Development of Thematic Research Framework to Support Activator Teacher Program in Elementary School

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Abstract
This study aims to provide meaningful, in-depth and student-centered learning at elementary level. Through the development of thematic research framework as to respond to Activator Teacher Program launched by the Ministry of Education and Culture, teachers can provide quality learning. Activator Teachers as learning leaders have more roles and capacities than just teachers in the classroom. Activator Teacher is directed to have a growth mindset that is willing to learn and equip themselves, open and response positively to new things. Thematic research framework offers more of students' engagement in the learning process and develops students' research skills through each step of the research. This study is conducted through Research and Development method, ADDIE model. The results show that thematic research framework is effective. The effectiveness criteria are analyzed based on the results of the questionnaires returned by 19 students of grade 6 with an average of 4.2, the result of interview with subject teacher that indicates a meaningful, in-depth and student-centered learning through the process and the percentage of learning outcomes from 10 randomly selected students that reach 80% of accomplishment.

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Abstrak
Penelitian ini bertujuan untuk menyediakan pembelajaran yang bermakna, mendalam dan berpusat kepada murid di tingkat sekolah dasar. Melalui pengembangan thematic research framework sebagai upaya untuk mendukung program Guru Penggerak yang digaungkan oleh Kemendikbud, guru dapat menyediakan pembelajaran yang berkualitas. Guru Penggerak sebagai pemimpin pembelajaran memiliki peran dan kapasitas lebih dari sekedar guru di dalam kelas. Guru Penggerak diarahkan untuk memiliki growth mindset yang terus mau belajar dan memperlengkapi diri, terbuka dan meresponi secara positif hal-hal baru. Thematic research framework memperluas keterlibatan murid dalam proses pembelajaran dan mengembangkan keterampilan riset melalui setiap tahapan riset. Penelitian ini dilakukan dengan metode Research and Development, model ADDIE. Hasil penelitian menunjukkan thematic research framework adalah efektif. Kriteria efektifitas dianalisa berdasarkan hasil kuesioner yang dikembalikan oleh 19 murid kelas 6, hasil wawancara dengan guru mata pelajaran dan ketercapaian hasil belajar 10 murid yang dipilih secara acak. Ketiga sumber tersebut menunjukkan bahwa modul pembelajaran berbasis riset memenuhi kriteria efektifitas berdasarkan hasil kuesioner sangat baik dengan rata – rata 4.2, hasil wawancara yang mengindikasikan adanya pembelajaran bermakna, mendalam dan berpusat kepada murid selama pembelajaran dan persentase ketuntasan belajar mencapai 80%.

I. INTRODUCTION

In July 2020, the Ministry of Education and Culture launched Activator Teacher Program called Guru Penggerak. This program is designed to improve the teachers' quality by fostering a spirit of leadership, innovation and being a pioneer of change. Activator Teachers as learning leaders are required to strive for student growth in a holistic, active and proactive manner in developing other educators to implement student-centered learning. In a dialogue, Indonesian Minister of Education and Culture, Nadiem Makarim, stated that a student-centered learning paradigm would provide meaningful learning. Activator Teachers as learning leaders are encouraged to have a growth mindset that is willing to learn and equip themselves. Hence, they can motivate and guide students to achieve optimal performance. The teachers' openness and positive response to new things are expected to create meaningful and student-centered learning. The role of Activator Teachers is not only preparing learning and teaching materials, but there must be a willingness and ability to lead, innovate, and make changes (Patabang & Murniarti, 2021). The teacher's role as an agent

of change is very clear starting with every little changes in the classroom (Mulyasa, 2021). Throughout the history of education in Indonesia, teachers tend to give lectures while teaching. It shows that teacher-centered approach plays dominant role than student-centered approach. This learning approach inhibits students' creativity and thinking ability (Sibagariang et al., 2021). Based on the results of Organization for Economic Cooperation and Development (OECD) in 2021, Indonesia is at the bottom three of 78 countries that take literacy, numeracy and science tests for students aged 15 years. This condition shows the low growth mindset of students (Napitupulu, 2021).

During Covid19 pandemic, teaching and learning must be conducted online which brought up new challenges. Without proper strategies, students will experience lack of motivation to learn that lead to learning loss (Hanafiah et al., 2022). Some situations are found during online learning at Nurture Spring Primary School (NSPS) in Indonesia, such as limited opportunities for students to study the material in depth, teachers vying with time to complete the content so they tend to neglect the development of student competencies. Teachers are often use the lecture method in online classes and rely on memorization techniques to complete the entire lesson. This has an impact on the project assignments given, which are still limited to information searching from the specified theme chosen. Students who are taught to memorize with little time left to develop critical thinking skills that can provide deeper understanding and richer experiences indicate an education system that fails to produce well-rounded students (Cossette, 2013). Memorization does not provide adequate understanding of a concept. In this case, the researcher does not ignore the need for memorization, for example when studying vocabulary or formulas, but in other areas memorization is more of a temporary knowledge (Synder & Synder, 2008). Egan & Madej (2009) revealed that there is a serious problem in learning activities at school where students seem to remain “out” of the knowledge that is taught to them. It requires a meaningful and deep learning for students to find themselves "in" some areas of knowledge.

Considering the situations described above, there is a need to develop a learning resource that can increase student involvement in their learning process. Students like innovation in learning that prioritizes activities and involvement (Hayati et al., 2013). Therefore, researcher developed thematic research framework as an innovative and student-centered learning resource in NSPS. A learning resource that provides comprehensive guidance such as theory, learning objectives, skills that will be honed by students at each stage of research, teaching materials and assessment rubrics.

1. Research

The definition of research according to Coryn (2006) is a truth-finding activity, carried out and organized by individuals with a high level of skill or expertise, that contributes to knowledge and is intended to describe or explain the world. Siswono (2010) defines research as a systematic and objective activity to find the truth and answer or solve a problem. Research activities must be driven from curiosity about something or finding answers to something, how it works, what is done and will be done (Willison & O’Regan, 2007). The key elements of research are collecting, analyzing, and interpreting data. It is characterized by unhurried reflective thinking, thorough literature review, careful planning, attention to detail, and adherence to established procedures and protocols (Davis, 2007). Therefore, research activities must be distinguished from just “find out” activities. The aim of research is to contribute to knowledge, by bridging gaps in knowledge, supporting existing knowledge and creating new knowledge (Hosier, 2019). From the definitions stated above, it can be concluded that research is a process of finding the truth about something through careful and accountable steps with the aim of contributing to knowledge.

2. Research by children

Children have the capacity to find out early in life and to develop it in research process, this curiosity needs to be nurtured (Willison & O’Regan, 2007). Education should lead children to ask research questions which bring to light the unknown to knowledge (Willison et al., 2020). Assignments in schools often involve children in the research process, although it is seldom explicitly mentioned, for example, grade 2 students who list the favorite foods of their classmates in Mathematics or grade 5 students conducting interviews with school staff with different backgrounds for Civic tasks. The involvement of children in the research process does not refer to a particular method but is based on

their preferences and competencies (Punch, 2002b). Combining traditional research methods such as observation and interviews with innovative task-based methods can increase the effectiveness of children's research (Punch, 2002a). The United Nations Convention on the Rights of the Child (UNCRC) in 1989 fueled research movement by children. UNCRC articulates children's rights to participate in matters that affect them and their lives (Kim et al., 2017). United Nations Educational, Scientific and Cultural Organization (UNESCO) and United Nations Children's Fund Organization (UNICEF) support child-centred education based on the premise that through it children's rights can be enforced (Schweisfurth, 2013). It means that if research is carried out in the context of child-centred education, the rights of children to participate in research activities and children's rights to education can be fulfilled simultaneously. Thus, research by children will be valued and children's findings will be considered (Kim et al., 2017).

3. Research for meaningful, in-depth and student- centered learning

Mary Kellet in her book, How to Develop Children as Researchers, explained that students will have the opportunity to engage in deep learning through the research process, because each process is highly valued as a learning method and a whetstone for critical thinking (Kellett, 2005). According to Singh (2021) research process is a series of scientific steps carried out during research activities. This process begins with the formulation of the problem then proceeds to the next step sequentially, systematically and interrelated. Willison et al. (2020) mentions that with skills which are often similar, but vary in the level of accuracy, specialization and complexity of discourse, the scope and depth of the methodological framework applied and the extent of "unknown" of a topic being studied, the research process can start from basic education. The same opinion was also expressed by Moore (1990) and Seago (1992) that the research process should begin at elementary level so that children could enjoy the benefits of research-based learning. A number of studies have found that research-based learning can improve students' research skills. Research skills are a set of abilities related to conducting research such as observation, problem formulation, building hypotheses, conducting experiments, analyzing data, and drawing conclusions, including strategies and instruments to access and evaluate data (Waris, 2009). When students develop research skills, the benefits are not only for temporary learning instead it sets a foundation for learning throughout their lives (Yeoman & Zamorski, 2008).

The research process that involves critical and deep thinking is not only recognized by humans, but also endorsed by God based on the fact that God has bestowed the ability to think, learn, and do to humans (Davis, 2007). In this uncertainty of the COVID19 pandemic situation, improvised, meaningless and non-transforming learning is certainly not in accordance with God's purpose for His children as individuals who learn and think. Christian teachers as learning leaders must be aware of their obligations to guide and direct students for them to witness and enjoy the glory of God through the learning process (Junetri & Widjaya, 2020). When students cannot find the correlation of their learning with the greatness of God, Christian teachers have failed to carry out their duties as believers. Christian teachers who interpret their role as a form of accountability to God understand the need to always learn and equip themselves. Hence, the leadership that is carried out inside and outside the classroom can give an impact. The leadership based on a desire to seek growth in students' lives (Junetri & Widjaya, 2020). Refer to NSPS curriculum for the academic year of 2021/2022, the main demand for learning is how learning can be meaningful and fun for both students and educators. The statement should motivate NSPS teachers to be creative and innovative in designing learning and using technology to create fun and student-centered learning. The online learning situation should be a milestone for innovation and change. Therefore, researcher proposes research as a learning method to be introduced to students as early as possible. Through the steps of research designed, it will create focused and systematic learning. Eventually, both teachers and students will get the benefit during the learning process. The result of this study is expected to enrich research-based learning resources both for online and offline classes and works as a reference material for similar research. It can

be further developed as an innovative learning resource especially in Christian school.

II. METHOD

The research method used was Research and Development in order to improve the quality of learning through the product developed (Martianingtiyas, 2019). It is an innovative, productive and meaningful product (Haviz, 2016). The thematic research framework was developed using the ADDIE model by Robert Maribe Branch which consists of five stages of research: Analyze, Design, Develop, Implementation and Evaluation. The first stage is Need Analysis. In order to collect data, researcher held a Focus Group Discussion (FGD), structured interviews and study documents to determine the conditions and needs of Interdisciplinary Project (IDP) where the thematic research framework would be implemented. The FGD was conducted in December 2021 via video conference - Zoom Meeting - with 9 of 6 grade teachers where the researcher acted as a moderator. The course of the FGD was documented and every important point was recorded for the purposes of data analysis and interpretation. Structured interview is one of in-depth interviews, with the aim to find problems more openly, where the interviewees are asked for their opinions and ideas (Sugiyono, 2015). Researcher conducted structured interviews with 2 school coordinators to find out their opinion about the IDP assignment and suggestions for improving it in order to provide meaningful and enjoyable learning for students. Furthermore, researcher also did documents review such as first semester IDP proposals, assessment rubrics and IDP outputs to support the results of FGDs and interviews.

Data analysis technique used by the researcher is qualitative data analysis which refers to Miles & Huberman model, consists of data reduction, data display and conclusion drawing/verification. Data collected also will be triangulated based on data collection techniques in which the results of FGDs, interviews and document reviews were compared to strengthen credibility and provide a broader and rigor perspective. The next stage is Instrument Design. In the initial design process, thematic research framework was designed firstly by arranging each step of research orderly, then determined learning objectives and skills that will be developed along the research process. Next, researcher prepared teaching materials and assessment rubric to guide teacher during the learning process. Third stage is Instrument Development. At this stage, thematic research framework was validated by material and language experts. Based on the suggestions and input from both validators, researcher made some revisions so that the thematic research framework can function properly as to provide meaningful, in-depth and student-centered learning. Fourth stage is Implementation. Thematic research framework was implemented in Science and Character Building (CB) IDP assignment with the subject of 28 students of grade 6. The last stage is Evaluation which refers to 3 aspects such as perception, performance and learning. Researcher distributed questionnaires to 28 students, conducted written interviews with Science teacher and reviewed the assessment rubric to measure students' learning outcomes.

III. RESULT AND DISCUSSION

The results of need analysis showed that grade 6 students had lack opportunities to explore their learning in depth due to time constraints and learning materials must be completed. One of the coordinators said that the lesson plan was not on schedule because of the changes made during online learning. Teachers used 75 – 80% of memorization techniques. This percentage was based on the teachers' ways of teaching and the assignments given which mostly stop at the stage of memorizing without proceeding to in-depth investigations. Both coordinators agreed that this condition was unavoidable. During online learning, most students showed lack of motivation. They were reluctant to show their faces on the screen, even in discussions some turn off the video and muted themselves. This clearly difficult for teachers to supervise and understand how far students understand the lessons delivered. Teachers also complained about the delay in assignments submission. At the first semester of 2021/2022, NSPS implemented IDP assignment, through cross-subject integration students can see the relevance of the topic from each subject and increase their curiosity to conduct further research on the topic they like. However, some students still did copy and paste information obtained from the internet. Thus, they did not develop critical thinking skills. This is because most students used to think that research is about looking for information through the

internet. Most teachers agree that IDP assignments can develop students' research skills. This was confirmed by the coordinators who said that through data collection, data processing and project presentations, students were encouraged to think critically. However, some teachers had not been able to apply it properly so that the benefits are not fully gained. Both coordinators agreed that having a teacher's guide and student worksheets could ensure that research activities would be carried out properly. Through the first semester IDP proposal and assessment rubric, researcher found that some teachers assessed more on content and presentation skills, while the skills of collecting, organizing and processing data had not put into attention yet.

Instrument design stage produced thematic research framework with 8 research steps: Introduction, Bible integration, Topic Exploration, Framing Research Question, Data Collection, Data Analysis, Dissemination and Reflection. There were also a number of worksheets designed by researcher to guide students in research activities such as thinking sheet, toolbox, working sheet, research report and reflection sheet. Worksheet is a sheet containing questions or activities carried out by students as a guide in learning (Suwartaya et al., 2020). The function of the worksheet as a teaching material is to provide opportunities for students to interact and increase understanding of the material provided (Prastowo, 2013). Assessment rubric in thematic research framework is divided into four criteria: Research Introduction, Research Plan, Research Process, and Research Dissemination. Each criterion is to assess the research skills developed along the research process. Rubric is an important component of the whole learning process which can improve student performance by meeting the requirements, improve teaching, contribute to good assessment, and is an important source of information for program improvement (Wolf & Stevens, 2007). An effective rubric has appropriate criteria and a well-written description of performance (Brookhart, 2018). Thematic research framework was then validated by material and language expert. The material validation instrument consists of 14 assessment criteria, most number scored perfect. The result was 62/70 with the percentage of 89% indicates that the thematic research framework material was very good. The result of language validation was 27/35 with the percentage of 78%. It showed that English language used in the thematic research framework is good. Suggestions and input from both experts were followed up by preparing more examples to guide students in filling out worksheets, simplifying worksheets and assessment rubrics, ensuring that fun activities are provided so that students could understand the research activities in a better way. In the future, teachers at NSPS will be given a workshop on how to implement the thematic research framework in the classroom. In terms of language, researcher made some corrections according to the advice of language expert in vocabulary, grammatical structures and typos.

After the revisions were made, thematic research framework would be implemented in grade 6 with 28 students through Science and CB IDP assignment. The schedule of Science was 4 meetings per week, while the schedule of CB was once a week. Duration of each meeting was 30 minutes. Overall, the implementation of thematic research framework was scheduled for 8 weeks from Introduction stage to Dissemination stage. Considering that grade 6 students should take the school examination on April 2022, the last stage of research, reflection, would not be scheduled. Table 1 shows the research steps schedule per week.

Tabel 1. Research Steps Schedule

Timeline	Subject	
	Character Building	Science
Week I	Introduction	Topic Exploration
Week II	Bible Integration	Topic Exploration
Week III	Frame Research Question	
Week IV	Data Collection	
Week V – VI	Data Analysis	
Week VII - VIII	Dissemination	

Result of evaluation stage was based on questionnaire, written interview and assessment rubric. Questionnaire was distributed to 28 students of grade 6 via Google Form and only 19 students returned it. The questionnaire consists of 8 questions with a scale of 1-5 with the following categories:

Scale 5: Excellent
Scale 4: Very Good
Scale 3: Good
Scale 2: Fair
Scale 1: Poor

The result presented in table 2 showed that there was a positive response (perception) of the

students towards the implementation of the thematic research framework.

Table 2. Questionnaire Result

Question	Total score	Average	Category
Please rate how much you have learnt to recognize the difference between finding information through research process and just "a finding out information" activity.	77	4.1	Very Good
Please rate how much you have learnt that credible sources of information are important to avoid misinformation or fake news.	81	4.3	Very Good
Please rate the efficacy/usefulness of thinking sheet in directing you to frame a research question.	80	4.2	Very Good
Please rate the efficacy of toolbox in helping you to organize your information collected.	80	4.2	Very Good
Please rate the efficacy of direction given in working sheet in helping you to write your conclusion.	82	4.3	Very Good
Please rate the benefit of developing research skills like finding information, collecting information, analyzing information and making research report in your future study.	83	4.4	Very Good
Please rate the whole experience of learning through research process.	80	4.2	Very Good
Please rate your motivation to do research of specific interesting topic in the future.	71	3.7	Good
	634	4.2	Very Good

Written interview was done with Science teacher in order to analyze the learning process in the classroom. The teacher explained that she experienced problems in several ways, such as monitoring students in doing assignments and deal with students' commitment to complete the entire research process. On the other hand, students also struggled at the beginning of the research process but over time most of them could understand the essence of research. Through the implementation of thematic research framework, it was found that skim reading skill was not fully developed for some students. It was seen from the difficulty in synthesizing the information they collected. Through the research-based learning, students realized the importance of conducting research process in proper steps. Students are also trained to have a critical attitude with the information they got to ensure that it was related to the research questions posed according to their interests and curiosity. In long term, the assessment rubric will improve students' performance because the rubric was not only product-oriented but also consider other areas. Rubrics can be adjusted to the needs and capacities of students at each level. What needs to be improved is to avoid areas of assessment that can be subjective. Based on the results of written interviews, researcher concluded that the thematic research framework could be implemented well in grade 6, but the challenges of online learning affected the effectiveness and practicality of implementation of thematic research framework.

Researcher chose a random sample of 10 rubrics to measure students' learning outcomes. Table 3 presents the percentage of completeness after thematic research framework was implemented, 80% in complete category and 20% in incomplete category.

Table 3 Result of Students' Completeness

Student's initial	Score	Category
GCL	92	Complete
DEL	92	Complete
AGK	91	Complete
NBB	90	Complete
CLA	87	Complete
SOS	83	Complete
CGA	80	Complete
RGH	75	Complete
KR	57	Incomplete
BKG	54	Incomplete

Evaluation is very important to determine the quality of research results (Haviz, 2016). The effectiveness of thematic research framework was analyzed based on the result of 19 questionnaires returned by grade 6 students, written interview with Science teacher and the learning outcomes of 10 randomly selected students. The three sources indicate that the thematic research framework meets the criteria for effectiveness. Questionnaire shows very well result with an average of 4.2; the result of interview indicates meaningful, in-depth and student-centred learning during the research steps and the percentage of learning completeness is 80%. Researcher acknowledges that this study has limitations and shortcomings such as data collection techniques used by students during the implementation of the thematic research framework was limited to literature review; it involved only 28 students from NSPS; language used in thematic research framework is only in English and limited number of teachers in NSPS who have prior knowledge about research.

IV. CONCLUSION AND SUGGESTION

A. Conclusion

Thematic research framework has been developed according to ADDIE model research guidelines in a sequential and systematic manner. Through analysis of conditions and needs, researchers then design learning resource that can guide teachers and students

during the research-based learning process. Thematic research framework has also been validated by material expert with a percentage of 89% (very good) and language expert with a percentage of 78% (good). Thematic research framework meets the criteria of effectiveness based on the results of the questionnaire very well with an average of 4.2; the result of interview that indicates meaningful, in-depth and student-centered learning during the research phase; and the percentage of learning completeness is 80%. The use of thematic research framework creates a focused and systematic learning through 8 steps of research. Students have the opportunity to be involved in every step of research and develop research skills such as determining research questions, collecting data, analyzing data and disseminating research results. Teachers at the same time have the opportunity to integrate teaching with research activities. This could motivate teachers to initiate innovative and creative teaching as an effort to support Activator Teacher Program as learning leaders.

B. Suggestions

Based on the limitations and shortcomings of this study, researcher suggests that teachers provide opportunities for students to explore various data collection techniques when they come back to school. Conducting field observations or interviews will be alternatives as to provide fun and interesting research experience. Thematic research framework can be implemented in schools with English language as first or second language. Researcher suggests that it is necessary to conduct training for teachers through brief workshops on how to implement the thematic research framework in the classroom. Finally, school could support the research-based learning by setting particular strategies and providing learning facilities.

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