st century economy. Learning resource which designed with project-based learning becomes important to be implemented in student basic education unit age 6-12 years old.

Thematic learning by designing project-based thematic teaching material which appropriates to our need in the field becomes important to be implemented as an effort for reinforcing character education in context with the learning process in class. Sumarni, Wardani, Sudarmin & Gupitasari. (2016) in her findings showed that the contribution of PjBL toward the improvement of students psychomotor skill in the learning process is included in the high category. Izzatika, Supartono & Susilaningsih (2015) also insisted that thematic learning based on students respond as a user of teaching materials which integrated with character education is included in a very well positive respond category. This study becomes essential to be implemented considering the need of citizen to learn about character education through the facility of project-based thematics teaching materials design.

The urgency of project-based thematics teaching materials design requirement is suited with the need of learning citizen. A good teaching material consists of appropriate materials with the curriculum that is materials supporting scientific activity. Through scientific activity in class especially in project-based learning, students character values are more easily integrated into that scientific learning activity.

Based on that explanation, the aim of this study is to describe and analyze the need of project-based thematics teaching materials design. Explaining how well is the validity of teaching materials which has been designed suitably to its requirement to be implemented properly in the field.

METHODS

This study used a mixed methods research design with an exploratory sequential strategy model. Exploratory sequential design based on Creswell (2015) can be presented in figure 1. The first stage of this research used a qualitative method and the measurement result used equipment or certain instrument with quantitative methods.

This study focused on analyzing the design requirements of teaching materials. This research

study only reached the fourth stage (collecting and analyzing quantitative data based on variables, instruments, interventions) from the whole of the exploratory sequential procedures. the procedure in this study is as follows.

First Phase, Qualitative Data Collection, and Analysis

The needs analysis was packaged using a questionnaire method in which the questionnaire sheet was addressed to three sources of respondents who were interested, namely teachers, principals, and fourth-grade students.

Second Stage, Qualitative Results

The acquisition of qualitative results in this study used the technique of checking the validity of the data. The data was obtained through questionnaire results from several sources or called source triangulation.

Third Stage, Gathering Results for Forming Variables, Instruments, Interventions

At this stage, it was to consider the results of triangulation to produce teaching materials that were appropriate to the needs. The results of triangulation were as a rule in making teaching material. Teaching material that has been designed was then submitted to experts/experts to obtain some suggestions and the level of validity of the teaching materials.

Fourth Stage, Quantitative Data Collection and Analysis Based on Variables, Instruments, Interventions

This stage was expert validation of teaching material. The descriptively quantitative result was obtained from the validation of teaching material to explain how large the level of validity of instructional material designed.

In general, this study only presented the result of qualitative data analysis with source triangulation techniques that included descriptions and analysis of the design requirements of teaching material. In the next stage was the design of teaching material which then obtained quantitative validation result. In the context of the need for qualitative analysis

teaching material based on the acquisition of needs questionnaire according to the perceptions of teachers, principals, and students. The triangulation of sources was a confirmation of validity and could later produce products in the form of teaching material. The next stage was the stage of instrument design and data analysis to display the quantitative description of the expert or expert validation score. The research phase studied in this study was as follows.
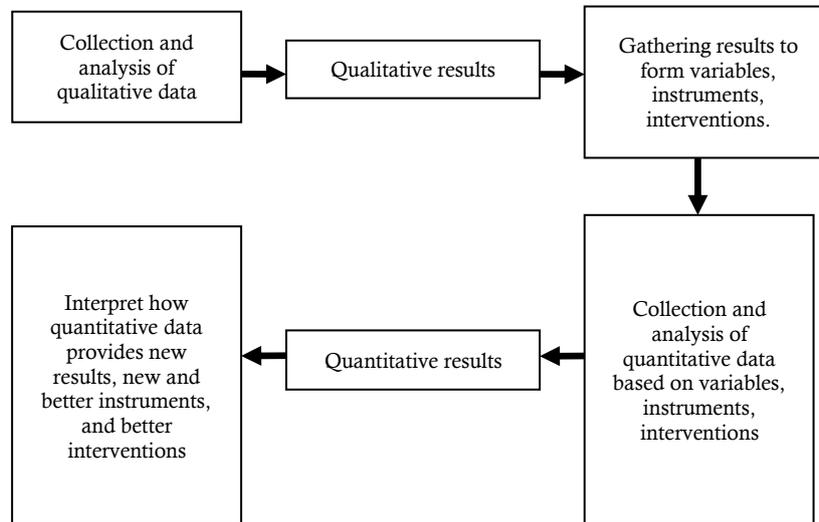

Figure 1. Exploratory Sequential Research Design

RESULTS AND DISCUSSION

The result of this study was shown as a description of teaching material design requirement analysis and the result of the validity score by the expert towards teaching material design with quantitative descriptive method.

Project-based thematic teaching material design requirement as an effort to reinforce elementary student character education grade IV was obtained from the result of requirement analysis according to the teacher, principal, and student. The result showed that teacher, principal and student were hoping for appropriate teaching materials design with proper criteria that include (1) material/content aspect: the compatibility of material that exist in the curriculum, complexity or material comprehensiveness, and character contents; (2)presentation aspect: presentation technique of learning procedure, presentation of supporting materials such as picture illustration or terminology, completeness of motivation presentation and traction; (3) language and readable aspect: the use of good language, the language is suitable with the material and the level of student reading skill; (4) graphics aspect: type and size of the letter/font, position, illustration/picture, teaching material size, and typography of content.

The need of project-based thematic teaching material design according to the teacher, principal, and the student was appropriate with the result of the previous study from Oktarinah, Wiyono & Zulherman (2016) which mentioned that teaching material based on project learning model had 3 superiority which adopted from PjBL. Those superiorities were project-based learning by presentation project in the teaching material, explaining the step in doing the project, and informing teaching material content which supports the finishing of the project. In line with the findings, research of Ernalis & Abidin (2013) stated that teaching material model based on a modified learning model has been proved effectively improved student character during the learning process.

Content Aspect/Material

Content aspect or material for designing project-based thematic teaching material as an effort to reinforce elementary student character education grade IV toward the need of that

teaching material covered some things. Those things are completely explained in table 1.

Table 1. The Need of Teaching Material Design Content Aspect

Indicator	The need of design
The compatibility of project-based thematic teaching material with the curriculum 2013	The material was suited with Curriculum 2013 project-based learning model and the addition of reading literation
Design of project-based thematic teaching material content in the last sub-theme in each theme in the curriculum 2013	The material consists of a project element with various activities such as planning, doing work step, and producing a certain product, and reporting the result where those activities covered character value which integrated with activity or learning process.
The compatibility of teaching material with based competence	Based competence in the project based thematic learning which needs reading literation and project activity orientation where tools and matters were easily reached out in each region.
Material comprehension in the project based thematic teaching material	The material presented was along with learning resource escort, reachable tools and matters, also steps which clearly instructed in the project
presented Material covered project activity	Consist of material explanation, deadline, working-stroke, and student product, and reporting the result
The implementation of effective project activity monitoring to support cooperation	Project activity was done by 2 people in each group
Activity monitoring form in inforcing character value sub-character mutual cooperation that integrated with a learning activity	Activity was designed from the preparation of tools and matters organized in the previous learning which brought from home, the process of product making in the project learning along with the writing of the project report in class

The result of requirement questionnaire showed that the material in teaching material was suited with the learning model based on k13 project and addition to reading literation as a project activity orientation matter where the plan of tools and matters were easily reached out in each region.

The presented material was along with the escort of learning resource which consists of material explanation, the deadline for an assignment, steps of work, a product of student, and reporting the result. The project activity was done by 2 people in each group.

Those were appropriate with the research done by Hugerat (2016) related to the material content based on their need with the research findings showed that students who learned by using project-based learning strategy produced learning atmosphere respond in class which was significantly more satisfying, fun, and also the relationship between teacher and students was significantly more positive.

The process of learning material exploration based on a project in the content acquisition is insisted to the cooperative system. The research was done by Kaldi, Filippatou & Govaris (2011) in his findings showed that students could get a positive advantage through project-based learning to gain knowledge or content, also cooperative work in a group in the skill area.

Presentation Aspect

Presentation aspect in designing the teaching material is an essential aspect and should be considered in order that the teaching material can fulfill the given criteria. The result of requirement analysis towards project-based thematic teaching material as an effort to reinforce character education for elementary student grade IV is given in table 2.

The result of the need for project-based thematic teaching materials in the presentation aspect included some things as follows. First, project-based thematic teaching material has a learning step which covers design composing, data collection, data analysis, and preparing a written report. Second, the learning step has a material explanation, as an example, material, summary, and exercise. Third, teaching material that appropriate with the curriculum of the learning model, it would be better if it is completed with illustration, picture, and working-stroke. Forth, escort to do the student project activity which can be added in a certain section is the position of an escort before work

activity. Fifth, motivation word that can be added in the teaching material is the allurement word in learning which suits the material. Sixth, about sections which should exist in the teaching material, is that a good teaching material ought to cover the beginning section, content section, and last section. The beginning of project-based thematic teaching material ought to consist of composer identity, acknowledgment, and table of content. The content section of project-based thematic teaching material consists of material, picture illustration, and the working-stroke. The content section is completed with illustration/ picture, character value, and summary. Then, in the last section of project-based thematic teaching material, it is consist of a glossary, bibliography, and about the writer.

Table 2. The Need for Teaching Material Design Presentation Aspect

Indicator	The need for design
The step of material presented in teaching material which has project-based learning design	The step of learning covered the design of composing, data collection, data analysis, and preparing the written report
Teaching material that appropriates with the curriculum of learning model step	The main material and learning indicator
material supporting information in the teaching material	Illustration, picture, and steps
Escort to do the student project activity that can be added in the certain section	Before the work activity
the kind of motivation that needed to be added to the teaching material	Allurement word in the learning activity which appropriated to the material
Sections of teaching material presentation	Beginning section, content section and last section
The section of the beginning presentation of teaching material	The identity of the composer, acknowledgment, and table of content
The content section of project-based thematic teaching material	There were material, picture illustration, and steps of work
The completeness of teaching material content section	Illustration/picture, character value, and summary
The last section of teaching material	Glossary, bibliography, and about the writer

The presentation in the teaching materials is very essential because it is a guide for a student in the learning process. Sumarni (2015) with the implementation of project-based learning which included in the constructive approach. It is possible for the student to be the center of the learning process so that it will facilitate the student to innovatively and creatively transfer their knowledge to the real situation in the world. The presentation of the learning process that suit the requirement also facilitates the student positive character in learning. The advantage of project learning which done by the main line of learning character such as the finding from Saripudin, Haryani & Wardani (2015) mentioned that project-based learning model which had the nuance of character education in the learning theme had the main character that was designing project and also working-stroke, collecting product or project result and present it. Those things have a positive advantage in the student learning situation especially in reinforcing student character value. The finding from Yustina, Kartikowati & Danilsyah (2016) in their study showed that the kind of project learning assignment had a positive response in the student surroundings. Their learning resource design that suits the need in the student area could stimulate the realization of student positive attitude.

The writer explained that generally in the teaching material presentation based on a project in the presentation aspect need to show the activity of planning, managing, working-stroke, collecting the project result, and presenting it as facilitation in the reinforcement of character value.

Language Aspect

Based on the result of language aspect requirement analysis towards the project based thematic teaching material design as an effort to reinforce elementary student character education grade IV, the detail is presented in table 3.

The result of project-based thematic teaching materials design based on table 3 can be explained as follows. The acquisition of requirement questionnaire analysis result by the teacher, principal, and student demanding the need for project-based mathematics teaching

materials from language aspect. Language aspect covers the indicator of text presentation in language realization and the use of terminology. Design requirement refers to the indicator of text presentation in teaching materials which referred to EYD and the level of student comprehension age 6-12 years old. In the language realization indicator, it should be easily understood, interesting, formal, and communicative. The use of terminology indicator in teaching material demanded simple terminology and the sentences were able to ease student in comprehending the text.

Table 3. The Need for Teaching Materials Design Language Aspect

Indicator	The need for design
Overall text presentation in good teaching material from the language aspect	Appropriate with EYD and the level of student comprehension age 6-12 years old.
The realization of language that can be implemented in the teaching material arrangement based on project	Easily understood, interesting, formal, and communicative
The use of terminology or illustration that was used to comprehend the material in the project based thematic teaching material	Simple and the sentences were able to ease the student to comprehend the text

The presentation of project-based thematic teaching material design requirement results in the language aspect was relevant to the result of the previous research. The findings from Barry, Rice & Dipman (2013) stated that teaching book was believed as an appropriate tool to handle the character education. The presentation with the addition of reading literation and social learning was expanded to improve the interaction between students and decided the important component to the future generation of student. Language in teaching materials which packed with the PjBL model along with the research finding from Putra (2016) which stated that PjBL was a learning method that facilitator is able to plan, implement, and evaluate the activity in class that facilitates the transformation of character education.

The writer emphasized to implement the character education by packing the teaching material design that should concern about language aspect. Language aspect becomes essential because it was as completeness in designing project-based thematic teaching material. That requirement was mainly considered for a student in order to be able to ease them in comprehending the text.

Graphics Aspect

Project-based thematic teaching material design also should concern about graphics aspect. The result of teaching material design requirement analysis in graphic aspect is explained in detail in table 4.

The result of research and consideration to the graphics aspect of project-based thematic teaching material design requirement covered some cases. First, type of letter that appropriated with the overall content of project-based thematic teaching material was using Arial type and also the size of the letter for material presentation section in project-based thematic teaching material was 14pt. Second, space between words, letter, number or punctuation was given in order to give comfort in comprehending the material with the space of 1.5. Third, the chosen picture or illustration to support the project activity was a simple picture and support the project activity. Then, for the illustration supporting picture was located under the picture.

The result of project-based thematic teaching material requirement for graphics aspect which related to the appearance design indicator has obtained some results as follows. First, the choice of appearance design requirement in the context of the appropriate size of material following the standard of ISO size A4 (21cm x 29.7 cm). Second, in the appearance design, the choice of teacher's answer related to the color in the typography should be appeared in many colors along with the requirement. Third, the illustration of the picture information content was able to clarify the material presentation. Accurate and proportional illustration appropriated with the reality should be proportionally formed so that student would not misunderstand the meaning. Forth, related to the content of the

paragraph or text in teaching material that should need a certain context. Formal standard and each content in the text was suited with daily life.

Table 4. The Need of Teaching Material Graphics Aspect

Indicator	The need of design
Type of letter that appropriates with the overall content of project-based thematic teaching material	Arial font type
The letter size for the presentation section of project-based thematic teaching material	14pt
Space between words, letter, number, or punctuation so that it gave comfort in comprehending the text	Space 1.5
Picture or illustration was chosen for teaching materials to support the project activity	A simple picture and supporting the student project activity
Picture supporting illustration located in a certain section	Supporting illustration under the picture
The appropriate size of good teaching material	Following the standard of ISO size A4 (21cm x 29.7 cm)
Giving color to the typography element	As colorful as needed
Picture information content illustration	Able to clarify the material presentation
Accurate illustration and appropriately proportional with the reality	The illustration form should be proportional so that the student would not misunderstand the meaning
The content of paragraph or the reading in the teaching material that should need a certain context	Formal standard and each content in the reading suited with daily life

The relevance of project-based thematic teaching material graphics aspect with the previous research from the findings of Febriani (2012) which stated that the appearance of teaching material design should be suited with the need of the student. Teaching materials with interesting appearance where there was a supplement or colorful illustration help student comprehend the material. Physics appearance of teaching material was made to give anxiety in using the teaching material.

The writer explained that the teaching material which designed for facilitator should concern about the requirement so that the learning activity can be done well. Indrawini,

Amirudin & Widiati (2017) stated that in order the thematic teaching material can be used optimally, there were some things that need to be concerned that was comprehending the handbook so that the learning activity can be done well. Also, the result and the advantage that affected the character value through the facilitation of planned project teaching material which appropriates with the requirement could gain a positive result. The research result from Rolina (2014) with the findings which stated that responsibility character was a character that included in the autonomous character that can be improved with project method along with some steps that should be done (planning and preparing, ongoing project, reflection, and conclusion).

Systematics of Project-Based Thematic Teaching Material

The design of teaching material must pay attention to the needs based on the aspects/ components of the preparation of teaching material. The aspects/components of the teaching material consist of the content/material aspects, presentation aspects, linguistic aspects, and graphics aspects. The draft or design of project-based thematic teaching material is arranged based on the characteristics of the needs regarding the aspects/components of the preparation of teaching materials. These characteristics are obtained from the perceptions of teachers, principals, and students on the design of teaching materials. The draft or design of teaching materials is then validated by experts.

In detail, the design results of project-based thematic teaching materials are classified into tables. Table classification contains systematics of project learning in teaching materials description of student learning activities and expected character education achievements. This classification can be seen in table 5.

The Expert Validation/Expert of Thematic Teaching Material Design

Project-based thematic teaching material design as an effort to reinforce elementary student character education grade IV has been arranged

well, the next step was a validation test by an expert. The trial was done to give product assessment that was teaching material which appropriates with the teaching material standard and the standard of knowledge in elementary school.

The result of the expert assessment was used as a concern to do a remedial step towards teaching material product design. Those experts become the determiner for the quality standard of good teaching material theoretically. After the suggestion from the experts was gained, then the teaching material was revised along with the given suggestion. The results of the assessment or validation of the design of project-based thematic teaching material are presented in table 6.

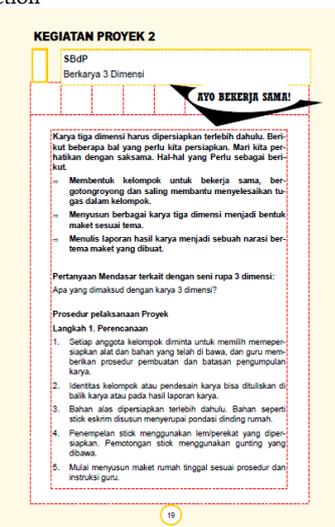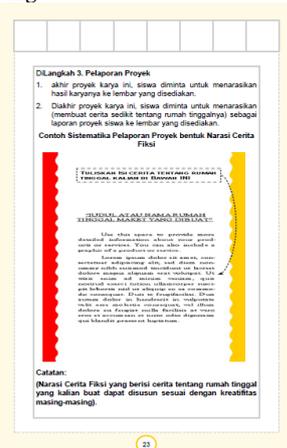**Table 5**. Classification of Project-Based Thematic Teaching Material

Project learning systematics in teaching materials	Description of student learning activities	Expected character
Preparation/planning **Figure 2**. Planning Tools and Materials, Group Division, and Scheduling	In this learning activity, students were asked to prepare tools and materials for the project on the next day. Students were asked to: Form a group consisting of compatriots or other alternatives (adjusted for the number of students in one class) The last project was to make a model of a residence. Each group was also asked to bring a stick of ice cream to taste, alteco glue/castol glue/other adhesive, scissors, 1 square shape 15 cm x 15 cm from cardboard or cardboard material. Coordinated by the teacher about confirming the group who understood the division of tasks in the group	Character Description expected in project learning: Respect (Students were able to appreciate the work of friends/ other groups of friends, could receive criticism/ input from friends/ teachers) Collaboration (Students carried out all stages of preparation (tools and materials) needed in learning activities, work according to the agreement procedure for work assignments)
Data collection **Figure 3**. Basic Questions and Collection of Tools and Materials for Making 3-Dimensional Products	In this learning activity, students were asked to organize project activities guided by the teacher. Organizing for the collection of project results was collected at the end of learning 6 after the presentation in class was done. Basic questions related to the work (discussed with the group) on the worksheet The teacher and students designed the task to be projected by facilitating the teaching materials used. Students understood understanding information regarding their project tasks. Their products were maket houses. Reporting of the manufacturing project was then reported on the project sheet that has been prepared. At the end of this work project, students were asked to narrate (made stories related to their homes) as student project reports to the sheets provided.	Character Description expected in project learning: Inclusive, Commitment to Joint Decisions, and Consensus-Building Deliberations (Participating in developing ideas/ideas in the process of the group and classical discussion, and being able to accept differences of opinion between friends)

Project learning systematics in teaching materials	Description of student learning activities	Expected character
Data Processing/product making **Figure 4**. Manufacture of 3-Dimensional Products/Works According to Work Steps **Figure 5**. Designing 3-Dimensional Works	In this learning activity, students were asked to process their work according to the procedures in the teaching material. Each group member was asked to choose to prepare the tools and materials that have been brought, and the teacher provided the manufacturing procedure and limits to the collection of works. Group identity or designer can be written behind the product. The teacher and students demonstrated the models that will be made. Materials were prepared in advance. Materials such as ice cream sticks were arranged to resemble the walls of a house. Stick sticks using glue/adhesive was prepared. Cut sticks using scissors that were carried. Began to compile models of houses according to procedures according to procedures in teaching material	Character Description expected in project learning: Mutual help, solidarity, and empathy (Carrying out the division of tasks in his group seriously according to his best ability)
Written reporting **Figure 6**. Written Reporting of The Results of 3-Dimensional Products in The Form of Narratives in The Form of Fiction Related to The Work	In this learning activity, students were asked to report their work. Reporting of the project was then reported on the project sheet that has been prepared. Reporting requested was the narrative of his work. Fill in the student narrative (making a fiction about his home) Each group presents the uniqueness of the product/work according to the worksheet. Explained the essence of the work made by each student through student narration.	Character Description expected in project learning: Anti-discrimination, and voluntary attitude (Speaking with polite words in expressing opinions and not using physical strength that refers to negativity in disagreements with friend

Based on table 6, it was obtained the average score from the third validators for project-based thematic teaching material was 35.67. The result of project-based teaching material validation showed that the teaching material achieved the score average category that

was very well criteria. The teaching material was valid from the sector of content or material, presentation, language, and graphics. Generally, from the three validators stated that the teaching material was proper to be used with the revision or remedial along with the suggestion of the validator.

Table 6. The Validation Result of Project Based Thematic Teaching Material Design

No.	Valued aspect	Validator assessment		
		I	II	III
	Dimension of content			
1.	Compatibility of material which exists in the curriculum	4	4	4
2.	Complexity or material comprehensiveness	3	3	4
3.	Character capacity sub character mutual cooperation appropriate with the material	3	3	4
	Dimension of Presentation			
4.	Presentation technique	3	3	3
5.	Supporting presentation	3	3	3
6.	Presentation completeness	3	3	4
	The dimension of Language and Readability			
7.	The use of good and proper language	4	4	4
8.	The language used was suitable with the material and student comprehension level	4	3	4
	Dimension of Graphics			
9.	The use of font (type and size)	4	4	4
10.	Layout, position, illustration, graphic, picture, photo, and design of appearance	4	4	4
	Total	35	34	38
	Average			35.67

There were some sections of teaching material that need to be fixed. Suggestion from some validators was (1) show more about the series of student project assignment in order to show the appearance of student's work. The arrangement of order in teaching material to be suited with the PjBL syntax, (2) more relevance to the competence with the formal standard. Cover Appearance sector in teaching material for class profile and also writer's name or more distinct composer, (3) character capacity or character authentic action integrated with the syntax of PjBL better should be incisive and should be prepared with student worksheet to record the evaluation of learning process implementation. Suggestion from expert validator of teaching material was used as a remedial of project-based thematic teaching material design as an effort to reinforce character education for elementary student grade IV. After the remedial, the teaching material was implemented in the trial than to be implemented in the thematic learning in elementary school.

CONCLUSION

Project-based thematic teaching material was a teaching material which was designed based on the needs for teaching material according to the teacher, principal, and student. Teaching materials were designed based on teaching material composer component, there were a material aspect, presentation aspect, language aspect, and graphics aspect. The analysis result of project-based thematic teaching material requirement as an effort to reinforce character education in the sub character mutual cooperation was suitable with the competency claim in the learning theme in the curriculum.

The result of validation towards project-based thematic teaching material design showed that generally from the three validators stated that the teaching material was valid to be used. The average score from the three validator experts of the project based thematic teaching material was 35.67. The validation score of teaching material achieved very well criteria.

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