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Portfolio Assessment to Measuring Capabilities Communications and Collaborations Students

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ABSTRAK

Penilaian yang dapat mengukur kemampuan kognitif, afektif dan psikomotorik siswa secara komperhensif sangat diperlukan dikarenakan penilaian pada saat ini hanya dilakukan pada akhir pembelajaran dan hanya berorientasi pada tes tertulis dan tugas. Penelitian ini bertujuan untuk menghasilkan asesmen portofolio yang valid dan efektif untuk mengukur kemampuan komunikasi dan kolaborasi peserta didik kelas V Sekolah Dasar. Penelitian ini merupakan jenis penelitian Research and Development (R&D) dengan menggunakan model Borg & Gall. Subjek penelitian yaitu ahli materi, ahli bahasa, dan ahli evaluasi. Metode yang digunakan dalam pengumpulan data yaitu observasi, wawancara, kuesioner dan tes. Instrumen pengumpulan data berupa lembar kuesioner dan tes. Teknik analisis data menggunakan analisis deskriptif kualitatif, kuantitatif, dan statistik inferensial. Hasil penelitian yaitu Penilaian Portofolio mendapatkan kualifikasi valid dan sangat praktis. hasil uji-t menunjukan bahwa terdapat perbedaan antara hasil pretest dan post-test pada peserta didik. Disimpulkan bahwa asesmen portofolio efektif meningkatkan kemampuan komunikasi dan kolaborasi peserta didik. Implikasi penelitian ini yaitu asesmen portofolio yang dikembangkan dapat digunakan guru dalam pembelajaran.

ABSTRACT

Assessments that can measure students' cognitive, affective and psychomotor abilities comprehensively are needed because assessments are currently only carried out at the end of learning and are only oriented to written tests and assignments. This study aims to produce a valid and effective portfolio assessment to measure the communication and collaboration skills of grade V elementary school students. This research is a type of Research and Development (R&D) research using the Borg & Gall model. The subjects of the study are material experts, linguists, and evaluation experts. The methods used in data collection are observation, interviews, questionnaires and tests. Data collection instruments in the form of questionnaire sheets and tests. Data analysis techniques use qualitative, quantitative, and statistical inferential descriptive analysis. The results of the study, namely Portfolio Assessment, get valid and very practical qualifications. The results of the T-test show that there is a difference between the pretest and post-test results in students. It was concluded that portfolio assessment effectively improves students' communication and collaboration skills. The implication of this research is that the portfolio assessment developed can be used by teachers in learning.

1. INTRODUCTION

The role of educators is very important as a facilitator, therefore an educator is expected to be a professional educator who is able to plan learning, lead learning activities, assess the progress of the learning process, utilize the results of assessments in improving the learning process (Darmadi, 2015; Prayitno, 2019; A. Rahman, 2014). Assessment is an effort to collect information or data using measuring tools to see the extent to which learning objectives have been achieved. Assessment is a process of collecting information and making decisions based on the information obtained (Faiz et al., 2022a; Yusuf Aditya, 2016). Assessment is the process of designing, obtaining and providing information that is very necessary to make alternative decisions based on a number of facts or explaining the characteristics of students in learning (Ceylan et al., 2020; Flynn et al., 2018; Juhji & Suardi, 2018; Muhyidin, 2017). Assessments are used by educators to determine students' ability to master the learning objectives that have been set and to identify weak parts of the teaching program that need to be improved. Specifically, the skills assessment

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process is carried out through performance assessment techniques, project assessments and portfolio assessments (Primasari et al., 2021; Sugiri & Priatmoko, 2020).

One form of assessment that can assess students' abilities as a whole, process and results, is portfolio assessment. Portfolio is a collection of work or activities as evidence that shows the development and achievements of a program (Rosidin et al., 2020; Umami, 2018). Portfolios can take the form of assignments carried out by students, students' answers to teacher questions, and notes on teacher observations (Lestari & Nasution, 2022; A. Rahman, 2017). Portfolio assessment characteristics as follows. 1) describes the development or progress of a person's abilities in one field, 2) the work is authentic evidence of a person's abilities, 3) describes a person's abilities comprehensively, especially if planned (Jatiningtyas, 2019; Rosidin et al., 2020). Assessment objectives according to as follows. 1) Keeping track so that the learning process remains in accordance with the plan, 2) Checking-up to find out the weaknesses experienced by students during the learning process, 3) Searching (finding out) to find things that cause the occurrence of weaknesses and errors in the learning process, summing-up concludes whether students have mastered all the specified competencies or not (Faiz et al., 2022b; Rahayu et al., 2017).

The function of assessment is 1) assessment functions selectively (a) students who can be accepted at a particular school, (b) students who can be promoted to class, (c) students who should receive scholarships, (d) students who have the right to leave schools, and so on, 2) the diagnostic function of the assessment used in the assessment is sufficient to meet the requirements, so by looking at the results, educators will know the student's weaknesses and their causes, 3) the assessment function for placement is to determine whether a student should be placed in a group (T. Hidayat & Asyafah, 2019; Schonert-Reichl et al., 2015). Assessment is carried out based on the principles of valid, objective, fair, integrated, open, comprehensive and continuous, systematic, criteria, accountable and accountable, both in terms of techniques, procedures and results (Azizah, 2018; Sabri et al., 2019).

Principles of portfolio assessment as follows. 1) mutual trust involving students actively as the party being evaluated, 2) openness of the teacher as an evaluator who gives grades, 3) portfolio documents need to be kept confidential before being exhibited, 4) proof that the portfolio is shared property is well guarded, 5) the final results of the assessment portfolio is the achievement of competencies, 6) portfolio assessment develops a learning culture, 7) provides students with the opportunity to reflect on the learning process they have carried out, 8) is process and results oriented (Mahmudah et al., 2021; Rosidin et al., 2020). According to (Rosidin et al., 2020) The advantages of portfolio assessment are as follows, 1) assessing abilities as a whole process and results, 2) ensuring school accountability towards students, parents and the community, 3) being individual in nature, each of whom has different abilities, interests, talents, ways of learning, 4) implementing open assessment, 5) through work documents that are arranged systematically and organized, every interested party, parents, principal, school committee, 6) students' abilities are self-evaluating, 7) every student can assess themselves and can reflect. The weakness of portfolio assessment is that it requires time and hard work in monitoring the progress of individual students, as well as in processing work results, giving comments and so on and requires a change in perspective which is always measured by quantitative results towards a more qualitative portfolio learning style (Rosidin et al., 2020; Setianingsih et al., 2024).

The observation results show that educators are very dominant in the assessment process and students are the people being assessed. Assessment is usually carried out at the end of learning and is only oriented towards written tests and assignments. Therefore, the most comprehensive assessment is needed that can measure students' cognitive, affective and psychomotor abilities. In reality, the assessment process carried out so far has only emphasized mastery of (cognitive) concepts which are captured using objective and subjective written tests as measuring tools. This reality encourages students to memorize every time a learning outcomes test is held which will result in students' communication skills not developing and ultimately student cooperation (collaboration) will not work well in learning activities.

Based on the results of the questionnaire needs analysis regarding portfolio assessments to measure students' communication and collaboration skills in the Hang Tuah Cluster, Dente Teladas District, the results show that educators have developed portfolio assessments, but the majority of educators have never developed portfolio assessments to measure students' communication and collaboration skills. As many as 80% of educators still experience difficulties in making good assessments to measure students' level of success in understanding the material being taught. This is because as many as 60% of educators use rubrics in their assessments. Educators stated that when using portfolio assessments, the complicated thing was in creating the rubrics, so most educators chose to use the rubrics in the supporting books provided by the government in the theme books. This results in educators not being optimal in assessing student development as a whole (comprehensive) so that assessment is only oriented towards student learning outcomes with written tests.

This is in line with the research results stated that educators have not developed assessments in the process of assessing learning outcomes in schools optimally, educators only use instruments in supporting books. Instruments that are available without development by educators are of poor quality (Artino et al., 2018; Dewi et al., 2022). This is because educators have not used rubrics in carrying out assessments, so educators have difficulty developing these assessment instruments (Chan & Ho, 2019; Diani & Sukartono, 2022). The assessment system expected in learning can make students actively play a role in learning. In fact, the majority of students' activity is still low in working together (collaboration) in this learning, as shown by 40% of students who collaborate in carrying out tasks given by educators. Observation results at SDN 1 Dente Makmur show that students' low collaboration abilities can be seen from poor cooperation between students. A case was found during initial observations carried out by researchers at SDN 1 Dente Makmur that female students were not willing to share tasks with male students who were considered lazy and less intelligent in their group. This makes some students "who were thrown out of their group" not get a group and form their own group.

Through collaboration, students can work together in groups, construct knowledge, participate to make decisions, seek conclusions to solve problems (Faslia et al., 2023; Zubaidah et al., 2018). This collaborative process can be mapped into various stages, namely face-to-face dialogue, building trust, building commitment to the process, sharing understanding, and then forming intermediate outcomes (Bichler & Lösch, 2019; Lin, 2018). Collaboration indicators in learning to including 1) making good use of discussion time, 2) creating a friendly atmosphere in the group, 3) supporting friends who put forward good opinions, 4) motivating/encouraging members who are less active in the group, 5) actively participating in discussions. Collaboration ability indicators to including love performing tasks in collaboration with accountability and responsibility (love of carrying out tasks in collaboration with accountability and responsibility), effort in work (work effort), time management in work (time management at work), and interaction skills during work (interaction during work) (Wardani et al., 2021; Zubaidah et al., 2018).

Observation results also show that most of the students' communication skills are still low. This was shown by 45% of students who were willing to express their opinion when the teacher asked. This means that the interaction process between students and the interaction between students and teachers is still relatively low. This is because students' awareness of actively answering and asking questions is still low. So that students are only passive and answer when indicated by the teacher. Four aspects used for communication, namely listening, speaking, reading and writing (Ali, 2022; Dhari et al., 2022). There are several aspects of communication that need to be developed. 1) listening, students must learn to listen carefully to comments and other questions, 2) listening carefully can construct systematic knowledge. 3) reading, in this case more emphasis on students' reading of literature and gradually increasing the use of textbooks, 4) discussions, aimed at developing class discussions and helping students practice oral and written communication, writing, more emphasis on expressing ideas in written form, writing is arranged systematically, 5) presenting, including showing an idea or problem again in a new form (Anggraini, 2019; D. R. Hidayat & Abdullah, 2015).

These two problems show that in learning there are still students who have not mastered the collaboration and communication skills that are the demands of the 21st century. One of the reasons is the inaccuracy of the assessment system used by educators in the learning process. Therefore, the most comprehensive authentic assessment is needed that can assess students' cognitive, affective and psychomotor abilities. So, as a solution, learning needs to implement portfolio assessment. This research aims to develop authentic assessments, one of which is the development of portfolio assessments to measure students' effective communication and collaboration skills. Based on this, it is necessary to conduct research by preparing assessments that are easy, clear, practical, and appropriate to the conditions for learning in schools. So, researchers will carry out a development entitled "Development of a Portfolio Assessment to Measure the Communication and Collaboration Skills of Class V Elementary School Students".

2. METHOD

This type of research is research and development or development research. The R&D research used in this research is the Borg and Gall design model. R&D research procedures acc (Aka, 2019; Torang Siregar, 2023), The development procedure used in this research uses seven stages, namely as follows. First, Research and Information Collection At this stage, field studies and literature studies were carried out. Analyzing reference sources, classroom observations, identifying problems found, needs analysis by conducting a survey using a questionnaire distributed to class V students. Based on the results of the questionnaire, it is known that the learning problems experienced by students are students' low communication and collaboration skills. Second, Planning, At this stage the researcher carried out a curriculum analysis to determine basic competency planning, learning indicators, learning objectives, and

material coverage, as well as compiling an instrument grid. Once it has been created, it is continued with designing the portfolio assessment framework and determining the contents of the portfolio sections that will be developed.

Third, Develop Preliminary from of Product, The steps used to develop the initial product form are:analyzing material on Core Competencies, Basic Competencies in accordance with theme 3 Healthy Food, sub-theme 2 The Importance of Healthy Food for the Body, analysis of indicators for each subject in accordance with sub-themes, analysis of student characteristics based on needs and development as a reference for determining portfolio objectives, compiling assignments used for monitor the learning process and to assess the final results in the form of students' learning products, compose learning scenarios that contain preliminary, core and closing activities, prepare specifications for portfolio assessment products that will be developed to measure students' communication and collaboration skills, write portfolio assessment instruments that will be developed to measure students' communication and collaboration skills starting with determining the measurement objectives, instrument grid, instrument form and format.

Preliminary Field Testing, at this stage, initial product design trials are carried out on a limited scale, namely expert validation tests. Expert tests are carried out to find out discrepancies or errors in products made from the construction components, substance components, grammatical components. The data resulting from validation by material experts is used as a reference for revising product I. In this step, data collection and analysis can be carried out using interview and questionnaire methods. At this initial trial stage, researchers use products that have been developed to determine non-conformities in the products being developed. The analysis technique for both expert validators uses a Likert scale. On the expert validation sheet, a score of 1-4 is used, where the number shows the value from lowest to highest. Based on expert validation determinations, there is a percentage classification presented in Table 1.

Table 1. Expert Validation Percentage Qualifications

No.	Percentage	Validity Level
1	76-100	Very Valid
2	51-75	Fairly Valid
3	26-50	Invalid
4	0-25	Very Invalid

Source: (Aminah & Irawati, 2018)

Based on expert validation, the data that has been obtained is used to find out whether there are still discrepancies or errors in the product, then product I revisions are carried out in accordance with the notes and suggestions for improvement from the expert validation. The revised product I is called Product II. After product II was obtained, a large field test was carried out. This test was aimed at class V students at SD Negeri 1 Dente Makmur Tulang Bawang. The aim of this large field test is to determine the practicality and effectiveness of the portfolio assessment developed by measuring students' communication and collaboration skills. Apart from that, to find out the respons students after using portfolio assessment by providing a portfolio assessment practicality test questionnaire to measure students' communication and collaboration skills. Before the teacher gives a portfolio assignment, the teacher gives a self-assessment questionnaire to determine the students' initial abilities, namely communicative and collaborative abilities. This practicality test uses a questionnaire given to students. The student response questionnaire aims to determine student responses which can be used as a benchmark for the quality of assessments that have been developed from a practical aspect. This response questionnaire has four answer choices with assessment criteria as in Table 2.

Table 2. Statement Rating Scale

No.	Positive Statement Score	Statement	Negative Statement Score
1	4	Strongly Agree	1
2	3	Agree	2
3	2	Don't Agree	3
4	1	Strongly Disagree	4

Source: (Hafidhoh & Rifa'i, 2021)

Practicality analysis is carried out using the same steps as validity analysis. The practicality criteria interval in terms of student response questionnaires is explained in Table 3.

Table 3. Practicality Criteria for Portfolio Assessment

No.	Score Range	Criteria
1	3.26 – 4.00	Very Practical
2	2.51 – 3.25	Practical
3	1.76 – 2.50	Less Practical
4	1.01 – 1.75	Not good

Source: (Hafidhoh & Rifa'i, 2021; Hendikawati & Arini, 2016)

Calculate the average percentage of questionnaires to determine the feasibility, suitability, convenience and usefulness of portfolio assessment instruments to measure communication and collaboration skills using the following formula. The results of the analysis of the practicality instrument sheet are interpreted in Table 4.

Table 4. Interpretation of Practicality Questionnaire Scores

No.	Achievement Rate (%)	Response Description	
		Positive Statements	Negative Statements
1	80 < P ≥ 100	Very Good	Very Not Good
2	60 < P ≥ 80	Good	Not Good
3	40 < P ≥ 60	Enough	Enough
4	20 < P ≥ 40	Not Good	Good
5	0 ≤ P ≥ 20	Very Not Good	Very Good

Source: (Hafidhoh & Rifa'i, 2021; Hendikawati & Arini, 2016)

After that, in order to determine the effectiveness of the assessment rubric at this stage the teacher gives a self-assessment questionnaire in the form of a portfolio assessment questionnaire to students after the teacher has carried out the lesson. After that, analyze the results of a large field test to see the practicality of the product by giving practicality test questionnaires to teachers and students. Meanwhile, to see the effectiveness of portfolio assessment to measure communication and collaboration skills by analyzing students' pretest and posttest results. Testing the effectiveness of portfolio assessments is carried out using the following formula (Hafidhoh & Rifa'i, 2021; Purnama, 2016). Testing of differences in the effectiveness of using portfolio assessments to measure students' communication and collaboration skills was carried out using the normalized gain formula (Khaira et al., 2021; Ramdani et al., 2023). Furthermore, the results of the gain calculation can be categorized showed in Table 5. Carry out product revisions, resulting in product III, namely the final product of portfolio assessment to measure students' communication and collaboration skills.

Table 5. Normalized Gain Categories

No.	Gains	Category
1	$0.71 \leq g \leq 1.00$	Tall
2	$0.31 \leq g \leq 0.70$	Currently
3	$0.00 \leq g \leq 0.30$	Low

Source: (Muthi'ik et al., 2018; Ramdani et al., 2023)

3. RESULT AND DISCUSSION

Result

Initial field trials are carried out after the product is prepared by reviewing the product again by validation material experts, evaluation experts and language experts. The results of the recapitulation of validation assessments by evaluation experts, material experts and language experts are presented in the Table 6.

Table 6. Expert Validation Results

No.	Validator	Mark (%)
1	Material	91.12 %
2	Evaluation	90 %
3	Language	97.5 %
Average		**92.87 %**
Criteria		**Very Valid**

The results of expert validation show that the results of validation by experts who assessed the portfolio assessment development design to measure communication and collaboration skills met the criteria with an average score of 92.87% with very valid criteria. Validity testing is carried out to determine the validity of the instrument. The data was analyzed using product moment analysis to measure students' communication and collaboration abilities. This test was carried out at SD Negeri 1 Teladas which was tested on class V students. This school is in the same cluster as SD N 1 Dente Makmur. The validity test consists of 5 communication skills assignments and 8 collaboration skills assignments with test results in the Table 7.

Table 7. Validity Test Results for Communication and Collaboration Abilities

Ability	No.	Validity	Criteria
Communication Skills	1	0.72	Valid
	2	0.79	Valid
	3	0.73	Valid
	4	0.77	Valid
	5	0.75	Valid
Collaboration Capabilities	1	0.55	Valid
	2	0.66	Valid
	3	0.69	Valid
	4	0.53	Valid
	5	0.72	Valid
	6	0.79	Valid
	7	0.73	Valid
	8	0.77	Valid

Next, a word analysis test was carried out to determine the effectiveness of the portfolio assessment to measure students' communication and collaboration skills. The sample t test was carried out in two stages, namely the paired t test. The paired sample t test calculation was carried out using the paired sample t-test formula using SPSS 20. The paired sample t test was used to test whether there were differences before and after being given a portfolio assessment in thematic learning to measure students' communication and collaboration skills. Paired T test For Communication and Collaboration Abilities in Table 8.

Table 8. Paired T test For Communication and Collaboration Abilities

Ability			**Communication**	**Collaboration**
Pair 1			**Pretest – Posttest Results**	**Results Pretest– Posttest**
Paired Differences	Mean		11.9333	4.5
	Std. Deviation		9.07164	8.68980
	Std. Error Mean		1.62931	1.58653
	95% Confidence Interval of the Difference	Lower	-20.13396	3.82184
		Upper	-13.47895	10.31149
t			**-10.315**	**4.454**
df			**28**	**28**
Sig. (2-tailed)			**0.000**	**0.000**

Based on Table 8, the paired t test results of the pretest and posttest to measure students' communication skills obtained a result of 0.000 < 0.05 and the posttest results to measure students' collaboration abilities obtained a result of 0.000 < 0.05. This shows that there is a difference between the pretest and posttest results to measure students' communication and collaboration skills. The increase in communication and collaboration skills can be seen by the difference in average scores on students' communication and collaboration seen from the indicator aspect using an observation sheet that has been tested for validity with 13 valid items as assessment indicators.

Discussion

The product results in this research are in the form of a portfolio assessment to measure students' communication and collaboration skills. This research is research and development with the following seven steps of the R&D research model (Aka, 2019; Torang Siregar, 2023). The validity of the problem-based thematic assessment for measuring students' communication and collaboration skills can be seen from the results of the assessments of three experts, namely evaluation experts, material experts and language experts. Based on the assessment results from three experts, this assessment instrument is theoretically valid because it obtained an evaluation expert score of 90%, a material expert score of 91.12%, and a language expert score of 897.5%. The overall average expert score is 92.87% in very valid criteria.

The product was also tested on practitioners, namely elementary school educators who have master's or bachelor's degrees who are competent in their fields with test results obtained of 89%. After assessing practitioners at this stage, 87% of students will be assessed through small group trials. In line with the results of previous research carried entitled "The Effect of Portfolio Assessment on communication and collaboration skills of Iranian Students"(Ebrahimi et al., 2021; Fathi et al., 2019). The research results showed that students from the experimental group performed better than the control group due to the use of a valid portfolio assessment which was used to improve students' communication and collaboration skills.The research results of the research above are in accordance with theory. When compiling an instrument it is necessary to pay attention to construction or evaluation aspects, material aspects, and language aspects (Efendi et al., 2021; Widiastuti et al., 2023). The existence of assessments that are tailored to needs, communicative, innovative and collaborative is the hope of students because these assessments can enable students to improve communication and collaboration skills. As we know, the 2013 curriculum currently being used requires students to be able to communicate and collaborate.

This is in line with the opinion explaining that communication skills can be interpreted asa dynamic process in which people attempt to share their internal problems with others through the use of symbols (Anggraini, 2019; Iswari, 2017). Meanwhile collaboration can be interpreted as cooperation, working with others effectively in accordance with individual responsibilities and abilities. The term collaboration is often confused with the term cooperation. Through collaboration, students can work together in groups, construct knowledge, participate to make decisions, seek conclusions to solve problems (Faslia et al., 2023; Zubaidah et al., 2018). Based on the results of observations regarding portfolio assessments, educators said that they had not tried to develop portfolio assessments to measure communication and collaboration skills. Even though educators sometimes prepare portfolio assessments for students to use in thematic learning, the portfolio assessments that are prepared are not able to improve communication and collaboration. Apart from that, educators said that there are portfolio assessments that are deliberately purchased and cannot be used to improve students' communication and collaboration skills because these portfolio assessments do not always match the characteristics of students. Therefore, there is a need for portfolio assessments that improve students' communication and collaboration skills in the learning process.

Communication and collaboration assessment instrument products for mapping students' abilities on psychomotor competencies can make it easier and useful for educators in carrying out assessments. So active learning can attract students' interest when they show their abilities and develop their skills through discovery, observation and logical thinking. Apart from that, it can increase the effectiveness, efficiency and alignment of learning with learning objectives (Jeremy et al., 2021; Magdalena et al., 2024). Based on the explanation in the form of expert and practitioner validation test results proven by the quality of portfolio assessments, relevant theories and research which are the basis for reference in developing portfolio assessments, an assessment of the validity of portfolio assessments is obtained using valid criteria or can be used in research and development.

One of the aspects measured in this research is the effectiveness of increasing students' communication and collaboration skills on thematic subject matter. The effectiveness of the learning process regarding the paths, technical efforts and strategies used to achieve goals optimally, precisely and quickly (Hafidhoh & Rifa'i, 2021; Nasser et al., 2021). The effectiveness of portfolio assessments for measuring communication and collaboration skills can be seen from the results of effectiveness tests in large group trials. This effectiveness assessment uses the paired t test which is an analysis technique for comparing the pretest and post-test of data or variables. This technique is used to test whether the communication and collaboration ability scores from the results of this study are significantly different or not from the average of a sample.

The results of the portfolio assessment product effectiveness test for measuring communication and collaboration skills based on the sig (2 tailed) value for communication and collaboration skills are 0.00 < 0.05, so it is concluded that it is effective. Measuring communication and collaboration skills can be seen using the observation sheet for lessons 1 to lesson 3 for each indicator. The results of achieving communication skills obtained an average percentage of 85.2% with high criteria. Meanwhile, the results of

achieving collaboration skills obtained an average percentage of 84.2% with high criteria. The instrument is said to be effective because of the detail and clarity of the assessment in learning.

This is in line with research entitled "The Effect of Portfolio Assessment on communication and collaboration skills of Iranian Students" (Ebrahimi et al., 2021; Fathi et al., 2019) . The research results showed that students from the experimental group performed better than the control group because the use of portfolio assessment was significantly effective in improving students' communication and collaboration skills.The effectiveness of the portfolio assessment to measure students' communication and collaboration skills is used when students work on previously prepared assignments. To improve students' communication and collaboration skills in the learning process requires an innovative and interesting assessment sheet. Apart from that, educators are also expected to have packaged learning in the form of planning and learning experiences that will be provided to students well (Septianti & Afiani, 2020; Ulya, 2021).

The learning product that is appropriate to the current situation is a portfolio assessment which contains questions that are in accordance with KD and the learning objectives to be achieved referring to students' communication and collaboration skills so that using portfolio assessment in this research is more effective than learning without using portfolio assessment. in thematic learning. Assessment is a tool to measure the extent to which students have improved their abilities based on standards. So assessment is a tool used by researchers to measure and collect information about the variables studied (Mediartika & Aznam, 2018; M. S. Rahman, 2016). Based on the research results above as well as relevant theory and research, this portfolio assessment is suitable for assessment because it can overcome communication and collaboration difficulties between students individually and in groups.

4. CONCLUSION

Based on the results of the research and discussion, it can be concluded that the portfolio assessment to measure communication and collaboration skills developed using Borg and Gall's R&D steps for thematic learning for fifth grade elementary school Theme 3 "Healthy Food" Subtheme 2 "The Importance of Healthy Food for the Body" is valid for use in research . This is proven by the results of expert validation with a very valid category for use in learning. Portfolio assessment to measure effective communication and collaboration skills. This is proven by the results of different tests using the t test, which means that it is proven that there are differences in the pretest and posttest results in the samples. The t test results show that there are differences in the communication and collaboration abilities of elementary school students.

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