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Development of Character Assessment Instruments for Elementary School Students in Sikka Regency in Mathematics Subjects Materials for Flat Shapes Based on Android Applications

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Abstract

Development of Character Assessment Instruments for Elementary School Students in Sikka Regency in Mathematics Subjects Materials for Flat Shapes Based on Android Applications is a development research with the formulation of the problem, namely: The assessment model used by the teacher, Design of developing student character assessment instruments, Validity, Reliability and Practicality of student character assessment instruments on Android-based flat-building math subjects. The purpose of the study was to produce an instrument for assessing the character of elementary school students in Sikka Regency based on a valid, reliable, and practical android application. The research method uses research and development (R&D). The development using the Djemari Mardapi model was modified in three stages: the preliminary stage, the development stage, and the evaluation stage. The results of the study resulted in a teacher's guidebook and the application of student character assessment instruments in valid, reliable, and practical mathematics subjects, the instrument was validated by a validator to test the feasibility of the instrument, reliability was analyzed by intraclass correlation coefficients obtained by an average limited trial of 0.783. Large-scale trials average 0.868 and average measure 0.906. One-way ANOVA statistical test obtained a valid value of 0.85. Practicality test highest score 80 practical. In conclusion, the development research resulted in a teacher's guidebook and an application for character assessment for elementary school students in mathematics. Suggestions for teachers to use guidebooks and applications that have been downloaded via Smartphones in classroom learning when conducting learning evaluations.

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INTRODUCTION

Human dehumanization, many people are getting further and further away from God, many humans are getting farther away from other humans, many humans are getting farther away from their environment, many humans are increasingly distant from themselves, and many humans deviate from the values of Pancasila. In a taxonomic orientation where the cognitive domain seems to be more important than other domains, there is a lack of balance between the "thought" and "heart" aspects, the less optimal practice of education and learning for personality development and the lack of attention of educators on students' character (Kurniawan, 2018).

Law Number 20 of 2003 concerning the National Education System Article 3 states that national education functions to develop capabilities and shape the character and civilization of a dignified nation in the context of educating the nation's life, aiming at developing the potential of students to become civilized human beings and fear of God Almighty. Almighty, noble, healthy, knowledgeable, independent, and responsible (UU RI, NO. 20, 2003). The 2013 curriculum prioritizes attitude and behavior competencies in the first place, followed by knowledge and skill competencies (Anugraheni, 2018).

Attitude assessment based on the 2013 curriculum is carried out through observation, self-assessment, and peer assessment techniques using an instrument in the form of a checklist or an assessment scale equipped with a rubric (Dunsmuir et al., 2020). Attitude assessment is a form of assessment that requires teachers to understand the characteristics of each student. One's efforts to actualize the potential of students to shape their attitudes and personality. A mature attitude and personality will grow characters that are in accordance with the goals of character education (Alfansuri et al., 2018).

Attitude and behavioral competence is part of character education. Character education has existed for a long time, but it is still only a complement to learning and the assessment carried out is still simple based on teacher observations and the physical appearance of students (Hilda & Siswanto, 2021). The attitude assessment in Education and National Character that the Indonesian generation wants to build is the value of honesty, confidence, and hard work, with the aim of bringing changes to attitudes and actions that do not lie to oneself and others, always appear confident at every opportunity that comes your way. given, and diligently work hard to get good results, in the Indonesian context, and produce intellectual students (Tausih & Marno, 2021).

Assessment on subjects that are more dominant in the aspect of knowledge is mathematics. Mathematics is a compulsory subject because what is taught to elementary school children must be complex according to experience and the surrounding environment, equivalent to the knowledge of elementary school children (Nursalam, 2016). One of the materials taught in learning mathematics in elementary schools in grade V is the flat-shaped material. The assessment of the character which is considered less important is also very visible in the subjects of the flat wake material due to the absence of a complete assessment instrument. The unavailability of attitude instruments in this case is character, because teachers have difficulty in making assessment instruments. Time is also an obstacle for teachers in making assessment instruments (Surya et al., 2017).

The results of interviews with fifth grade elementary school students in Sikka Regency, East Nusa Tenggara that each of their mathematics lessons are filled with knowledge related to cognitive, memory, intelligence so that over time students become machines that only accept things that increase cognitive abilities. The results of observations

in learning mathematics with flat-shaped materials, there are still some students who think that flat-shaped materials are difficult to learn, besides that there are still many students who are confused between waking up and getting up flat and learning that is not associated with everyday life, so that when doing the task there are some students who are not confident about the task being done and prefer to see the answers of friends, the assessment of learning mathematics on flat-shaped material is prioritized for students' knowledge in understanding the material presented, there is no clear assessment instrument and the teacher has not been able to make instruments character assessment. This is the main reason for teachers to conduct assessments based on appropriate criteria.

Assessors do not yet have a character assessment instrument on flat-shaped material, and find it difficult to assess the character of students in learning mathematics, because mathematics is an exact science that requires students to think more in the cognitive realm so that this condition causes the teacher's reluctance to assess students' character (Astuti et al. al., 2020). Regulation of the Minister of Education and Culture Number 66 of 2013, concerning Attitude Assessment which states that educators assess skill competence through assessment, namely an assessment that shapes students' character to be good (Jamal & Hadromi, 2021). Assessment activities require an instrument as a reference in the process of implementing the assessment (Nada et al., 2021). A good assessment instrument contains questions that accurately investigate whether students understand and apply the concepts of the lesson and contain statements from each specified indicator (Muchtar & Suryani, 2019).

The existence of these problems prompted the author to develop a character assessment instrument in learning mathematics in elementary schools. One alternative solution to overcome the problems presented is that the author will make a product in the form of a guidebook and an assessment application that contains an instrument for assessing student character in math subjects based on Android-based flat shapes (Surahman & Setiawan, 2017). Technology is very influential in the field of education, especially for teachers (Roemintoyo et al., 2022). Technology can facilitate learning that can be used as a learning media and assessment tool (Maiyana, 2018). There are still teachers who have not utilized smartphones to be used as a tool for assessment (Nur & Herni, 2021). Student character assessment applications can make it easier for teachers not to use paper media as observation sheets so that it is more practical (Househ et al., 2017).

The discussion in this study is the development of an instrument for assessing the character of elementary school students in Sikka Regency in mathematics subjects, flat shape material based on an Android application, with the aim of producing an instrument for assessing the character of elementary school students in Sikka Regency in mathematics subjects, flat shape material based on an Android application that valid, reliable, and practical. The practicality test is carried out through workshop activities. Wokshops are held online and offline. Workshop activities are held for training in producing homogeneous knowledge (Sudanta, 2015), testing the application of character assessment that is practical or easy for teachers and teachers also have a guidebook that contains instruments for assessing the character of elementary school students in Sikka district on mathematics subjects. Flat wake android application based. The purpose of this research is not only to produce an assessment application, but also to produce a teacher's manual. The guidebook is used so that teachers can find out how to assess

student character by using an assessment application.

METHODS

This research is a research (Research & Development) which is a limitation of qualitative and quantitative approaches with the development model developed by (Mardapi Djemari, 2008). A qualitative approach is used to obtain factual data during the preliminary study, while a quantitative approach is used to test the validity and reliability of the instrument to be developed, and development is used to develop an application to assess the character of elementary school students in Sikka district in mathematics subjects with flat shapes based on android applications and teacher manuals (Isnaini et al., 2020). The method used in this research is instrument development research. The steps in this study are limited to the eighth step. (Mirdamiwati, at al 2016) These steps were modified and divided into three important stages, namely: Preliminary Study Phase, Development Study, and Evaluation Study. The steps that must be taken include: a preliminary study of the description of the analysis of the findings (factual model), writing the instrument to reviewing the instrument, the development study consisting of trials, analysis, revision, and the evaluation phase which consists of the analysis process and product refinement (Rijali, 2020).

The content validity test of the instrument is based on an expert/expert assessment of N people on an item by using the Aiken's V formula. The assessment is carried out by giving a number between 1 to 4 (Arum et al., 2022). The formula in question is as follows:

$$V = \sum S/[n(c-1)]$$

Table 1. Aiken's V Formula

Bila	lo	=	The lowest validity score (in this case = 1)
	c	=	The highest validity rating score (in this case = 4)
	r	=	Number given by an expert
	s	=	r – lo

Table 1 Aiken's V formula is a process for calculating the validity of the instrument content based on the assessment of n experts on an item, namely by using the Aiken's V formula. Assessment is done by giving a number between 1 to 4.

Reliability test between raters Kappa is used when there are 2 raters, while the ICC inter-rater reliability test is used when there are more than 2 raters. This study uses more than 2 raters so that it uses the correlation coefficient between classes (Duyen & Loc, 2022). The reliability between raters was then tested using the correlation coefficient between classes. Interclass Correlation Coefficients (ICC). The reliability analysis used SPSS version 26.0.

Reliability measurement indicators according to Kurniastuti and Azwar in Guilford (2014) which divide the level of reliability with the following criteria: If Alpha or r count:

Table 2. Cronbach Alpha Table

0.80 < r11 1.00 very high reliability
0.60 < r11 0.80 high reliability
0.40 < r11 0.60 moderate reliability
0.20 < r11 0.40 low reliability
-1.00 r11 0.20 very low reliability (not reliable)

Table 2 Alpha Cronbach is the level of reliability analysis assessment, if the value is -1.00 < r11 0.20 then the reliability is very low

and if the value obtained is 0.80 < r11 1.00 then the reliability is very high.

The practicality test was carried out to see if the product was in the form of a manual and practical android-based applications or not. To test the practicality of the product, the researchers introduced the application to several elementary schools in the city of Maumere by holding workshops and providing an assessment questionnaire. An assessment questionnaire is a form of assessment to test the practicality of an android application-based assessment. The assessment questionnaire is given to the mathematics subject teacher and the teacher assesses it according to the indicators and criteria listed in the assessment questionnaire.

RESULTS AND DISCUSSION

The development of the character assessment instrument for elementary school students in Sikka district based on this android application was tested for validity and reliability which was assessed by experts. So as to obtain the results of the validity test, the results of the reliability test, and the results of the practicality test of the Android-based character assessment instrument application for elementary school students.

The subjects in the study were SDK Yos Sudarso, SD Inpres Iligetang located in Sikka Regency, precisely in East Alok District, and SD Inpres Dihit was in Sikka Regency, Lela District. Researchers conducted research at SDK Yos Sudarso and SD Inpres Iligetang which were located in the city, and SD Inpres Dihit was in the village with the aim that the application could be used in the city and in the village.

Validity Test

Table 3. Table of Results Aiken's V

Validator		I	II	III	IV	V	VI	$\sum s$	V	Kriteria
Item 1	Score	4	4	4	4	4	4	18	1	Valid
	S	3	3	3	3	3	3			
Item 2	Score	4	4	3	4	4	3	16	0.89	Valid
	S	3	3	2	3	3	2			
Item 3	Score	3	4	4	3	4	3	15	0.83	Valid
	S	2	3	3	2	3	2			
Item 4	Score	3	4	3	3	3	4	12	0.66	Valid
	S	2	3	2	2	2	3			
Item 5	Score	4	4	4	4	4	3	17	0.94	Valid
	S	3	3	3	3	3	2			
Item 6	Score	4	4	3	4	4	4	17	0.94	Valid
	S	3	3	2	3	3	3			
Item 7	Score	4	4	4	3	4	4	17	0.94	Valid
	S	3	3	3	2	3	3			
Item 8	Score	4	4	3	4	3	4	16	0.89	Valid
	S	3	3	2	3	2	3			
Item 9	Score	3	4	4	3	4	3	15	0.83	Valid
	S	2	3	3	2	3	2			
Item 10	Score	3	4	3	4	4	4	16	0.89	Valid
	S	2	3	2	3	3	3			

Validator		I	II	III	IV	V	VI	$\sum s$	V	Kriteria
Item 11	Score	4	4	4	4	4	4	18	1	Valid
	S	3	3	3	3	3	3			
Item 12	Score	4	4	3	4	4	4	17	0.94	Valid
	S	3	3	2	3	3	3			
Item 13	Score	3	3	4	3	3	3	13	0.72	Valid
	S	2	2	3	2	2	2			
Item 14	Score	4	4	3	4	4	4	18	1	Valid
	S	3	3	3	3	3	3			
Item 15	Score	2	3	3	3	2	3	10	0.56	Valid
	S	1	2	2	2	1	2			
Item 16	Score	3	3	3	3	3	3	12	0.67	Valid
	S	2	2	2	2	2	2			
Item 17	Score	4	4	4	4	4	4	18	1	Valid
	S	3	3	3	3	3	3			
Item 18	Score	4	4	3	3	3	3	10	0.56	Valid
	S	3	3	2	2	2	2			
Item 19	Score	4	4	4	4	4	4	18	1	Valid
	S	3	3	3	3	3	3			
Item 20	Score	3	3	3	3	3	3	12	0.67	Valid
	S	2	2	2	2	2	2			
Rata-Rata								305	0.85	Valid

Based on table 3 Aiken's coefficient ranges from 0-1, for content validity test items V1 = 1 (item 1), V2 = 0.89 (item 2), V3 = 0.83 (item 3), V4=0.66 (item 4), V5=0.94 (item 5), V6=0.94 (item 6), V7= 94 (item 7), V8=0.89 (item 8), V9= 0.83 (item 9), V10=0.89 (item 10), V11=1 (item 11), V12=0.94 (item 12), V13=0.72 (item 13), V14=1 (item 14), V15=0.56 (item 15), V16=0.67 (item 16), V17=1 (item 17), V18=0.56 (item 18), V19=1 (item 19), V20=0.67 (item 20). The average value has a score of 0.85 so it can be said that the instrument used has a high validity above 0.50.

Table 4 Case processing summary shows the total cases tested and the number of valid values. Furthermore, from the validation instrument, there are several inputs from the validator, and input from the validator states that the character assessment instrument for elementary school students in the mathematics eye of flat-shaped material based on the android application is "appropriate to use with revision" with the results of the comparative test between expert validation as follows Table 5.

Table 4. Table Case Processing Summary

		N	**%**
Cases	Valid	20	100.0
	Excludeda	0	0
	Total	20	100.0

Table 5. Comparative Test Between Expert Validation ANOVA

		Sum of Squares	df	Mean Square	F	Sig
Between People		12.958	19	.682		
Within People	Between Items	1.942	5	.388	1.953	.093
	Residual	18.892	95	.199		
	Total	20.833	100	.208		
Total		33.792	119	.284		

Grand Mean = 3.54

Table 5 ANOVA Comparative Test, in column sig. The obtained value of P (P-Value) = 0.93 thus at the level of significance > 0.05 with the conclusion that the value obtained was no significant difference in the average validation based on the four groups of experts.

Reliability Test

The level of agreement (Reliability) between the six raters can be explained by calculating the reliability coefficient between raters using the Interclass Correlation Coeficient coefficient.

Table 6. Interclass Correlation Coefficient Test Expert

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlationb	Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.448a	.262	.667	5.866	19	95	.000
Average Measures	.830c	.680	.923	5.866	19	95	.000

Table 6 Calculation of ICC using SPSS 26.0 shows that the price analysis of a rater (expert) is 0.488, while the consistency rater is 0.830 which means it has a high level of stability. If the reliability coefficient lies between 0.80-1.00, it is included in the very high category.

Table 7. Statistics Reliability

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.830	.832	6

Table 7 Calculation of Cronbach's Alpha uses SPSS 26.0 to determine the reliability of the measured item. The table shows the results of the reliability test with Cronbach's Alpha which is 0.830 out of 6 variable items. The level of reliability with the criteria of a reliability value of 0.830 is high. It can be concluded that the items of the character assessment instrument for elementary school students are acceptable (Acceptable).

Limited Scale of Test

Results of the limited trial are in the form of an instrument for assessing the character of elementary school students in mathematics subjects, flat building materials based on android applications that are ready to be used for testing. A limited-scale trial was carried out with a rater taken from the mathematics teacher of SDK Yos Sudarso Maumere in class V. This was done so that when the rater made an assessment, he could avoid misinterpretation of the assessment items.

Table 8. ICC Reliability Test Limited Scale

Intraclass Correlationb		95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.425a	.225	.656	4.696	19	76	.000
Average Measures	.787c	.593	.905	4.696	19	76	.000

Table 8 ICC Reliability Test with a limited scale Single Measures (reliability of an evaluator) has 0.425 and Average Measures (average reliability of three raters) has a score of 0.787, it can be interpreted that the instrument has very high stability seen Average measure 0.80. Based on the results obtained that the instrument has high stability, it can be seen from the value obtained 0.787 > 0.5 which means the instrument can be said to be reliable. Then, to find out whether there is a difference between raters, a one-way ANOVA test is performed.

Table 9. One Way Anova Limited Trial

		Sum of Squares	df	Mean Square	F	Sig
Between People		15.310	19	.806		
Within People	Between Items	.160	4	.040	.233	.919
	Residual	13.040	76	.172		
	Total	13.200	80	.165		
Total		28.510	99	.288		
Grand Mean = 3.43						

Table 9 One Way Anova limited scale test, the value obtained can be seen in column Sig. Obtaining the result of a value of 0.919 thus at the level of significance 0.919 > 0.05, so that the conclusion obtained is that there is no difference between the raters. After a limited trial, the instrument was rearranged in preparation for a large-scale trial. The process was carried out at SD Inpres Iligetang Maumere and SD Inpres Dihit. The results of the expanded trial are displayed in the large-scale trial data section.

Broad-Scale Test A wide

Large -scale trial was conducted with the help of six raters drawn from the mathematics teachers of SD Inpres Iligetang Maumere and SD Inpres Dihit. The observations from each rater were processed or analyzed using the Interclass Correlation Cofficients formula.

Table 10. Large-cale ICC Reliability SD Inpres Iligetang Maumere

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation[b]	Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.524[a]	.337	.726	7.594	19	95	.000
Average Measures	.868[c]	.753	.941	7.594	19	95	.000

ICC (Interclass Correlation Cofficients) shows the comparison between the variation caused by the measured attribute and the overall measurement variation. The following is the principle of the ICC (Interclass Correlation Cofficients) test:

If the ICC coefficient value is > 0.6 or p value & Alpha (0.05), then the perception between researchers and data collectors is the

same. If the ICC coefficient value <0.6 or p value & Alpha (0.05), then the perception between researchers and data collectors is different.

Table 10 The measuring instrument has adequate stability if the ICC between measurements is > 0.50, high stability if the ICC between measurements is 0.80, indicating the average value of the three raters has high stability, it can be seen from Average Measures is 0.868 (Very High), while Single measure is 0.524. Overall, the instruments used at SD Inpres Iligetang have high stability on average.

Table 11. One Way Anova Trial Area of SD Inpres Iligetang

		Sum of Squares	df	Mean Square	F	Sig
Between People		17.950	19	.945		
Within People	Between Items	.100	4	.025	.284	.888
	Residual	6.700	76	.088		
	Total	6.800	80	.085		
Total		24.750	99	.250		
Grand Mean = 3.45						

Table 11 The value obtained can be seen in the column Sig. Obtaining a value of 0.888 thus at a significance level of 0.888 > 0.05, so that the conclusion obtained is that there is no difference between the raters.

Table 12. Large Scale ICC Reliability Test SD Inpres Dihit Intraclass

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlationb	Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.617a	.439	.791	10.684	19	95	.000
Average Measures	.906c	.824	.958	10.684	19	95	.000

Table 12 Test results at SD Inpres Dihit using the Interclass Coefficient Correlation show that the average value of the four raters has high stability, as can be seen from the Averange Measure 0.906 (Very High), while the average for Single Measure is 0.617 as a whole, it can be concluded that the results The instrument assessors used in SD Inpres Dihit have high stability on average.

Table 13. One Way Anova Test Trial Large Scale SD Inpres Dihit

		Sum of Squares	df	Mean Square	F	Sig
Between People		20.300	19	1.068		
Within People	Between Items	.167	5	.033	.333	.892
	Residual	9.500	95	.100		
	Total	9.667	100	.097		
Total		29.967	119	.252		
Grand Mean = 3.48						

Table 13 The values obtained can be seen in the Sig column. Obtaining a value of 0.892, thus at a significance level of 0.892 > 0.05, so that the conclusion obtained is that there is no difference between the raters. From the results of the analysis using the ICC (Interclass Corellation Coefficient) the instrument has high reliability stability, in

testing with One Way Anova to determine the level of difference of opinion from raters there is no difference, so the developed instrument can be used with high stability.

Practical test

The practicality of the instrument was carried out to determine whether the instrument made by the researcher was easy and suitable for use by mathematics teachers in elementary school or not, the practicality test was carried out by conducting online and offline workshops

Table 14. Recapitulate Result Of Practical Data Test

No	Responden																			
item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	3	3	3	3	4
2	4	4	3	4	4	3	3	3	3	3	3	3	4	4	4	4	2	3	3	4
3	3	4	3	3	4	3	4	4	3	4	3	3	4	3	4	3	3	4	3	4
4	3	3	4	3	3	4	3	3	3	4	4	3	4	4	4	4	3	4	3	3
5	4	4	3	4	4	3	3	4	3	3	4	3	4	4	4	3	3	3	3	4
6	4	4	4	4	3	4	3	3	3	3	3	3	4	4	4	4	2	3	3	3
7	3	4	4	3	4	3	3	4	3	3	3	3	4	4	4	3	3	4	3	4
8	4	3	4	4	4	3	3	3	3	4	4	3	4	4	4	4	2	4	3	4
9	3	4	3	3	3	3	3	4	3	4	3	3	4	4	4	3	3	3	3	3
10	4	4	4	4	3	3	3	3	3	3	4	3	4	4	4	4	3	3	3	3
11	4	4	4	4	4	4	3	4	3	3	3	3	4	4	4	3	2	4	3	4
12	4	4	4	4	4	4	3	3	3	3	3	3	4	4	4	3	2	4	3	4
13	3	3	3	3	3	3	3	4	3	3	4	3	4	4	4	3	3	3	3	4
14	4	4	4	4	4	4	3	3	3	4	3	4	4	4	4	4	3	3	3	3
15	3	2	3	2	3	2	3	4	3	3	2	3	4	4	4	4	3	4	3	4
16	3	3	3	3	3	3	3	3	4	2	3	3	4	4	4	4	3	4	3	3
17	4	4	4	4	4	4	3	4	3	3	3	3	4	4	4	3	3	3	3	4
18	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	4
19	4	4	4	4	4	4	3	4	3	3	3	3	4	4	4	3	3	4	3	4
20	3	3	3	3	3	3	3	3	3	4	4	3	4	4	4	3	3	4	3	3
Total	71	76	71	68	71	67	62	70	62	66	66	61	80	79	80	68	55	70	60	74

Table 14 The results of the calculation of the teacher's response to the practicality of the character assessment instrument for elementary school students in the mathematics subject matter of flat shapes based on the android application obtained information that for all aspects, the lowest practicality value was 55 and the highest was 80 out of 20 teacher respondents. The percentage value of the score obtained is 60% - 100%. Based on the score criteria made by the researchers, it was concluded that each respondent assessed that the character assessment instrument for elementary school students in mathematics subjects with flat shapes based on android applications was practical and very practical.

The results of instrument validation by experts will be analyzed using the AIken's v formula and ICC (Interclass Correlation Coefficient) with the help of SPSS calculations. The results can be seen that the coefficient of the analysis of the accuracy of the indicator scores on variables and dimensions is more than 0.50 (> 0.50), it is said to be valid and the coefficient of the analysis of the accuracy scores of the sub-indicators/items against the indicators is also more than 0.50 (> 0.50) so that the instrument made is quite good and is considered to have adequate content validity but suggestions from experts are still being revised. The instrument

was validated by 6 experts to get input, suggestions, and scores.

The results of the expert validation test using expert judgment obtained various inputs from experts in addition to the validation results in the form of values per aspect of the validator. It appears that the results of the general validation of the six raters on the character assessment instrument for elementary school students in the mathematics subject matter of flat shapes based on the android application can be used as seen from the expert judgment using Aiken's V. In terms of the average value per aspect, namely the suitability aspect of the assessment aspect. characters with indicators, instrument grids, task items, assessment rubrics, and overall physical appearance get a score of 305 with an average score of 0.85 so that when converted into categories, it is said that the instrument used has high validity above with valid category (> 0.30). This means that overall it can be said that the character assessment instrument is valid.

It can be seen from the results of the reliability of the character assessment instrument obtained using the ICC (Interclass Correlation Coefficient) of 0.708, in the limited trial of the Yos Sudarso SDK of 0.787 and in the broad-scale trial of 0.868 at SD Inpres Iligetang Maumere, and 0.906 at SD Inpres Dihit categorized As reliable, the instrument has a very high stability quality, and a one-way ANOVA test is carried out to determine whether there are differences between raters. The test shows that there is no difference of opinion between raters so that the instrument can be used.

The results of the assessment of the practicality of the instrument were carried out by means of a virtual workshop attended by elementary school teachers in Sikka Regency. The purpose of the practicality test of the instrument developed is to determine the user's response related to the ease in assessing the character of elementary school students in mathematics subjects with flat shapes. The results of the practicality test carried out show that the percentage of ideality in all aspects has the lowest practicality value of 55 and the highest is 80 of the 20 teacher respondents. The percentage value of the score obtained is 60% - 100% and is categorized as Very Good (SB), which means that the instrument for assessing the character of elementary school students in mathematics subjects based on flat shapes based on android applications is very practical to use.

DISCUSSION

This discussion is a renewal of previous research, research that developed a character assessment instrument. The assessment instrument is appropriate to be used to assess the character of elementary school students. Research from Yoyo Zokaria to see how far the students' character development is, character assessment is needed. Based on this research, the researcher developed an appropriate assessment instrument to be used by teachers. This is also in line with research from Zuliani Dewi with the result that the implementation of character assessment in mathematics learning in elementary grade IV is rarely done because teachers find it difficult to assess student character. Assessment for the affective domain in learning is carried out without the right process and tends not to be objective, because there is no valid and reliable character assessment instrument, and there is no teacher to develop independently. Research using instrument testing on students, reliability testing and practicality testing on teachers, and the results of the study created a module as an assessment. From Zuliani's research, the researchers carried out an update by developing an instrument for assessing the character of elementary school students in mathematics subjects based on valid, reliable and practical Android Applications. The assessment application makes it easier for teachers to assess the character of students, researchers also make product guidebooks for teachers in assessing the character of elementary school students in mathematics.

The research tested the instrument based on the assumption of the results of the research conducted that the instrument character of elementary school students in Sikka district in mathematics subjects with flat shapes carried out by teachers was very good, researchers did not directly teach and assess students, researchers only gave directions to subject teachers mathematics. The subjects of the research trials were 3 (three) elementary schools, namely SDK Yos Sudarso, SDI Iligetang, SDI Dihit and only for fifth grade students. has been modified into 3 steps, namely: 1) Preliminary Study, 2) Development Study, and 3) Evaluation Study. The instrument with the instrument for assessing the character of elementary school students in mathematics subjects based on the android application that was developed was limited to valid, reliable and practical flat-shaped materials.

Researchers can provide knowledge about the results of this study to teachers in assessing the character of students by using an assessment application.Teachers get an assessment application and a guidebook that contains the assessment of the character of elementary school students in mathematics subjects and tutorials on the use of assessment applications so that teachers are younger in assessing character by using an assessment application. The results of this study also add to the product guidebooks and android applications in technology development and motivate teachers to make good assessment instruments.

CONCLUSION

The results of the research on the development of character assessment instruments for elementary school students in mathematics subjects with flat shapes based on android applications that have been carried out can be concluded as follows:

The results of the instrument design obtained the determination of character assessment instruments, instrument grids, observation sheets, and assessment android applications. the character of elementary school students in the mathematics subject matter of flat shapes. The validation of the character assessment instrument for elementary school students in the mathematics subject matter of flat shapes was tested for content validity, the results of the assessment obtained from the validation of experts stated that the instrument for assessing the character of elementary school students in the mathematics subject of flat shape material was appropriate to be used as a form of assessment. The results of the practicality test of the character assessment instrument for elementary school students in mathematics subjects based on Android applications are very practical to use.

This student character assessment application makes it easier for teachers to assess student character in the ongoing learning process. This manual is used as a reference to obtain information and instructions in carrying out an activity and to provide guidance to the reader in carrying out the steps to be taken according to the instructions in the book. The results of the development of the character assessment instrument for elementary school students in Sikka Regency in mathematics subjects with flat shapes in the form of guidebooks and android-based applications. The compiled guidebook contains a description of the character assessment of elementary school students, the purpose of the assessment, an assessment instrument grid, an assessment instrument rubric, assessment instrument indicators, tutorials using applications, author profiles, the assessment process and a recapitulation of student assessment results.

SUGGESTIONS

The results of the development of the character assessment instrument for elementary school students in Sikka Regency in the mathematics subject of this android-based flat shape material, with the following

suggestions: for teachers to use it as a reference or guide in assessing student character, it is hoped that SD Sikka district teachers can provide material about the importance of character and training for teachers to make assessments so that teachers during the assessment process pay attention to assessment indicators so that the assessment process takes place objectively. Schools are expected to further develop the potential of information technology to improve learning in schools, such as providing training on Android-based assessment using Android smartphones as a medium.

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