The Development of AKM Numerical Question Exercise Book for Junior High School Students

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Abstract

Numeracy has become part of the Minimum Competency Assessment (AKM) used in the National Assessment (NA) since it was established in 2021. However, previous research shows that the numeracy skills of junior high school students are still in the low category. The purpose of this study was to obtain a prototype of a practice book about preparation for dealing with numeracy AKM for junior high school students that were valid, according to experts. This research is development research (R&D) using the Plomp development model, which consists of a preliminary research, a prototyping phase, and an assessment phase. At the end of the development stage, there is a formative evaluation, one of which is to assess the validity of the product development by experts. The instrument used is the validation sheet for the numerical AKM exercise book. The results of this study obtained a prototype of the numeracy AKM practice book for junior high school students, which was categorized as valid with a score of 89 and an excellent classification. In conclusion, the practice book for numeracy AKM questions for JHS/Equivalent fulfills the valid criteria and is suitable for JHS/Equivalent students' preparation for the numeracy AKM.

Keywords: Mathematical Literacy; Minimum Competency Assessment; Numeration; Question Exercise Book.

1

Introduction

The Minimum Competency Assessment (AKM) is part of the National Assessment (NA) which will begin to be implemented in 2021. The AKM serves as a benchmark for achieving educational quality in reading and mathematical literacy (numeration) further to map the quality of Indonesian education with international standards (Tju & Murniarti, 2021). Pusmenjar (Pusmenjar, 2020b) states that there are three main cognitive levels in the numeracy AKM that students must use to answer questions, namely *knowing, applying* and *reasoning*. First, questions at the understanding level are used to assess students' abilities about facts, processes, concepts, and procedures. Second, questions at the applying level assess mathematical abilities in applying knowledge and understanding facts, relations, processes, concepts, procedures, and methods in real situations to solve problems. Finally, the questions at the reasoning level are used to assess students' reasoning abilities in analyzing data and information, making conclusions, and expanding understanding in new situations, including unknown situations or more complex contexts.

Based on the PISA test result conducted in 2018, Indonesia's numeracy aspect was ranked 73rd out of 79 participating countries (OECD, 2019). This result also shows that there has been no increase in Indonesia's PISA results in the last 10-15 years. It shows one basis for implementing – NA as a substitute for the national exam or UN in evaluating the quality of Indonesian education with international standards (Winata et al., 2021). Furthermore, the newly implemented evaluation form certainly makes teachers and students have to adapt to the form of the numeration test given. Meanwhile, PISA questions are dominated by non-routine questions and are questions that can measure the ability to reason, solve problems, argue, and communicate (Hidayati et al., 2020; Maulyda et al., 2019). Therefore, it can be said that good problem-solving skills will provide convenience for students in solving various mathematical problems in learning and everyday life. Meanwhile, basic problems that require problem-solving skills are not only in mathematics but lead to much more complex problems. Solutions to these problems can be found if students master literacy and numeracy skills well (Anderha & Maskar, 2021; Patta et al., 2021).

Mathematical literacy ability (numeration) is an important part of various literacy that must be mastered by everyone (Patriana et al., 2021). Numeration is the ability to think using concepts, procedures, facts, and mathematical tools to solve everyday problems in various contexts relevant to individuals as citizens of Indonesia and the world (Pusmenjar, 2020b, 2020a). Furthermore, according to Han et al. (Han et al., 2017), numeracy is knowledge and skill in using numbers and symbols related to basic mathematics to solve practical problems in various contexts of everyday life and analyze information displayed in various forms (e.g., tables, graphs, and charts) then predict and make decisions based on the interpretation of the analysis results. The results of research conducted by (Cahyanovianty & Wahidin, 2021) show that the numeracy ability of 75% of students at SMPN 7 Tambun Selatan is still in the medium category. Meanwhile, research conducted by (Winata et al., 2021) shows that the numeracy ability of 61.90% of students at MA Darul Ma'wa Phandiredjo is still low. This fact certainly raises concerns for educators when giving non-routine questions to students.

In addition to the results of previous studies, the needs analysis carried out by researchers on teachers and students from several junior high schools in Mataram City, West Nusa Tenggara, also supports the product development carried out by researchers. Based on the survey results, as many as 78% of teachers stated that it was difficult to teach numeracy to students. According to the teachers, sequentially, the topics of numeracy that are the least mastered by students are geometry and measurement, data and uncertainty, and algebra. In contrast, students dominantly control the topic of numbers. This statement is in line with the results of a survey of students, which stated that only 17.6% of students did not master the topic of numbers. Furthermore, 55% of teachers stated that this was due to insufficient learning resources to teach numeracy. In addition, 55% of teachers also stated that students have not been able to solve numeracy problems independently. Finally, the results of this survey also revealed that both teachers and dominant students stated a great need for a numeracy practice book that provides step-by-step practice questions according to cognitive level and is equipped with discussions. Therefore, based on the explanation above, this study aims to obtain a prototype of a practice book about preparation for dealing with numeracy AKM for junior high school students that are valid according to experts.

Methods

This research is a type of development research (R&D) using a research design developed by Plomp (Plomp, 2010). There are 3 phases that researchers need to use in this model: the preliminary, the development (prototyping), and the assessment phase. The preliminary research phase consists of problem identification. It needs analysis, a literature review, and a conceptual or theoretical framework (initial framework) for product development in the form of a numeric Minimum Competency Assessment (AKM) preparation exercise book for junior high school students. Furthermore, at the development phase, namely developing a product prototype to be tested using iterations, each consisting of a small cycle with formative evaluation as the basis for revising/improving the developed product. This evaluation is intended to test the product's validity, practicality, and effectiveness. This evaluation process will be stopped when the data is saturated and ready to be tested with a broader range of subjects. Finally, the assessment phase (summative evaluation) is used to evaluate and conclude whether the developed product has met the specifications determined based on user assessments with a broader scope.

At the formative evaluation phase (the end of the development stage), a validity test must be carried out to determine whether the practice book developed is valid and feasible to use. In other words, this valid criterion means that the developed exercise book can measure what should be measured according to the development objectives. This validity test was carried out by experts, namely two mathematics education lecturers with a minimum level of masters. Furthermore, the instrument used to assess is the experts' validation sheet for the numeracy AKM practice book. The assessment results are used as a reference for making improvements so that the books developed could reach higher quality. The scale used on the validation sheet is a Likert scale of 5, namely (1) Very poor, (2) Poor, (3) Fair, (4) Good, and (5) Excellent. The

number of assessment items on the validation sheet of the practice book on numeracy is 21. Thus, the maximum score obtained in this validation process is 105, and the minimum score is 21. The classification of the quality of the validity of this exercise book on numeracy can be seen in Table 1 (Widoyoko, 2016). If the score reaches a good minimum qualification, this numeracy practice book can be valid and feasible to use.

Table 1. Classification of the Validity of the Numeration Questions Practice Books.

Indicators	Classification
$X > 88,2$	Excellent
$71,4 < X \leq 88,2$	Good
$54,6 < X \leq 71,4$	Fair
$37,8 < X \leq 54,6$	Poor
$X \leq 37,8$	Vey poor

Results

The product produced in this study is a numeracy AKM practice book for junior high school students. This book was compiled by adjusting the topics in the summary section of the material and overall questions based on the topics in the numeracy AKM, namely numbers, geometry and measurement, algebra, data and uncertainty. In general, the structure of this book consists of a cover page, a preface, a table of contents, a summary of the material accompanied by examples of questions from each topic, and practice questions called AKSI (AKM numeracy). In addition to the results of the development in the form of a numeracy AKM question book, this study was also accompanied by the preparation of other research instruments, namely validation sheets, pre-test and post-test sheets for numeracy skills, and questionnaires. Figure 1 below is an example of the cover page of this book.
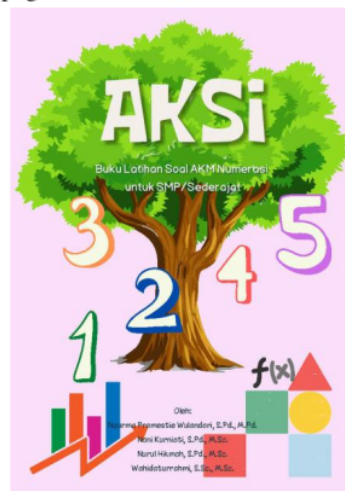

Figure 1. Sample Book Cover

The questions in each AKSI chapter in this book are arranged based on the cognitive level of understanding, applying, and reasoning, with the dominance of questions at the application level. Moreover, this corresponds to the scope of level 4 (grades 7-8) in developing numeracy

AKM questions tested at the junior high school/equivalent level (Pusmenjar, 2020b). The questions used include multiple choice, multiple complex choice, matchmaking, short essay questions, and essay. The dominant portion is in the form of complex multiple-choice questions. Figure 2 below is a piece from the AKSI chapter of this book.

Figure 2. Snapshot of The AKSI Chapter from The Numeracy AKM Question Exercise Book

Whether or not this book is suitable for preparing students to face AKM can be determined by testing the book's validity. An assessment determines the results of the validity of this book carried out by two mathematics education experts with the following criteria: (1) being a mathematics education lecturer at a university and (2) a minimum educational qualification of a master's degree. In addition, this validity test is also carried out to obtain input and feedback from experts to produce a quality numeration practice book that can be used in research on a broader scale.

Validation data in the form of quantitative and qualitative data. Quantitative data in the form of the average value was obtained from the scoring of the validation sheet of the numeration practice book by the validator. Meanwhile, qualitative data is in the form of suggestions and comments from the validator. Suggestions and comments from the validators are used as the material for product revision. Quantitative data from the test results of the validity of the practice book on numeracy are presented in Table 2 below.

Table 2. Quantitative Data from the Validation of the Numeration Problem Practice Book

Validation Description	Results
Number of assessment questionnaire items	21
Maximum score	105
Minimum score	35
Total Score of Validator 1	87
Total Score of Validator 2	91
Average Score	89
Classification	Very Good

The details of the quantitative data on the validity of the practice book questions are presented in Table 3 below.

Table 3. Details of Quantitative Data from the Validation of the Numeration Question Exercise Book

Aspects Assessed	Average Validator Score 1	Average Validator Score 2	Total Average ($\bar{X}$)
Eligibility Contents	4,00	4,29	4,14
Conformity with AKM Numeration	4,50	4,00	4,25
Language	4,00	4,33	4,17
Graphics	4,25	4,75	4,50

Meanwhile, the qualitative data on the validity of the practice book questions are presented in Table 4 below.

Table 4. Qualitative Data Validation Results of Numeration Questions Exercise Book

Validator 1	Validator 2
• There is still a writing error. • Give details to the picture of each flat shape	• Consistent numbering on the material summary • Fix writing errors

Discussion

Based on the validation results described above, improvements are still being made even though the validity of the practice book on numeracy is categorized as very good. Improvements were made based on the notes (qualitative data) provided by the validator, as shown in Table 4. In addition, the lowest score on the average total aspects assessed in this validation process lies in the aspect of content feasibility, which is 4.14. Of course, these two reasons become a solid basis for researchers to continue making revisions so that the quality of the developed numeracy practice book can improve. Furthermore, the product developed also needs to be systematically arranged to facilitate students to learn well (Wulandari et al., 2020).

The feasibility aspect of the content has 7 indicators that are checked for validity. Of the 7 indicators, there are 2 indicators that have the highest score, namely on points: the content of the book can encourage the emergence of independence and innovation, and the point: the book material is presented attractively so that the integrity of the meaning to be conveyed can be maintained properly. Learning independence is one of the things that students are expected to do using this book. The independent learning process carried out by students can make students accustomed to practicing numeracy questions with various cognitive levels and various contexts of questions that are given continuously (Wahyuni, 2017). Furthermore, this learning independence also makes students experience the learning process directly, so that what is learned will be more meaningful and can last in memory longer (As'ari, 2015). So that when implementing AKM students are familiar with the types of questions and are proficient in

6

solving the various problems presented. As a result, students can get maximum numeracy AKM results.

Through this book, students are also given the opportunity to relate mathematical concepts with other subject matter. The existence of cross-material makes the scope of student understanding wider (Purwantoro & Saryantono, 2020). In addition, a summary of the material that satisfies the element of integrity of the material presented is certainly an important thing of this book. Complete material can make it easier for students to recall the material taught in class and can help students as a guide in completing practice questions before checking the results of completion in the discussion chapter. The discussion included in this book serves as a means for students to examine the learning progress they make, namely in terms of successes and failures in the process of practicing the numeracy questions given. Failures and successes obtained by students will have an impact on the level of student satisfaction in the learning process (Puryati, 2017).

In the aspect of conformity with numeracy AKM, there are 4 indicators presented in the validity test sheet. The highest average score was obtained on 2 indicators, namely (1) the questions given in accordance with the cognitive level of AKM numeracy, which was 4.5. This is important because the cognitive level used must adjust to the level that has been determined in the numeracy AKM guidance document for the junior high school / equivalent level, which is at level 4 (grades 7-8). Practice questions are not only used for the purpose of understanding concepts, but more than that. The questions given should be able to provide benefits for students for the benefit of studying at a higher level as well as success in daily life (As'ari, 2015). Furthermore, indicator (2) in the form of questions in accordance with the provisions of the numeracy AKM also obtained an average score of 4.5. The question form presented in this book has met the requirements of the question form in the form of multiple choice, complex multiple choice, matchmaking, short fill, and essay. The largest portion of the questions is in the form of complex multiple-choice questions.

In the language aspect, there are 6 indicators presented. The highest average score, which is 5, is obtained on the indicators of book titles and the titles of parts of the material/book content harmonious, interesting, able to attract interest in reading, and not provocative. The alignment of the title and its parts becomes substantial in a book. Readers will be interested in the title of the book that can attract interest because it will cause curiosity about the content of the book (Sartika & Makmur, 2020). Moreover, with the harmonious title of the parts in the book can also make readers easily use the content of the book.

Table 3 shows that the highest total average result is obtained in the graphic aspect, which is 4.50. The graphic aspect has an important role in the development of a book. An attractive book's physical appearance factor (interface) can make students curious to find out how detailed the book's contents are (Wulandari et al., 2021). More than that, students do not feel bored with a monotonous display. The existence of proportional colours and images in books can arouse students' interest in reading and then raise students' motivation to learn (Sumaji, 2015).

Conclusion

The product developed is in the form of a numerical AKM practice book for junior high school/equivalent students who have met the valid criteria based on an expert assessment. The validation score obtained is 89, with an excellent category. The highest assessment aspect is in the graphic aspect, with a total average score of 4.50. Further research is needed to determine the level of practicality and effectiveness of the products that have been developed.

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Conflicts of Interest

The authors state that there are no conflict of interest regarding the publication of this article. In addition, the ethical issues, including plagiarism, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies, have been completed by the authors.

References

Anderha, R. R., & Maskar, S. (2021). Pengaruh Kemampuan Numerasi dalam Menyelesaikan Masalah Matematika Terhadap Prestasi Belajar Mahasiswa Pendidikan Matematika. *Jurnal Ilmiah Matematika Realistik*, 2(1), 1–10.

As'ari, A. R. (2015). *Mengerjakan soal latihan matematika: hanya agar terjawab dengan cepat dan akurat? March*. https://doi.org/10.13140/2.1.3027.6649

Cahyanovianty, A. D., & Wahidin, W. (2021). Analisis Kemampuan Numerasi Peserta Didik Kelas VIII dalam Menyelesaikan Soal Asesmen Kompetensi Minimum. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 05(02), 1439–1448.

Han, W., Susanto, D., Dewayani, S., Pandora, P., Hanifah, N., Miftahussururi, Nento, M. N., & Akbari, Q. S. (2017). Materi Pendukung Literasi Numerasi. In *Kementerian Pendidikan dan Kebudayaan*. Jakarta: Kemendikbud.

Hidayati, V. R., Wulandari, N. P., Maulyda, M. A., Erfan, M., & Rosyidah, A. N. K. (2020). Literasi Matematika Calon Guru Sekolah Dasar dalam Menyelesaikan Masalah PISA Konten Shape & Space. *JPMI: Jurnal Pembelajaran Matematika Inovatif*, 3(3), 1–10. https://doi.org/10.22460/jpmi.v1i3.

Maulyda, M. A., Hidayati, V. R., Rosyidah, A. N. K., & Nurmawanti, I. (2019). Problem-Solving Ability of Primary School Teachers Based on Polya ' s Method in Mataram City. *PYTHAGORAS: Jurnal Pendidikan Matematika*, 14(2), 139–149. https://doi.org/https://doi.org/10.21831/pg.v14i2.28686

OECD. (2019). PISA 2018 insights and interpretations. In *OECD Publishing*. https://www.oecd.org/pisa/PISA 2018 Insights and Interpretations FINAL PDF.pdf

Patriana, W. D., Sutama, S., & Wulandari, M. D. (2021). Pembudayaan Literasi Numerasi untuk Asesmen Kompetensi Minimum dalam Kegiatan Kurikuler pada Sekolah Dasar

Muhammadiyah. *Jurnal Basicedu*, *5*(5), 3413–3430. https://doi.org/10.31004/basicedu.v5i5.1302

Patta, R., Muin, A., & Mujahidah, M. (2021). Kemampuan Literasi Numerasi Ditinjau dari Gaya Kognitif Reflektif-Impulsif. *JIKAP PGSD: Jurnal Ilmiah Ilmu Kependidikan*, *5*(2), 212–217. https://doi.org/10.26858/jkp.v5i2.20130

Plomp, T. (2010). Educational Design Research: an Introduction. In *An introduction to educational design research: Proceedings of the seminar conducted at the East China Normal University, Shanghai (PR China), November 23-26, 2007* (3rd print, pp. 9–35). Stichting Leerplan Ontwikkeling (SLO).

Purwantoro, A., & Saryantono, B. (2020). Penerapan Pemberian Latihan Soal-soal Kontekstual dalam Meningkatkan Hasil Belajar Matematika. *Hipotenusa Journal of Research Mathematics Education, 3*(2), 127-141.

Puryati, E. (2017). Meningkatkan Hasil Belajar Siswa dengan Menyelesaikan Soal Latihan Matematika Melalui Pembatasan Waktu pada Setiap Pertemuan. *Jurnal PRISMA Universitas Suryakancana, 6*(2), 192-201.

Pusmenjar. (2020a). AKM dan Implikasinya pada Pembelajaran. In *Pusat Asesmen dan Pembelajaran Badan Pengembangan Penelitian dan Pengembangan Perbukuan Kemdikbud*. Jakarta: Pusmenjar, Kemendikbud.

Pusmenjar. (2020b). *Desain Pengembangan Soal AKM*. Jakarta: Pusmenjar, Kemendikbud.

Sartika, I., & Makmur, A. (2020). Pengembangan Modul Pembelajaran Matematika Berbasis Etnomatematika Menggunakan Metode Discovery. *PeTeKa (Jurnal Penelitian Tindakan Kelas dan Pengembangan Pembelajaran), 3*(2), 122-126.

Sumaji. (2015). Pengembangan perangkat pembelajaran matematika dengan model pembelajaran pemecahan masalah untuk meningkatkan kemampuan penalaran matematis. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika UMS 2015*, 966–974.

Tju, M., & Murniarti, E. (2021). Analisis Pelatihan Asesmen Kompetensi Minimum. *Jurnal Dinamika Pendidikan*, *14*(2), 110–116.

Wahyuni, N. (2013). Penggunaan metode drill dalam pembelajaran matematika. *Prosiding Seminar Nasional*, *02*, 399–406.

Widoyoko, E. P. (2016). *Evaluasi Program Pembelajaran*. Yogyakarta: Pustaka Pelajar.

Winata, A., Widiyanti, I. S. R., & Cacik, S. (2021). Analisis Kemampuan Numerasi dalam Pengembangan Soal Asesmen Kemampuan Minimal pada Siswa Kelas XI SMA untuk Menyelesaikan Permasalahan Science. *Jurnal Educatio FKIP UNMA*, *7*(2), 498–508. https://doi.org/10.31949/educatio.v7i2.1090

Wulandari, N. P., Safitri, A. S., Apsari, R. A., Junaidi, J., & Lu'luilmaknun, U. (2020). Pengembangan Lembar Kegiatan Siswa untuk Meningkatkan Kemampuan Number Sense Siswa. *SAP (Susunan Artikel Pendidikan)*, *4*(3), 215–222. https://doi.org/10.30998/sap.v4i3.6284

Wulandari, N. P., Safitri, A. S., Novitasari, D., Salsabila, N. H., & Suliani, M. (2021). The Effect of Using Worksheet on Students ' Number Sense Ability. *Journal of Physics: Conference Series*, *1776*(012023), 1–8. https://doi.org/10.1088/1742-6596/1776/1/012023

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