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Development of Authentic Assessment with Project Based Learning Approach in Primary School Students

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Abstract

This research is a research on the development of authentic assessment instruments. The types of data used in this study are quantitative and qualitative data. Quantitative data comes from scores of assessment experts, learning experts, and practitioners. Qualitative data includes comments and suggestions for product improvements from assessment experts, learning experts, and practitioners. The products produced in this research and development are in the form of Project Task Books and Authentic Assessment Instruments on Project-Based Learning Theme 8. The Project Project, Project Book product, refers to the Authentic Assessment Instrument on Project-Based Learning. The Project Task Book is used in Theme 8 Subtheme 3. Students must complete two project assignments. The results of the product feasibility test show that the Project Task Book is very feasible to implement. First, feasibility is assessed from content validity of 87%, construct validity of 87%, and practicality of 78%. The Authentic Assessment Instrument product on Project-Based Learning Theme 8 refers to three feasibility aspects. First, the feasibility of the guideline target is 83%. Second, the feasibility of the content of the guidelines is 88%. Third, the feasibility of the code of practice is 75%. This product can be an alternative for teachers to assess students' abilities in project assignments. Teachers can use this assessment instrument product more creatively and innovatively, for example, by designing project assignments according to the region. This product can be disseminated in teacher competence, educational journals, and social media.

Keywords Authentic Assessment; PjB; Elementary School

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1. INTRODUCTION

Analysis of the Theme 8 Subtheme 3 teacher's book found only one assessment example per lesson. No project assessment guidelines or planning were conducted in the past week on one subtheme. Grid, shape, and grading techniques. Another analysis of the Technical Manual for Learning and Assessment in Elementary Schools published by the Ministry of Education and Culture (2013) found examples of planning, implementing, and processing values that have been described in every aspect of attitudes, knowledge, and skills, not but detailed and continuous with the criteria for assessment and learning in the teacher's book (Ministry of Education and Culture, 2013). The preparation of manuals and related teacher books will facilitate teachers in developing instruments and implementing instruments. The above problem shows that the teacher's book is the main guideline for teachers in conducting assessments. Still, its implementation has not been optimal because the sample instruments available are only one subject out of three subjects, not equipped with assessment grids, the assessment instruments are not easy to use, assessment guidelines are not practical, and there is no project assessment guide available in the last week in one subtheme. Teachers' lack of knowledge and understanding of assessment results in teachers subjectively assessing students in attitudes, knowledge, and skills. This shows that assessment instruments do not guide teachers in conducting assessments. Authentic assessment is inseparable from learning. The 2013 curriculum uses a thematic learning approach. The application of authentic assessment requires student involvement to know how they are progressing. Teachers and students have the same responsibility for the learning carried out. As Majid (2014) argues, students must know what they want to learn, have flexible time parameters, and be responsible for the tasks they get (Abdul Majid, 2014).

One assessment technique that students can engage in is the self-assessment technique. Hosnan (2014) argues that self-assessment asks students to explain their advantages and disadvantages in achieving cognitive, affective, and psychomotor competencies (Bruce, 2013). Self-assessment is a need for students today and in the work environment. Student involvement in the assessment process can create students' habit of self-reflection so that the learning process will effectively develop skills and cognitive. Students are expected to have a sense of self-control and responsibility for their learning. The Project Instrument Book refers to Authentic Assessment Instruments in Project-Based Learning. This Project Instrument Book consists of the author's introduction, usage guidelines, table of contents, lesson 1, lesson 2, lesson 3, lesson 4, lesson 5, and lesson 6 (Kusaeri & Aziz Safa, 2013).

The 2013 Curriculum concept began to be applied in 2013/2014 to balance soft and hard skills so that students' attitudes, knowledge, and skills can affect success (M Fadillah, 2014). The implementation of the 2013 Curriculum has the aim of developing the potential that exists in students to form human beings who are noble, healthy, knowledgeable, capable, creative, independent, democratic, and have responsibilities as citizens. At the same time, implementing the 2013 Curriculum is to develop capabilities and shape the character of a dignified nation (M Fadillah, 2014). The 2013 curriculum is expected to improve the quality of human resources and national competitiveness by strengthening competencies in attitudes (spiritual and social), knowledge, and skills. The 2013 curriculum goal was achieved by changing the learning paradigm from a teacher-centered to a student-centered approach and using competency-based assessment, replacing test-based assessment with authentic assessment that can measure attitudes, knowledge, and skills. According to the learning process and outcomes (Retnawati & A.C., 2013). He shows his understanding of various cultures' thoughts, motivations, and actions to respond to society and the world of work in the future.

Authentic assessment is a process of collecting student data using various techniques. Abidin's opinion (2016) states that authentic assessment is a process of collecting data on student learning development combined with learning activities through various techniques in various aspects (attitudes, knowledge, and skills) that refer to reality and real situations (O.'Malley & Pierce, 2012). Furthermore, Majid's opinion (2015) states that authentic assessment is a form carried out thoroughly, starting from inputs, processes, and outputs that include aspects of attitudes, knowledge, and skills

using various techniques in conducting assessments (Abdul Majid, 2014). Authentic assessments can be conducted by individual teachers, teachers with teams, or teachers with students. Student engagement is very important in authentic assessment because knowing how they are assessed will improve their learning ability. The higher students' learning ability will indirectly increase their understanding of the learning objectives obtained from reflection activities and self-performance evaluation (Abidin, 2016). Authentic assessment makes students effective players with the knowledge they gain. Students must be able to write, revise, discuss existing problems, provide interesting oral analyses of current events, and collaborate with others in discussions (Wiggins, 2018). The scope of authentic assessment of attitudinal competencies consists of five levels, knowledge competencies consist of six levels, and skill competencies consist of five levels (Nahrowi, 2020). Attitudinal competence is divided into spiritual attitudes (core competence 1) and social attitudes (core competence 2). The attitude competency assessment realm includes accepting or paying attention, responding, assessing or appreciating, managing, and character. Knowledge competencies (core competency 3) cover six low to high levels: remembering, understanding, applying, analyzing, judging, and creating. The scope of authentic assessment that includes competence, attitudes, knowledge, and skills requires teachers to use different assessment techniques to assess students' competence. Therefore, teachers must use techniques that vary according to the characteristics of the assessed ability to obtain valid and useful information. Attitude assessment is an assessment of student behavior. The Ministry of Education and Culture (2016) states that attitude assessment is a behavioral assessment that includes students' spiritual and social attitudes in the learning process of curricular or extracurricular activities. Attitude assessment emphasizes ethics-based character building so that student character is formed according to the learning process. Different characteristics of attitude assessment and assessment of knowledge and skills cause the assessment technique to differ. Self-assessment is one of the attitudinal competency assessment techniques. Abidin (2016) argues that the assessment asks students to explain the advantages and disadvantages of achieving competence using a checklist or assessment scale on the self-assessment sheet. Furthermore, according to Ratminingsih (2017), self-evaluation is an evaluation strategy and, more importantly, a teaching and learning strategy useful for students to monitor what they learn, make adjustments, change their thinking, and improve themselves. Themselves to achieve their goals (Ratminingsih, 2011). In addition, teachers can use self-assessment to collect information about student needs and problems related to the material students have learned.

Based on this description, it is necessary to develop Project-Based Authentic Instruments on Theme 8 P5 Class IV Elementary School. This development research aims to develop an authentic assessment of class IV Theme 8 Subtheme 3 regarding product validity. R reliability and practicality and produce products in the form of authentic assessment instruments in project-based learning Theme 8 Subtheme 3 that are feasible regarding the product's validity, reliability, and practicality. This authentic, project-based assessment instrument is realized as manually used hard files.

2. METHODS

This research uses development research to produce project-based authentic assessment development products. The development model is an authentic assessment model (O'Malley & Pierce, 2004). The selection of this development model is suitable for developing assessment products that can later produce product specifications by the objectives. The O'Malley & Pierce development model has steps such as (1) team building, (2) determining authentic assessment objectives, (3) developing product specifications, (4) conducting professional development on authentic assessments, (5) reviewing previous research on authentic assessments, (6) adapting existing assessments or developing new assessments, (7) conducting assessment trials, and (8) revising assessments. The team formed consists of researchers and teachers. Teachers are chosen to be a team because of identifying problems in the thematic learning process through teacher assistance. When researching, teachers carry out thematic learning processes based on authentic project-based assessment guidelines from researchers.

Determining authentic assessment objectives is the first step to determining problems and conditions in the field. Several steps must be taken to determine development goals. First, analyze teacher needs in authentic assessment of thematic learning in grade IV Elementary School. Teacher needs analysis was conducted by distributing questionnaires and interviews related to authentic assessment and P5 programs on thematic learning. Distribute questionnaires and interviews to students about teacher assessments of students. Second, conduct document analysis by analyzing lesson plans and assessments used or developed by teachers.

After knowing the needs of teachers and students for authentic assessment in thematic learning in the classroom, the third step is to conduct a literature study so that authentic assessment products are developed according to the needs of teachers and students. Next, analyze the deep learning objectives. This is done with the aim that project-based authentic assessment instrument products can assist students in achieving the learning targets set by the curriculum. Previous research reviews are conducted so that researchers know the limitations of previously developed product benchmarks for improvements in previous product development and avoid similar research.

The steps of preparing product specifications are carried out to determine the initial picture of the product of an authentic project-based assessment instrument. Researchers determine the content, writing systematics, and product format of the project-based assessment instrument developed. Determine the content related to the substance of the product being developed, namely the purpose to be measured, the instrument grid, the type of instrument developed, and the assessment rubric. Systematics of writing is concerned with the sequence of product development. Furthermore, the presentation format relates to the use of language and the product's appearance. In this development step, the first thing to do is develop a lesson plan. Detailed learning planning activities will be known with the development of this lesson plan. After that, develop an authentic project-based assessment instrument. This is done because learning and assessment cannot be separated, so RPP develops assessment instruments. The development of assessment instruments is based on standard-setting, authentic task determination, development of assessment tools, and grid preparation for developing questions. This is done because learning and assessment cannot be separated, so assessment instruments are developed by RPP. The development of assessment instruments is based on standard-setting, authentic task determination, development of assessment tools, and grid preparation for developing questions. A complete project-based authentic assessment product is tested with a series of trials to determine the developed product's feasibility, advantages, and disadvantages. Trials are carried out in two ways, namely expert tests and field or empirical tests. Expert trials are carried out by experts in their fields, namely assessment and learning experts. Field or empirical trials involve teachers and students. Once the expert validates the project-based authentic assessment product, the researcher performs revisions according to the expert's notes. Then, conduct empirical or field validation involving teachers and students, resulting in verbal exposure to teacher and student responses regarding the developed project-based authentic assessment instrument. The data obtained from both trials was used to improve the products developed.

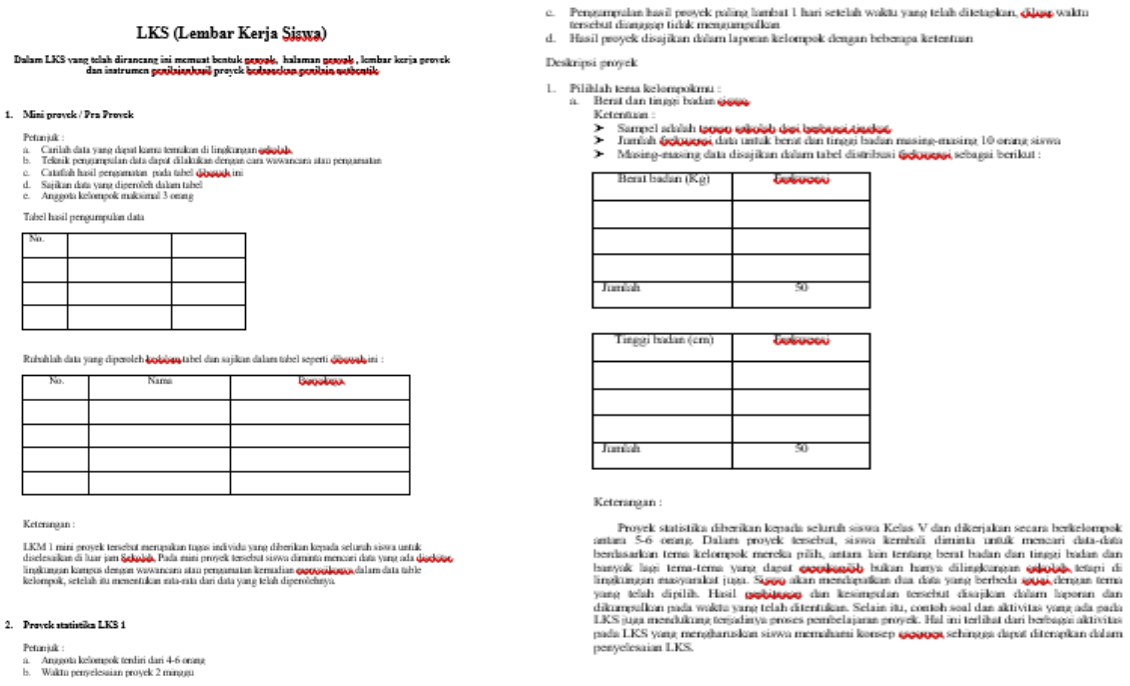
Researchers develop data collection instruments by following the following steps, namely (1) identifying research objectives, (2) making instrument grids in the form of tables containing assessed aspects and assessment indicators, and (3) writing instrument items. In the form of statements, (4) formulating assessment scales, (5) consulting instruments to supervisors, and (6) revising supervisors' suggestions (Fauzi, 2019) (Gall et al., 2007). The data collection instrument developed is based on the requirements of the assessment instrument, which is valid, reliable, and practical. The analyzed data in this study requires qualitative data analysis and quantitative data processing at other stages. Qualitative data analysis is used to process data in the form of suggestions, comments, and responses from assessment results contained in teacher validation sheets and questionnaires. Qualitative data analysis can show the results of the product developed so that it looks unique.

The criteria for achieving instrument validity determine the qualifications of product development

and determine whether or not revisions are necessary, usable, or unusable. In this research and development, a product is said to be valid if it meets the achievement criteria of 71% - 85% achievement criteria and can be categorized as valid with information that can be used with little revision. Data analysis is carried out not only on questionnaires; data analysis is also carried out with reliability tests between raters. The results of class teacher correction using assessment rubrics developed by researchers on the same subjects as student project assignments in elementary schools in the Laweyan Surakarta sub-district. Then, the correction results of the two correctors were analyzed using the SPSS program.

The reliability test between raters carried out has the following steps: (1) collect values from corrector one and corrector 2, (2) conduct normality tests to determine whether the data is normal or not, (3) conduct homogeneity tests to determine population variations that are almost the same, (4) correlation with the SPSS program, (5) decision making and conclude a correlation between corrector one and corrector two scores. Interrater reliability test using the SPSS program: researchers conducted a reliability test using the Spearman Rank correlation test formula in the SPSS program. The Spearman's Rank correlation coefficient test is a non-parametric statistical test (does not require assumptions of normality and linearity). The guideline for interpretation of reliability test analysis is that if the significance value between corrector one and corrector 2 > 0.05, then the assessment rubric developed by the researcher does not correlate. If the correlation value is < 0.05, then the developed assessment rubric is correlated.

3. FINDINGS AND DISCUSSIONS



LKS (Lembar Kerja Siswa)

Dalam LKS yang telah dirancang ini memuat bentuk proyek, halaman proyek , lembar kerja proyek dan instrumen penilaian hasil proyek berbasis on penilaian autentik

1. Mini proyek / Pra Proyek

Petunjuk :
a. Carilah data yang dapat kamu temukan di lingkungan sekitar.
b. Teknik pengumpulan data dapat dilakukan dengan cara wawancara atau pengamatan
c. Catatlah hasil pengamatan pada tabel seperti ini
d. Sajikan data yang diperoleh dalam tabel
e. Anggota kelompok maksimal 3 orang

Tabel hasil pengumpulan data

No.		

Rubahlah data yang diperoleh kedalam tabel dan sajikan dalam tabel seperti seperti ini :

No.	Nama	Data

Keterangan :

LKM 1 mini proyek tersebut merupakan tugas individu yang diberikan kepada seluruh siswa untuk diselesaikan di luar jam sekolah. Pada mini proyek tersebut siswa diminta mencari data yang ada disekitar lingkungan kampus dengan wawancara atau pengamatan kemudian mengelompokkan dalam data table kelompok, setelah itu menentukan nilai-nilai dari data yang telah diperolehnya.

2. Proyek statistika LKS 1

Petunjuk :
a. Anggota kelompok terdiri dari 4-6 orang
b. Waktu penyelesaian proyek 2 minggu
c. Pengumpulan hasil proyek paling lambat 1 hari setelah waktu yang telah ditetapkan, diluar waktu tersebut dianggap tidak mengumpulkan
d. Hasil proyek disajikan dalam laporan kelompok dengan beberapa ketentuan

Deskripsi proyek

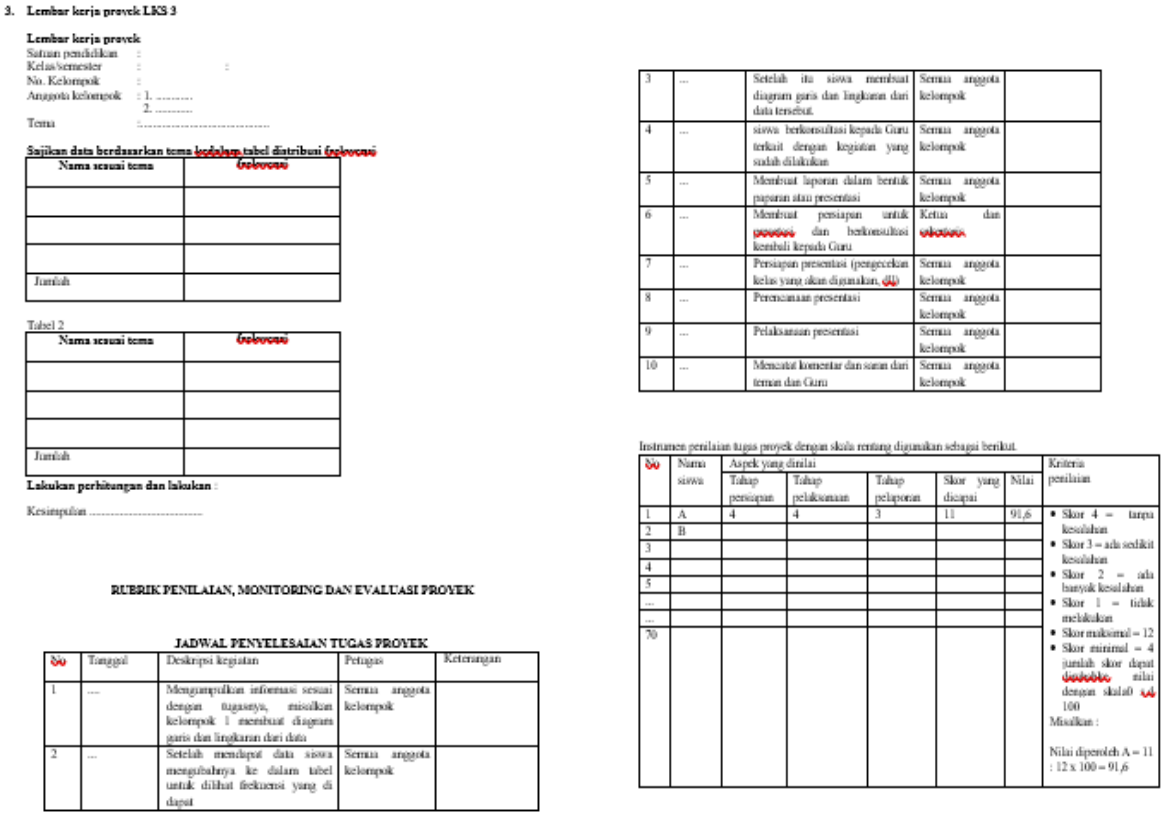
1. Pilihlah tema kelompokmu :
   a. Berat dan tinggi badan siswa
      Ketentuan :
      - Sampel adalah siswa siswi sekolah dan berbasis random
      - Jumlah populasi data untuk berat dan tinggi badan masing-masing 10 orang siswa
      - Masing-masing data disajikan dalam tabel distribusi frekuensi sebagai berikut :

Berat badan (Kg)	Frekuensi
Jumlah	50

Tinggi badan (cm)	Frekuensi
Jumlah	50

Keterangan :

Proyek statistika diberikan kepada seluruh siswa Kelas V dan dikerjakan secara berkelompok antara 5-6 orang. Dalam proyek tersebut, siswa kembali diminta untuk mencari data-data berdasarkan tema kelompok mereka pilih, antara lain tentang berat badan dan tinggi badan dan banyak lagi tema-tema yang dapat ditemukan bukan hanya dilingkungan sekolah, tetapi di lingkungan masyarakat juga. Siswa akan mendapatkan dua data yang berbeda antar dengan tema yang telah dipilih. Hasil pengamatan dan kesimpulan tersebut disajikan dalam laporan dan dikumpulkan pada waktu yang telah ditentukan. Selain itu, contoh soal dan aktivitas yang ada pada LKS juga mendukung terjadinya proses pembelajaran proyek. Hal ini terlihat dari berbagai aktivitas pada LKS yang mengharuskan siswa memahami konsep tersebut sehingga dapat diterapkan dalam penyelesaian LKS.



3. **Lembar kerja proyek LKS 3**

Lembar kerja proyek
Satuan pendidikan :
Kelas/Semester :
No. Kelompok :
Anggota kelompok : 1. .....
2. .....
Tema :.....

Sajikan data berdasarkan tema kedalam tabel distribusi frekuensi

Nama sesuai tema	(relevan)
Jumlah	

Tabel 2

Nama sesuai tema	(relevan)
Jumlah	

Lakukan perhitungan dan lakukan :

Kesimpulan .....

RUBRIK PENILAIAN, MONITORING DAN EVALUASI PROYEK

JADWAL PENYELESAIAN TUGAS PROYEK

No	Tanggal	Deskripsi kegiatan	Petugas	Keterangan
1	...	Mengumpulkan informasi sesuai dengan tugasnya, misalkan kelompok 1 membuat diagram garis dan lingkaran dari data	Semua anggota kelompok	
2	...	Setelah mendapat data siswa mengubahnya ke dalam tabel untuk dilihat frekuensi yang di dapat	Semua anggota kelompok	
3	...	Setelah itu siswa membuat diagram garis dan lingkaran dari data tersebut.	Semua anggota kelompok	
4	...	siswa berkonsultasi kepada Guru terkait dengan kegiatan yang sudah dilakukan	Semua anggota kelompok	
5	...	Membuat laporan dalam bentuk paparan atau presentasi	Semua anggota kelompok	
6	...	Membuat persiapan untuk presentasi dan berkonsultasi kembali kepada Guru	Ketua dan sekretaris	
7	...	Persiapan presentasi (pengecekan kelas yang akan digunakan, dll)	Semua anggota kelompok	
8	...	Perencanaan presentasi	Semua anggota kelompok	
9	...	Pelaksanaan presentasi	Semua anggota kelompok	
10	...	Mencatat komentar dan saran dari teman dan Guru	Semua anggota kelompok	

Instrumen penilaian tugas proyek dengan skala rentang digunakan sebagai berikut.

No	Nama siswa	Aspek yang dinilai			Skor yang diapai	Nilai	Kriteria penilaian
		Tahap persiapan	Tahap pelaksanaan	Tahap pelaporan			
1	A	4	4	3	11	91,6	• Skor 4 = tanpa kesalahan • Skor 3 = ada sedikit kesalahan • Skor 2 = ada banyak kesalahan • Skor 1 = tidak melakukan • Skor maksimal = 12 • Skor minimal = 4 jumlah skor dapat dirubah nilai dengan skala0 sd 100 Misalkan : Nilai diperoleh A = 11 : 12 x 100 = 91,6
2	B						
3							
4							
5							
...							
...							
70							

The products produced in the research and development that have been carried out are Project Instruments and Authentic Assessment Instruments on Theme 8 Project-Based Learning in Grade IV Elementary School. The Project Instrument Book was the first product produced. The Project Instrument was developed to guide and direct students in project-based learning. This Project Instrument Book is used in Theme 8, My Residence Subtheme 3, Proud of My Living Area, comprising six lessons. This Project Instrument Book product has five parts, namely (1) student identity, (2) author introduction, (3) usage guidelines, (4) table of contents, and (5) learning activities for grade IV elementary school students. A self-assessment accompanies the Project Instrument Book.

Product feasibility in content, construct, reliability, and practicality is known by conducting product validation tests on project tasks carried out by assessment experts, learning experts, and practitioners. Qualitative and quantitative data are obtained from validation tests. The validation test data of the Project Instrument Book is presented as follows.

Table 1. Validation Construction

Validators	Percentage	Qualification	Follow up
Assessment experts	85%	It's worth it	Application
Learning experts	90%	It's worth it	Application
Practitioners	85%	It's worth it	Application

Based on the table above, it is known that the validation of the Project Instrument Book product construct by assessment experts reached a percentage of 85% with very feasible qualifications and follow-up implementation, learning experts reached a percentage of 90% with very feasible qualifications and follow-up implementation, and practitioners reached a percentage of 85% with very feasible qualifications and follow-up implementation. The average result of validating the content of the Project Instrument Book product reached 87% with very feasible qualifications and follow-up implementation.

The validation data of assessment experts, learning experts, and product practitioners This Project Instrument Book includes validation of practicum aspects. The data obtained is in the form of qualitative and quantitative data. Quantitative data can be seen in the following table.

Table 2. Project Instrument Practicality Data

Validators	Percentage	Qualification	Follow up
Assessment experts	75%	Worth	Application
Learning experts	70%	Worth	Application
Practitioners	85%	It's worth it	Application
Average	**78%**	**Worth**	**Application**

Based on the table above, it is known that the practical aspects of product validation of Project Instrument Books by assessment experts reach a percentage of 75% with good qualifications and follow-up implementation, and the percentage of learning experts is 75% with the right qualifications and follow-up. Implementation and practitioners reach 85% with excellent qualifications and follow-up implementation. The average result of validating the content of the Project Instrument Book product reached 78% with good qualifications and follow-up implementation. It is known that validation on the target aspects of the product guidelines for the Use of Theme 8 Project-Based Authentic Assessment Instruments by assessment experts reached a percentage of 83% with very good qualifications and follow-up implementation, with learning experts the percentage was 83% with very feasible qualifications and follow-up implementation. Practitioners obtained 83% with very feasible qualifications and follow-up implementation. The average result of the validation target of the Project-Based Authentic Assessment Instrument Use Guidelines in Theme 8 reached a percentage of 83% with very feasible qualifications and follow-up implementation.

The trial activity was carried out for six Theme 8 Subtheme 3 meetings. At the first meeting, learning trial one was carried out. The second meeting of learning trial 2 with project 1. Third meeting of learning trial three that continues project 1. The fourth meeting was a learning trial 4. The fifth meeting is a learning trial 5 containing project 2. Six learning trials were conducted at the sixth meeting, which continued Project 2. Another obstacle found is when students are on a group project assignment. There was one student who always walked around the classroom approaching another group. The next obstacle is when students deliver the results of group discussions in front of the class. Students lack the confidence to deliver their group results.

After product trials, reliability tests of authentic assessment instruments are carried out. The reliability test used is the interval test through this inter-rater reliability test to test the reliability of the assessment results of both correctors on the results of the knowledge and skill domains. The steps in this reliability test are (1) collecting scores from two correctors, (2) conducting a normality test, (3) conducting a correlation test using SPSS type 21, and (4) making decisions about the correlation of the two correctors assessment results. Researchers used the Spearman rank correlation test. The Spearman rank correlation coefficient test is a non-parametric test that does not require data to be normally distributed.

Discussion

The characteristics of elementary school students who still view overall knowledge are the reasons for applying thematic learning models. Thematic learning in its application is student-centered, provides direct experience, the separation of lesson content is not too clear, presents various subject concepts in one learning, flexible, learning outcomes according to student interests and needs, and the principle of learning activities is playful and fun (Rusman, 2013). Project assignments seek to engage students in long-term activities to design, manufacture, and display products to address contextual problems. This aligns with Sani and Hosnan's opinion that students are responsible for long-term project tasks in designing, creating, and displaying products to address contextual problems

(Muhammad Hosnan, 2014). Baran (2018) states that through project-based learning, students can connect their knowledge with real life so that students' learning desire increases. Students will have more opportunities to improve their questioning, discussing, observing, and predicting skills. This aligns with the opinion of Meyer and Wurdinger (2016) that students can learn to work together in groups, communicate their opinions, and encourage learning motivation. The resulting Project Instrument Book product is based on authentic assessment concepts applied to the curriculum. The curriculum emphasizes authentic assessment (Ministry of Education and Culture, 2016) (Moh. Mukhlis, 2012).

This authentic assessment approach measures students' understanding of the subject matter in a real-life context. It emphasizes students' ability to apply knowledge and skills in relevant situations. In an elementary school, authentic assessment may include tasks that ask students to demonstrate their understanding by creating a project, writing assignment, or presentation. In this development study, researchers used the Project Based Learning (PBL) approach, which is a learning method that emphasizes learning through real projects or tasks. Students can work in groups, solve problems, and create useful outcomes. PBL helps students develop critical thinking, collaboration, and problem-solving skills while understanding the context of their knowledge application (Dasmalinda, 2020) (Abidin, 2016).

This product uses various forms and assessment techniques to obtain valid and quality information according to different characteristics. The assessment techniques contained in this product are written tests, projects, and self-assessments. The use of forms and techniques used in the realm of attitudes, knowledge, and skills varies. The assessment techniques include written, oral, product, portfolio, performance test, project, self-assessment, and observation (Ministry of Education and Culture, 2016). Validity refers to the accuracy of interpreting the conformity assessment results of certain objectives or decision-making with high, medium, or low validity (Kusaeri, 2014). The validity test was conducted on three experts: assessment experts, learning experts, and practitioners. The results of the product validity test of the Project Instrument Book developed obtained an average percentage of 85%. This shows that product qualifications are valid and can be used with slight revisions because the average acquisition is in the range of values above 55% (Akbar, 2013). Practicality refers to the ease of execution, inspection, and availability of clear instructions for using the Project Instrument Book product. As stated by Harsiati (2011), tests that have practicality are easy to implement, easy to examine, and provide clear instructions so that other teachers can use them (Muljono, 2018). The practicality score obtained is 76%, with practical qualifications with little revision. Project-Based Authentic Assessment contains the nature of project-based learning, implementation time, assessment procedures, project assignment steps, and assessment rubrics. The nature of project-based learning contains the understanding, characteristics, principles, advantages, disadvantages, and steps of project-based learning. The implementation time describes the time for self-assessment, written test, and project assessment. The assessment procedure describes the steps of self-assessment, written test, and project assessment (Sa'dun, 2015). The project task assignment steps describe the task of observing the diversity of individuals in society and the task of simple experiments making three-dimensional objects. Furthermore, the assessment rubric contains assessment rubrics for subjects Indonesian, Science, Social Studies, SBdP, and Civics. The assessment rubric is arranged based on attitudes, knowledge, and skills. The results of quantitative data analysis of the Authentic Assessment Instrument product on Theme 8 Project-Based Learning from assessment experts, learning experts, and practitioners showed that the guideline objectives obtained an average percentage of 83% with product qualifications, the content of the guidelines obtained an average percentage of 88% with very feasible product qualifications, and the practicality of the guidelines obtained an average percentage of 75% with feasible product qualifications.

Authentic assessment is very important in implementing the 2013 curriculum by looking at assessment and learning oriented to the growth and development of students holistically. Authentic assessment requires learners to demonstrate their knowledge and skills to solve real problems. For the

competencies mastered to be used meaningfully in life, teachers must design meaningful problems and demonstrate the usefulness of the knowledge learned by students in real life, not in the school world.

4. CONCLUSION

This research resulted in Project Instrument Book Products and Authentic Assessment Instruments on Project-Based Learning Theme 8, which was only developed in Subtheme 3 in grade IV SD Negeri Kecamatan Laweyan Surakarta. Products can be disseminated through print-based or online research journals and teacher competency forums. This product is expected to be utilized by various parties to improve elementary school learning quality. First, teachers can use the Authentic Assessment Instruments product in Theme 8, Project-Based Learning, in assessing the Project Instrument Book. Teachers can easily use the product to assess attitudes, knowledge, and skills. Teachers can be more creative and innovative in developing project assignments according to the characteristics of students and the characteristics of the environment around students. In addition, teachers can use other assessment techniques besides self-assessment, written tests, and project assessments. Second, students can use the Project Instrument Book product to be happy and accustomed to doing useful self-assessments in a community environment. Third, other researchers can make this product a source of inspiration, reference, and consideration for future researchers. Other researchers may develop other authentic assessment instruments.

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