



An analysis of place value content in the Curriculum 2013 thematic textbooks for grades 1 and 2

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ABSTRACT

Textbooks play a key role in teaching mathematics in many Indonesian classrooms. Therefore, the Indonesian Ministry of Education and Culture provides textbooks for use in schools to support the teaching and learning process in the classroom. In implementing the Curriculum 2013 (Kurikulum 2013) in elementary schools, the textbooks were designed and developed by integrating various competencies and subjects, including mathematics, into several themes. This study aimed to describe the place value content in students' thematic textbooks for elementary school students in grades 1 and 2. A descriptive qualitative method in the content analysis was conducted by focusing on three areas of analysis: six critical skills of learning place value, stages development, and strategies in teaching place value. Some findings showed that the thematic textbooks for grades 1 and 2 covered almost all skills except mentioning numbers in other forms (rename), the material presented has developed according to students' learning development, and has implemented all strategies in teaching place values.



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INTRODUCTION

Textbooks do play a vital role in the teaching and learning process (Hutchinson & Torres, 1994). They represent a useful resource for both teachers as the designers of the teaching and learning process and students as the learners who are acquiring the knowledge and skills. According to Curningsworth, the textbook is a source of ideas and learning activities as well as references for students (Roseni, 2014; Utari & Hartono, 2019). Furthermore, children are equipped with a set of textbooks as the references or guides to what extent they have to learn. A textbook is also important for teachers because it can affect the teaching process (Stará et al., 2017) and teaching materials, one of which a textbook will also affect student learning outcomes (Merilia et al., 2019; Pambayun & Retnowati, 2018; Ramda, 2017; Setiawan, 2019; Suherman, 2019).

In the Indonesian educational system, textbooks are also one of the important components that must be mentioned in the lesson plan. As mentioned by Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 71 the Year 2013 about textbook and teacher handbook for early and middle education, the textbook was arranged to help children and teacher during the learning process (Menteri Pendidikan dan Kebudayaan Republik Indonesia, 2013). This cannot be ignored because textbooks are the bridge of communication in facilitating the learning process from teachers to students.

In improving the quality of education in Indonesia, the Ministry of Education and Culture of Republik Indonesia makes an effort to always make improvements in the educational system. One of them is by reforming and revisiting the textbooks to meet the curriculum and applicable standard. The

curriculum in Indonesia has undergone several changes starting from *Competences-Based Curriculum* (KBK 2004), *Education Unit Level Curriculum* (KTSP 2006), until now is *Curriculum 2013*, and so were the textbooks. In Curriculum 2013, the learning textbook that is used currently in elementary school is Thematic Textbooks. Different from the previous one, the thematic textbook was designed with various themes of daily life so students are actively involved in learning and accustomed to problems in everyday life. Students are expected to be able to overcome these problems critically and logically. Thus, thematic students' handbooks contain the scope of the material and practice questions that have been compiled to serve as benchmarks in constructing and enhancing students' understanding, reasoning, and applying skills in perceiving their surrounding situation.

The changes of approach in learning facilitation is certainly a good point considering the objectives of the thematic approach is aligned with the needs of the students nowadays. However, there are still many published textbooks that have limited content and do not cover some concepts which lead to teachers' and students' dissatisfaction with the textbook. This can be seen from several revisions that happened in the thematic textbook since it was first published in 2014. There are three times of revisions in total which are revision 2017, 2018, and 2019. This was also supported by the statement of Supriyanto, Head of Center for Curriculum and Book, Research and Development Agency of the Ministry of Education and Culture of the Republic of Indonesia Ministry of Education and Culture (Kemdikbud), which stated: "*the most changes were in elementary thematic books for grades 1 to 6 which reach up to 80%*" (Gatra, 2016). This means many adjustments are made to meet the needs of students. Thus, this generates the need for the content analysis of the Curriculum 2013 textbooks. One of them is in thematic textbooks for grade 1 and grade 2, specifically in place value topics.

The place value concept is one of the basic mathematics that should be taught early in the elementary mathematics curriculum. An understanding of the place value concept plays an essential part in almost every aspect of mathematics as it provides a building block for all future learning related to mathematics. According to the dictionary of Cambridge, place value is the value of a number decided by its position, for instance, whether it is a one, a ten, a hundred, etc. Without a strong grasp of place value concept, children will have difficulty in understanding of other mathematical concepts such as number sense, rational number, and proportion (McGuire & Kinzie, 2013). Another reason why a flexible understanding of place value important is that it is also useful for calculation strategies or to get along in everyday life.

However, many children complete primary and secondary school without developing adequate numeration and place value knowledge, which accurately identifies the students' misconceptions of place values concept in their elementary school. For instance, children can read and write two-digit numerals and associate the whole numeral with the quantity it represents. By then, teachers seemed to believe that students who showed the skills were 'experts' in place value but it turns out that children assign no meaning to the individual parts which comprise the two-digit numeral. In other words, a child can read and write "12" and understands that "12" represents 12 objects, but neither the 1 represents tens nor the 2 that represents ones. As a result, children learn to operate with a procedural understanding of place value rather than a conceptual understanding which will have an impact when learning further mathematics topics. It is very clear that to support teachers to improve the quality of place value instruction, a clear definition of place value content was required, especially in the students' handbook. Besides that, this also led the researcher to ask, 'what exactly should students learn and teacher teach about the concept of place value?'

Analysis of the place value concept in early age has previously been done by many researchers. McGuire et al. (2010) researched children's understanding of two-digit place value in America. A similar study was also conducted by Rogers (2014) in Australia. However, there is very limited research analyzing the place value concept in mathematic textbooks, specifically in Indonesia. Several researchers have analyzed mathematics textbooks, which in this case is thematic textbooks, but none have focused on the place value content. For example, Novianto and Mustadi (2015) analyzed thematic textbooks in terms of the thematic integrative, scientific approach, and assessment.

Therefore, it is intriguing to research place value content presented in the thematic textbook because this textbook is new and has been officially used in public schools in Indonesia. Furthermore, the biggest concern is whether the thematic textbook has a lack of clarity in place value content that was hampering the teachers' efforts to provide quality instructions in constructing place value concepts or not. Besides that, this is a pathway to improve the thematic textbooks, especially concerning the concept

of place value so the thematic textbook can effectively facilitate the attainment of the teacher's teaching objective.

To do the content analysis of thematic textbooks, there are three areas of analysis in teaching and learning the place value at an early age through a textbook. The first area is about the students' skills in learning the place value. Structure of knowledge in place value consists of conceptual elements as the key to having a deeper understanding of the place value concepts which provides a starting point to define the skills required in learning the place value. There are four properties underpin the place value system which are *positional property*, *base ten property*, *additive property*, and *multiplicative property* (Ross, 2002). These properties accentuate the important skills that are embodied in the place value understanding and cover what exactly is involved in learning place value.

The second area will discuss theories of students' developmental stages in learning the place value. MacDonald et al. (2018) mentioned that in supporting students' understanding of place value concept, the teacher should be aware of the mental activity that students rely on when developing conceptual place value through several stages. Besides that, the purpose of including the stages of place value development is to clarify the sequence of learning development and identify the characteristics of students in learning the place value. These stages provide a lens of the students' conceptual structures of place value while they interact with the concrete materials (manipulatives), which in this case is textbook.

The third area will discuss the strategies in delivering the place value concepts by referring to students' level cognitive. According to the cognitive-developmental theory by Jean Piaget, grade 1 and grade 2 is on the third stage which is the concrete operational stage (ages 7 through 11) (Babakr et al., 2019). During this stage, children become more aware of their surroundings, thus, it is characterized by the early development of organized and logical thinking (McLeod, 2018). Certainly, the concrete operational stage becomes a reference that will be very useful in determining teaching strategies for students in grade 1 and grade 2, especially on the topic of place value.

Based on the theory outlined, the researcher found a previous research framework that was very relevant to this study, which comes from the three areas of analysis. The researcher adopted the six critical skills from Rogers (2014) as the reference which consists of (1) count, (2) make/represent, (3) rename, (4) compare/order, (5) name/record, and (6) calculate. Then, in terms of students' development of place value understanding, the researcher referred to the developmental stages from Burris (2013) which consist of unitary, decade, sequence, separate, and integrated. Last, for strategies in teaching and learning the place value concepts, the researcher adopted the five-modes of representation from Kim and Park (2018) as the reference which consists of (1) concrete, (2) pictorial, (3) language, (4) symbol, and (5) manipulatives.

Since thematic textbooks are consist of several different subjects in a theme, the researcher will only analyze how the place value concept is presented in the students' thematic grades 1 and 2 textbooks which lead this research to the content analysis. Thematic textbooks that will be analyzed are totaling 7 themes, which consist of 6 themes for grade 1 and 1 theme for grade 2 which accessed on the government website (<http://buku.kemdikbud.go.id>). Based on the background of the problems and the theoretical studies that have been stated, it can be understood that an analysis of the content of place values in thematic textbooks for grades 1 and 2 is important. Therefore, this study aimed to describe the place value content in Curriculum 2013 thematic textbooks for elementary school students in grades 1 and 2.

METHOD

In order to satisfy the objectives of the research, a content analysis method was employed. Content analysis is a technique that enables the researcher to be more objective in evaluating than comparing content based on the impressions (Fraenkel et al., 2012), which in this case is the textbook. This study aimed to know to what extent the mathematics textbook provides opportunities for students to learn the place value concepts. The document analyzed was the 2017 revised edition of the Curriculum 2013 Thematic textbook published by the Center for Curriculum and Book, Research and Development Agency of the Ministry of Education and Culture of the Republic of Indonesia. This research was a content analysis research in which the source of research data was in the form of documents so that the assessment was not limited by specific locations. Figure 1 provides an outline of the procedure which was considered and applied in this research study.

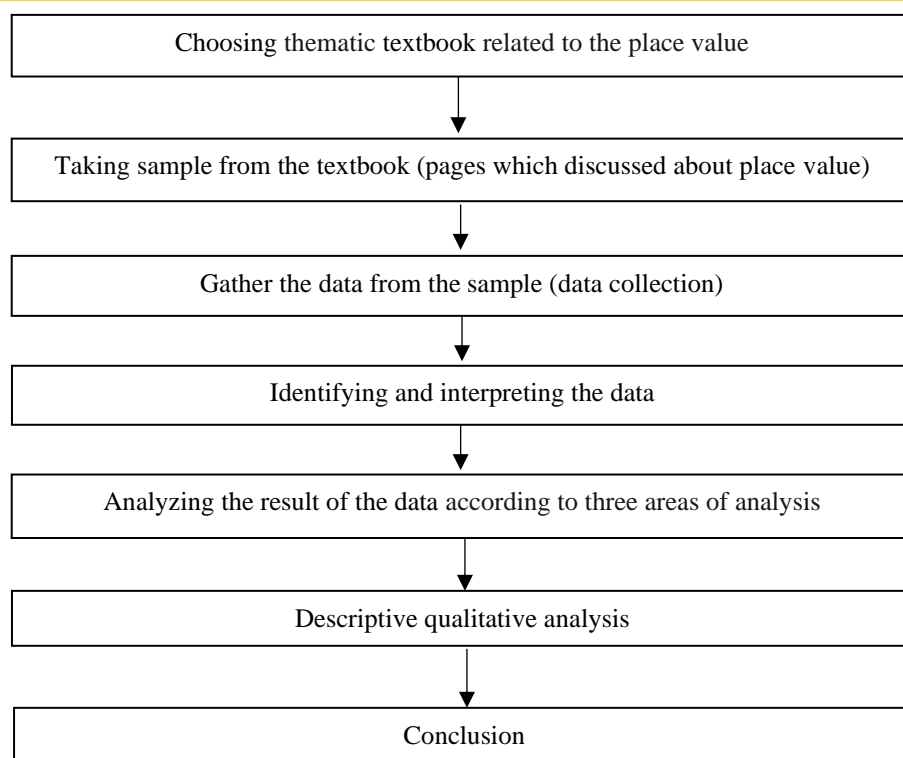


Figure 1. Research procedure

Data collection techniques in this study were the careful reading and recording of textbooks. The main instrument used in this research was the human instrument, in which the researcher herself. Knowledge, accuracy, and criticism of researchers in searching and digging to find the data needed following research problems. The researcher used data table instruments to facilitate the process of categorizing data. The instrument used in this study was the three areas of analysis which was compiled based on the theoretical basis of the concept of place value.

The data collected was a paper selection that is the content of thematic textbooks for first grade and second grade used in public elementary school (Sekolah Dasar/SD) with Curriculum 2013. Specifically, this research used the revision of the 2017 edition because many schools still used this version, and also it was provided on the official website (<http://buku.kemdikbud.go.id>). The selection of these books as research subjects was based on eligibility standards by the National Education Standards Agency (BSNP) which states that books used for grade 2 elementary school students were books published by the Center for Curriculum and Book, Research and Development Agency of the Ministry of Education and Culture.

Since the researcher will only focus on the material presented and the strategies used in introducing the place value, so this research will only analyze the student's thematic textbook because there was no explanation and material provided in the teacher's textbook. The teacher's textbook was a guideline for applying the learning approach, integrating teaching material, and assessment techniques. Thus, this research specifically used specific criteria to identify the collected papers such as "thematic textbooks", "students' handbook", "publication dates", "grades 1 and grade 2", and "place value concepts".

A total of 7 books of students' thematic textbooks from grades 1 and 2 were selected related to the place value concept which consists of 6 books for grade 1 and 1 book for grade 2. These thematic textbooks appear in public elementary schools and also could be accessed online on the internet through <http://buku.kemdikbud.go.id>. The researcher prefers to use e-thematic textbooks to make the process of analyzing easier. Thus, the method used to gather the data was called the documentation method. This method was used to examine content which includes place value concept by applying the selected framework. Table 1 was the list of thematic textbooks that will be analyzed in this research.

In analyzing the data, a descriptive qualitative data analysis method was used. The data analysis technique used in this research was as follows: (1) analyzing data that has been classified; (2) identifying the patterns according to the data and make connections; (3) explaining the material presented

descriptively by explaining the findings in the discussion; and (4) the conclusion was withdrawn from the analysis results. After the sample was determined, the research was continuing with the recording and description of the content of the textbooks relating to the three areas of analysis.

Table 1. List of Thematic Textbooks

Textbook	Title	Grade	Code
Theme 1	Diriku Siswa	1	T1G1
Theme 2	Kegemaranku	1	T2G1
Theme 3	Kegiatanku	1	T3G1
Theme 5	Pengalamanku	1	T4G1
Theme 6	Lingkungan Bersih Sehat dan Asri	1	T6G1
Theme 7	Benda, Hewan, dan Tanaman di sekitarku	1	T7G1
Theme 1	Hidup Rukun	2	T1G2

Conclusions are drawn by analyzing the data more deeply by looking for the meaning of the data. The conclusion was made based on the existing analytical construct. This study maps the results to obtain answers to questions to be concluded. The final stage of this research was to create a narration. The narration was a description that contains answers to research questions. The narration also contains important information. This information aimed to describe the research data following the theory.

RESULTS AND DISCUSSION

The identification of the three areas of analysis in each textbook was done by analyzing the contents of the material including explanations, examples, and exercises (See Table 2). The checkmarks indicate the concept of “yes: this has been verified” based on the data interpretation. The results of this research showed that thematic textbooks of grades 1 and 2 (2017 Revision) were recommended to be used in learning place value. Furthermore, the three areas of analysis in this research could be used as a reference and an insight for developing and using the textbooks in facilitating the learning process of place value. It turns out there were several aspects that need to be considered such as the skills, the students’ developmental stages, and teaching strategies. The discussion was presented as follows.

Table 2. Thematic Textbook Analysis Results

	Tools	Themes						
		T1G1	T2G1	T3G1	T5G1	T6G1	T7G1	T1G2
6 Critical Skills in Place Value (Rogers, 2014)	Skills:							
	Count	√	√	√	√	√	√	√
	Make/Represent	–	–	√	√	√	√	√
	Rename	–	–	–	–	–	–	–
	Compare/Order	√	–	√	√	–	√	√
	Name/Record	√	–	√	√	√	√	√
	Calculate	√	√	√	√	√	√	√
Developmental Stages (Burris, 2013)	Stages:							
	Unitary	√	√	–	–	–	–	–
	Decade	–	–	√	–	–	–	–
	Sequence	–	–	–	√	–	–	–
	Separate	–	–	–	–	√	√	–
	Integrated	–	–	–	–	–	–	√
Teaching Strategies (Kim & Park, 2018)	Modes of teaching:							
	Realistic	√	√	√	√	√	√	√
	Pictorial	√	√	√	√	√	√	√
	Language	√	√	√	√	√	√	√
	Symbolic	√	√	√	√	√	√	√
	Manipulative	√	√	√	√	√	√	√

Skills Required in Learning the Place Value

In general, all the textbooks have covered some skills in six critical skills required in learning the place value and the presentation of the skills is following students’ developmental stages (see Table 2). In each stage, the six skills are introduced, exercised, and assessed. For instance, the contents of T1G1 and T2G1 are in the first stage of students’ developmental stages (*Unitary*), in which students use a

count-by-ones strategy and can associate the whole numerals (integers) with the quantity that they represent. The contents are aligned with the skills built in T1G1 and T2G1 which are only *count, compare/order, name/record, and calculate*. The skill of *make/represent* (grouping by tens) is not relevant in the stage of *Unitary*. Then, the second stage (*Decade*) in which all skills, including *make/represent*, are covered in T3G1. In T5G1, the contents and all skills are related to the third stage (*Sequence*). The contents and skills in T6G1 and T7G1 are related to the fourth stage (*Separate*). Although there is an absence of the skill of *compare/order* in T6G1, the skill is introduced, exercised, and assessed in T7G1. In the last stage (*Integrated*), the related contents and all skills are covered in T1G2.

Each skill that is introduced, exercised, and assessed in each textbook also goes through a process of mutual support from the other skills (can be scaffoldings) although there is no rigorous sequential order of the presentation of the skills (Rogers, 2014). This shows that the materials in thematic textbooks are following the stages of development of students' thinking proposed by Burris (2013). Besides, the acquired skills of a *count, make/represent, compare/order, name/record* are expected to be able to develop and enhance students' understanding of the concepts of numbers and place value so that their skill of a *calculate* can be excelled. Moreover, the conceptual understanding and skill of *count* are the basic footstep towards acquiring the other skills.

However, in some parts of the textbooks, when describing new skills, it turns out that those new skills were not used in the introduction or exercises of other skills. For instance, students are facilitated to exercise the skill of *make/represent skill* in T3G1 by regrouping objects into tens and units. But in the exercises for the skill of *calculate*, students are not facilitated to use the skill of *make/represent* in the calculation but by counting the objects (the most basic skill). This also happened in T5G1 where the students are not facilitated to solve addition problems by using the *make/represent skill*. This indicates that in some parts of the textbooks, the support among the skills in developing and enhancing the skills is still lacking.

Though there are many repetitions of skills in the textbooks, the presentation of place value contents and skills shows gradual development and complexities of the concept of place value and problem-solving. For example, although the contents and skills that are presented in T3G1, T5G1, T7G1, and T1G2 show some similarities, each textbook works on the different range of numbers (namely 1 to 40, 1 to 60, 1 to 100, and 1 to three-digit numbers).

There is one interesting finding. All the textbooks do not cover the skill of *rename*. Students are not introduced to the idea that a number can be composed/decomposed into several pairs of numbers by using addition and subtraction, not just the pair of numbers of tens and units. For example, students are not facilitated to acknowledge that $24 = 13 + 11$ and $24 = 29 - 5$ beside $24 = 20 + 4$. The skill of *rename* can stimulate students to think freely and creatively. The students are not facilitated to solve the mathematical problems in various ways. Besides, the skill can develop and enhance the concept of place value; to recognize the advantage of using place value (positional numeration system with decimal (base-ten) number system).

Developmental Stages in Learning the Place Value

It is clearly seen in Table 2 that all stages of place value development are covered in all the textbooks gradually. The gradual development of students' understanding of place value concept and related skills is expected to increase students' confidence and motivation in learning the basic concept of numbers (and mathematics). In some stages, two textbooks contain the content and skills of the same stage. For example, T1G1 and T2G1 cover the first stage (*Unitary*) because the students only understand the units where they can count by ones. In T1G1 students are introduced to the idea of counting and other skills while in T2G1 students are facilitated to enhance their understanding and skill of *count* and *calculate*. A similar condition occurs again in T6G1 and T7G1 (the last textbooks for grade 1).

Therefore, the gradual stages of place value development, and some repetition in some stages, that are covered in the textbooks indicate that there is an intention to provide the scaffolding for students to develop and enhance their understanding and skills of place value. This means that there are no significant gaps between each concept for the students to learn it. It can be seen in each textbook that some concepts and skills are represented before the new ones are presented. For example, in T5G1, students are reminded of how to group and regroup two-digit numbers into tens and units place that has been introduced and exercised in T3G1. Moreover, in T6G1, the learning process also starts by

reviewing the new concept and skills in T5G1 which is a calculation using the stacking down system. On the other hand, each textbook also provides challenges for the students to explore and think mathematically. For instance, the students are asked to determine which arithmetic operation (addition or subtraction) that is involved in solving some problems, and they are asked to formulate the problems by using mathematics notation (symbolic).

Strategies in Teaching the Place Value

The strategies in teaching and learning place values that are used in the textbooks are analyzed according to the representation modes from Kim and Park (2018) as showed in Table 2. The concept of place value is introduced and presented by giving many examples of problems and pictures that are supported by activities such as “*Ayo Mengamati*” (Let’s Observe), “*Ayo Latihan*” (Let’s Practice), and “*Ayo Mencoba*” (Let’s Try) instead of just giving some explanation of the concept. The design of representation modes and activities shows the intention to develop students’ mathematical thinking from contextual problems (realistic mode) to symbolic and manipulative mode.

In general, all the textbooks cover all the modes and in each of the textbooks, there is a sequential flow from realistic to manipulative modes. Each textbook always begins with the realistic and pictorial modes, then follows with language, symbolic, and manipulative modes. Specifically, in introducing the new concept of place value, each textbook is consistent to start with a realistic story and facilitate the students with pictures (pictorial mode). It should visualize the materials using pictorial (picture) before introducing abstract concepts. Moreover, the textbook has also used a variety of representations either in giving examples and exercises, not just in introducing the concept of place value.

Although all representation modes are used in all the textbooks, there is a slight development in using the modes that intend to develop and enhance students’ thinking skills from concrete materials to more symbolic (abstract) ideas. In the first three textbooks (T1G1, T2G1, and T3G1) the pictorial mode is used more frequently compared to the other textbooks as the use of language and symbolic modes occur more and more often from T1G1 to T1G2. Though there is increasing use of symbolic mode, the content of each textbook mostly starts with pictorial mode, except in T1G1 the introduction to the concept of addition uses symbolic mode instead of pictorial mode. This is following the cognitive development theories from [Piaget \(1936\)](#) and [Bruner \(1951\)](#) which emphasize the importance of using concrete materials (in this case the pictorial mode) in children learning process to develop their understanding of the abstract concept. Also, the textbooks are designed for students of grade 1 and grade 2 (the first textbook for grade 2 students) so students’ cognitive development should not be pushed too fast in about one and a half years. The use of concrete objects such as pencils, instead of just the pictures of pencils, can be embedded in realistic and manipulative modes but it is very rare implemented in the textbooks.

There is also some development in the way of introducing the skills. In the first three textbooks (T1G1, T2G1, T3G1) the given problem examples are presented with their answers directly (pictures) but in the other textbooks, students need to explore and extend their understanding of place value (beyond the pictorial mode) in order to understand or give the correct answers. For example, if in T1G1 the book introduced the number 1-10 directly, in T5G1, the book only gives an example from 21 to 23 where the students need to write further numeral by counting the ten-blocks provided. This indicates that the textbooks have facilitated the students to develop their thinking skills to be more curious and critical in the context of mathematics.

Moreover, the manipulative mode is used slightly differently in one textbook compares to the other ones. In the first three textbooks (T1G1, T2G1, T3G1), the manipulative mode is used to know and understand numbers. However, in the last three/four textbooks (T5G1, T6G1, T7G1, T1G2) it is used to apply the skills in the real situation and with an integrative approach to problem-solving. In this case, the manipulative mode is not implemented at the beginning of the textbook to introduce new concepts, but in the middle or at the end of the textbook to in activities that implement the skills in place value. For example, in T5G1, the students were facilitated to count the total students of girl and boy for each grade include grades 1 to 6 Then, they need to calculate the total number of students by adding the boy and the girl in each grade. This is in line with the theory from the book “*Helping Children Learn Mathematics 9th Edition*”, in which ([Reys et al., 2014](#)) mentioned that hands-on experience with manipulatives is essential in establishing and developing the concept of place value.

Besides those findings, some illustrations are not followed by clear explanations or descriptions. Furthermore, in T3G1, there are no activity titles “*Ayo Mengamati*” (Let’s Observe), “*Ayo Latihan*”

(Let's Practice), and "Ayo Mencoba" (Let's Try). Some activities have no clear instructions. For instance, in T7G1, the students were facilitated to count the total number of objects and write the number in numeral and mathematical notation. However, the material only gives an example without providing instruction on what students have to do in the beginning. This means that the students did not know what they are doing and what skills are involved.

CONCLUSION

In general, the Curriculum 2013 thematic textbooks for grades 1 and 2 that consist of 7 textbooks (different themes) have covered three areas of analysis that are used in this research. *First*, the contents of place value in the thematic textbooks for grades 1 and 2 covers almost all six critical skills required in learning place value that was proposed by Rogers (2014) which are *count, make/represent, name/record, compare/order, and calculate*, except the skill of *rename* that is not developed properly. The skills are introduced, exercised, and assessed according to the stages of place value development. *Second*, the contents of place value in the thematic textbooks for grades 1 and 2 are presented following the stages of place value development (Burris, 2013) which consists of *unitary, decade, sequence, separate, and integrated*. Some textbooks designed for the same stage; T1G1 and T2G1 (the first textbooks for grade 1) for the first stage (*Unitary*), as T6G1 and T7G1 (the last textbooks for grade 1) for the next to last stage (*Separate*). *Third*, the strategy used in teaching the place value content in the thematic grades 1 and 2 textbooks is in accordance compared to representations proposed by Kim and Park (2018) which starts from *realistic, pictorial, language, symbolic, and manipulative (concrete material) modes*. In most of all the textbook, there is a consistently sequential mode that is used, from telling a realistic story, followed by the pictorial mode, then switches slightly to the language, symbolic, and manipulative modes. In this case, the manipulative activity is not only provided to initiate activities in introducing new concepts but provided to use the skills in real-context and other topics. Although all textbooks used all the representations, there still a slight development in using the modes that intend to develop and enhance students' thinking skills from concrete materials to more symbolic (abstract) ideas. This indicates that the developmental in students' thinking patterns were adjusted from concrete to more symbolic models (an abstract concept) according to the theories of children's cognitive development from Piaget and Burner

REFERENCES

- Babakr, Z. H., Mohamedamin, P., & Kakamad, K. (2019). Piaget's cognitive developmental theory: Critical review. *Education Quarterly Reviews*, 2(3). <https://doi.org/10.31014/aior.1993.02.03.84>
- Bruner, J. S. (1951). Personality dynamics and the process of perceiving. In *Perception: An approach to personality*. (pp. 121–147). Ronald Press Company. <https://doi.org/10.1037/11505-005>
- Burris, J. T. (2013). Virtual place value. *Teaching Children Mathematics*, 20(4), 228–236. <https://www.learntechlib.org/p/156678>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education*. McGraw-Hill Humanities/Social Sciences/Languages.
- Gatra, S. (2016). Kemdikbud revisi besar-besaran buku Kurikulum 2013. *Kompas.Com*. <https://edukasi.kompas.com/read/2016/01/07/17291791/Kemdikbud.Revisi.Besar-besaran.Buku.Kurikulum.2013>
- Hutchinson, T., & Torres, E. (1994). The textbook as agent of change. *ELT Journal*, 48(4), 315–328. <https://doi.org/10.1093/elt/48.4.315>
- Kim, Y. R., & Park, M. S. (2018). Effective teaching for place value understanding: A case study of a literacy-integrated math curriculum module. In *Curriculum and Instruction Faculty Publications: Vol. I*. https://digitalcommons.tamusa.edu/edci_faculty/1
- MacDonald, B. L., Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2018). Components of place value understanding: Targeting mathematical difficulties when providing interventions. *School Science and Mathematics*, 118(1–2), 17–29. <https://doi.org/10.1111/ssm.12258>
- McGuire, P., & Kinzie, M. B. (2013). Analysis of place value instruction and development in pre-kindergarten mathematics. *Early Childhood Education Journal*, 41(5), 355–364.

- <https://doi.org/10.1007/s10643-013-0580-y>
- McGuire, P., Kinzie, M. B., Kilday, C. R., & Whittaker, J. E. V. (2010). Children's understanding of two-digit place value: A place for place value in pre-k mathematics instruction. *Special Interest Group, Critical Perspectives in Early Childhood Education: Part 2, Annual Meeting of the American Educational Research Association*, 1–40.
- McLeod, S. (2018). Concrete operational stage. *Simply Psychology*.
<https://www.simplypsychology.org/concrete-operational.html>
- Menteri Pendidikan dan Kebudayaan Republik Indonesia. (2013). Peraturan menteri pendidikan dan kebudayaan nomor 71, tahun 2013, tentang buku teks pelajaran dan buku panduan guru untuk pendidikan dasar dan menengah. In *Peraturan Menteri Pendidikan dan Kebudayaan* (No. 71).
- Merilia, S., Fajaruddin, S., & Arbain, A. (2019). An assessment of an English textbook of vocational school. *Arisen: Assessment and Research on Education*, 1(2).
<https://doi.org/10.33292/arisen.v1i2.46>
- Novianto, A., & Mustadi, A. (2015). Analisis buku teks muatan tematik integratif, scientific approach, dan authentic assessment sekolah dasar. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, 45(1). <https://doi.org/10.21831/jk.v45i1.7181>
- Pambayun, H. P., & Retnowati, E. (2018). Penerapan teknik faded examples untuk meningkatkan kemampuan pemecahan masalah materi pengayaan trigonometri SMA. *Jurnal Riset Pendidikan Matematika*, 5(1), 73. <https://doi.org/10.21831/jrpm.v5i1.12149>
- Piaget, J. (1936). The origins of intelligence in the child. In M. C. (trans.) (Ed.), *Original work published* (Vol. 1977). Penguin.
- Ramda, A. H. (2017). Analisis kesesuaian materi buku teks Kemendikbud matematika kelas VII dengan Kurikulum 2013. *PYTHAGORAS: Jurnal Pendidikan Matematika*, 12(1), 12.
<https://doi.org/10.21831/pg.v12i1.14057>
- Reys, R. E., Lindquist, M. M., Lambdin, D. V., & Smith, N. L. (2014). *Helping children learn mathematics*. Wiley.
- Rogers, A. (2014). *Investigating whole number place value assessment in Years 3-6: Creating an evidence-based developmental progression* [RMIT University].
<http://researchbank.rmit.edu.au/view/rmit:161088>
- Roseni, E. (2014). Albanian case: English textbook evaluation in high schools as part of the english curriculum. *Mediterranean Journal of Social Sciences*, 5(6), 417–421.
<https://doi.org/10.5901/mjss.2014.v5n6p417>
- Ross, S. R. (2002). Place value: Problem solving and written assessment. (research, reflection, practice). *Teaching Children Mathematics*, 8(7), 419–424.
- Setiawan, E. P. (2019). Analisis muatan literasi statistika dalam buku teks matematika Kurikulum 2013. *Pythagoras: Jurnal Pendidikan Matematika*, 14(2), 163–177.
<https://doi.org/10.21831/pg.v14i2.28558>
- Stará, J., Chvál, M., & Starý, K. (2017). The role of textbooks in primary education. *E-Pedagogium*, 17(4), 60–69. <https://doi.org/10.5507/epd.2017.053>
- Suherman, S. (2019). Supplementary reading material for senior high school based on K-13. *Journal of Applied Linguistics, Translation, and Literature*, 1(1), 35–40.
<https://doi.org/10.33292/jalintrali.v1i1.55>
- Utari, T., & Hartono, H. (2019). Muatan penalaran dan pembuktian matematis pada buku teks matematika SMA kelas X Kurikulum 2013. *Jurnal Riset Pendidikan Matematika*, 6(1), 1–13.
<https://doi.org/10.21831/jrpm.v6i1.17002>