

ANALYSIS OF VALIDITY, RELIABILITY AND FEASIBILITY OF STUDENT CONFIDENCE ASSESSMENT INSTRUMENTS

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ABSTRAK

Penelitian ini merupakan bagian dari penelitian pengembangan asesmen rasa percaya diri siswa untuk sekolah dasar. Tujuan dari penelitian ini adalah untuk mengetahui validitas isi dan reliabilitas dari sebuah instrumen. Instrumen yang dikembangkan berupa lembar angket. Analisis isi dan lembar observasi menggunakan Koefisien V oleh Aiken's sedangkan Reliabilitas menggunakan *Alpha Cronbach* dengan bantuan Ms. Excel. Hasil penelitian ini menunjukkan bahwa: lembar angket berupa rubrik penskoran dan penelitian ini terbukti valid, tertinggi dengan koefisien V Aiken s 0,74 dan reliabel dengan koefisien Cronbach's Alpha = 0,76 yang berarti tinggi. Uji kelayakan instrumen juga menunjukkan 100% butir pernyataan layak untuk digunakan. Berdasarkan hasil penelitian tersebut maka asesmen peningkatan rasa percaya diri siswa ini layak digunakan.

Kata kunci: validitas isi, reliabilitas, kelayakan, instrumen angket

ABSTRACT

This research is part of a research on the development of student self-confidence assessment for elementary school. The purpose of this study was to determine the content validity and reliability of an instrument. The instrument developed was in the form of a questionnaire sheet. Content analysis and observation sheets used Coefficient V by Aiken's while Reliability used Cronbach's Alpha with the help of Ms. Excel. The results of this study indicate that: the questionnaire sheet in the form of a scoring rubric and this research proved valid, the highest with a coefficient of V Aiken s 0.74 and reliable with a coefficient of Cronbach's Alpha = 0.76 which means high. The instrument's feasibility test also shows 100% of the statement items are eligible to be used. Based on the results of this study, the assessment of increasing student self-confidence is appropriate to use.

Keywords: content validity, reliability, feasibility test instrument of observation

INTRODUCTION

Instruments according to the Big Indonesian Dictionary are research facilities in the form of a set of tests and so on to collect data as processing material. Suharsimi Arikunto (2010: 203) argues that, "instruments are tools that are selected and used by researchers in their activities to collect data so that these activities become systematic and made easier by them." Evaluation tools or instruments in Suharsimi (2012: 40-51) a tool is something that can be used to make it easier for someone to carry out tasks or achieve goals more effectively and efficiently. Then according to Anas Sudjiono (2011: 4) that "judging is the activity of making decisions about something based on oneself or holding on to good or bad measurements, healthy or sick, smart or stupid, and so on." Suatu instrumen tidak dapat langsung digunakan, melainkan harus diuji kevalidannya terlebih dahulu. Hal ini dilakukan agar terbukti bahwa instrumen yang digunakan untuk mengukur sesuatu adalah valid dan layak digunakan. Oleh karena itu uji validitas dilakukan sebelum penelitian dilaksanakan. Anderson dalam (Suharsimi Arikunto, 2006: 64) mengemukakan, "*a test is valid if it measures what it purpose to measure.*" Sebuah instrumen atau tes dapat dikatakan valid apabila tes tersebut mengukur apa yang hendak diukur.

Validity comes from the word validity which means the extent to which the accuracy and accuracy of a measuring instrument performs its measurement function (Azwar 1986). In addition, validity is a measure that shows that the variable being measured is really the variable that the researcher wants to examine (Cooper and Schindler, in Zulganef, 2006)

Meanwhile, according to Sugiharto and Sitinjak (2006), validity relates to a variable measuring what should be measured. Validity in research states the degree of accuracy of the research measuring instrument for the actual content being measured. Validity test is a test used to show the extent to which the measuring instrument used in a measure measures what is being measured. Ghozali (2009) states that the validity test is used to measure the legitimacy or validity of a questionnaire. A questionnaire is said to be valid if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire.

An instrument besides having to be valid must also be reliable. Reliability comes from the word reliability. The definition of reliability is the constancy of measurement (Walizer, 1987). According to Sugiharto and Situnjak (2006) reliability refers to an understanding that the instruments used in research to obtain information used can be

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trusted as a data collection tool and are able to reveal actual information in the field. Ghozali (2009) states that reliability is a tool for measuring a questionnaire which is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if one's answers to statements are consistent or stable from time to time. The reliability of a test refers to the degree of stability, consistency, predictability, and accuracy. Measurements that have high reliability are measurements that can produce reliable data

The development of an instrument for assessing student self-confidence is carried out by developing an instrument in the form of a questionnaire which is filled out by students guided by the teacher. Filling out the questionnaire was carried out independently even though the process was guided by the teacher. Guidance for filling out the questionnaire was carried out to avoid misunderstandings by students in understanding the statements in the questionnaire.

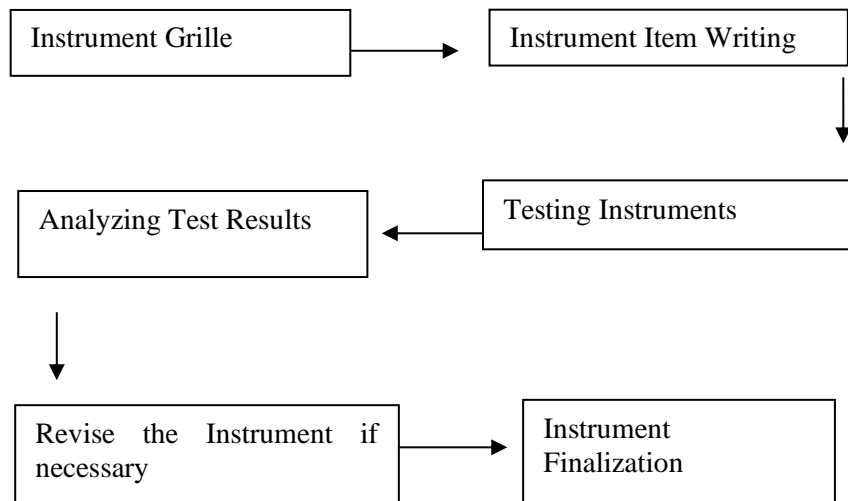
In conducting research on the effectiveness of the Contextual Teaching and learning model based on information technology to increase self-confidence and student learning outcomes there are several obstacles, including that self-confidence cannot be measured using tests. So, researchers make a questionnaire that can measure students' self-confidence.

Based on the description above, it is considered necessary to analyze the confidence instrument quantitatively so that the quality of the instrument can be known. The quality of the instrument can be seen from the results of the validity and reliability tests. Therefore the title of this study is "Analysis of the Validity and Reliability of Student Confidence Assessment Instruments"

METHOD

This research is an instrument research with a questionnaire technique (questionnaire) self-confidence of elementary school students. By using the content analysis method regarding the study of the validity and reliability of instruments for a study. Instruments that have met the validity and reliability standards can be used for the measurement stage.

Scheme / Flow of Questionnaire Research (Questionnaire)



The flow of making data instruments is needed to determine the validity and reliability of the instrument. The method used is to try out the instrument followed by validity and reliability tests. Validity testing is done by testing the construct validity (construct validity). Construct validity testing is by questioning whether the questions in the instrument are in accordance with the relevant scientific concept (Nurgiantoro, 2012: 339). Thus, the questions can be accounted for scientifically in their field.

Instrument validation is a measure that shows the levels of validity or authenticity of an instrument. A valid instrument has high validity. Conversely, an instrument that is less valid means it has low validity. Validity test was carried out with Aiken's.

The reliability of this student's self-confidence instrument was tested with the Alpha Cronbach formula. Cronbach's Alpha is a measure of reliability that has values ranging from zero to one (Hair et al., 2010: 92). According to Eisingerich and Rubera (2010: 27) the minimum Cronbach's Alpha reliability level is 0.70. There are two reasons why researchers use a minimum Cronbach's Alpha reliability value of 0.70. First, the reliable Cronbach's Alpha (0.70), can provide support for internal consistency.

The average variance and composite reliability exceeds the recommended threshold (Bagozzi and Yi, 1988, in Eisingerich and Rubera, 2010: 27). Second, because researchers follow previous research conducted by Eisingerich and Rubera (2010: 27).

RESULTS AND DISCUSSION

Results

a. validity

The validity of the instrument can be viewed from two aspects, namely the validity of the entire instrument and the validity of the instrument items. This confidence instrument was analyzed for its validity using "Aiken's validity coefficient"

Aiken (1985) formulates the Aiken's V formula to calculate the content-validity coefficient which is based on the results of an assessment by a panel of experts of n people on an item in terms of the extent to which the item represents the construct being measured. The formula proposed by Aiken is as follows (in Azwar, 2012)

$$V = \sum s / [n(C-1)]$$

$$S = r - lo$$

Lo = lowest rating score (eg 1)

C = the highest rating score (eg 4)

R = the number given by the appraiser

Validity has several criteria as follows:

Table 1
Validity Criteria

Nilai Validitas	Interpretasi
0,81 – 1,00	Very high
0,61 – 0,80	Tall
0,41 – 0,60	Enough
0,21 – 0,40	Low
0,00 – 0,20	Very low

(Suharsimi Arikunto, 1991 : 29)

Table 2

The results of the validation of the Confidence instrument using Aiken's V

Items	Appraiser 1		Appraiser 2		Appraiser 3		ΣS	n (c-1)	validity	Validity Category
	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)				

Items	Appraiser 1		Appraiser 2		Appraiser 3		$\sum S$	n (c-1)	validity	Validity Category
	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)				
1	3,33	2,33	3,33	2,33	3,56	2,56	7,22	9,00	0,80	Very high
2	3,22	2,22	3,33	2,33	3,33	2,33	6,89	9,00	0,77	Tall
3	3,33	2,33	3,33	2,33	3,22	2,22	6,89	9,00	0,77	Tall
4	2,78	1,78	3,33	2,33	3,78	2,78	6,89	9,00	0,77	Tall
5	2,78	1,78	3,44	2,44	3,56	2,56	6,78	9,00	0,75	Tall
6	2,78	1,78	3,44	2,44	3,56	2,56	6,78	9,00	0,75	Tall
7	3,78	2,78	3,33	2,33	3,56	2,56	7,67	9,00	0,85	Very high
8	3,00	2,00	3,33	2,33	3,33	2,33	6,67	9,00	0,74	Tall
9	2,78	1,78	3,44	2,44	3,44	2,44	6,67	9,00	0,74	Tall
10	3,33	2,33	3,11	2,11	3,44	2,44	6,89	9,00	0,77	Tall
11	2,89	1,89	3,00	2,00	3,44	2,44	6,33	9,00	0,70	Tall
12	3,00	2,00	3,11	2,11	3,22	2,22	6,33	9,00	0,70	Tall
13	3,22	2,22	3,33	2,33	3,22	2,22	6,78	9,00	0,75	Tall
14	2,89	1,89	2,78	1,78	3,44	2,44	6,11	9,00	0,68	Tall
15	2,78	1,78	3,22	2,22	3,44	2,44	6,44	9,00	0,72	Tall
16	3,11	2,11	3,00	2,00	3,44	2,44	6,56	9,00	0,73	Tall
17	3,22	2,22	3,11	2,11	3,11	2,11	6,44	9,00	0,72	Tall
18	3,33	2,33	2,89	1,89	3,67	2,67	6,89	9,00	0,77	Tall
19	3,44	2,44	3,22	2,22	3,22	2,22	6,89	9,00	0,77	Tall
20	2,89	1,89	2,89	1,89	3,33	2,33	6,11	9,00	0,68	Tall
21	3,56	2,56	3,00	2,00	3,33	2,33	6,89	9,00	0,77	Tall
22	3,22	2,22	3,11	2,11	3,67	2,67	7,00	9,00	0,78	Tall
23	3,22	2,22	3,33	2,33	3,33	2,33	6,89	9,00	0,77	Tall
24	3,22	2,22	3,00	2,00	3,11	2,11	6,33	9,00	0,70	Tall
25	3,22	2,22	3,00	2,00	3,11	2,11	6,33	9,00	0,70	Tall
26	3,44	2,44	3,78	2,78	3,00	2,00	7,22	9,00	0,80	Very high
27	2,89	1,89	3,00	2,00	3,00	2,00	5,89	9,00	0,65	Tall

Items	Appraiser 1		Appraiser 2		Appraiser 3		ΣS	n (c-1)	validity	Validity Category	
	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)	Skor (R)	S (R - Lo)					
27	2,78	1,78	3,22	2,22	3,00	2,00	6,00	9,00	0,67	Tall	
29	2,78	1,78	2,89	1,89	3,11	2,11	5,78	9,00	0,64	Tall	
30	3,11	2,11	3,33	2,33	3,00	2,00	6,44	9,00	0,72	Tall	
									Highest	0,85	Very high
									Lowest	0,64	Tall
									Average	0,74	Tall

The results of validation with Aiken's V show that questions from 1 to 30 are valid and even in statement items number 1, 7 and 26 fall into the category of very high validity.

a. Reliability

This research instrument was tested for reliability with Alpha Cronbach's formula

$$r_{11} = \frac{k}{k - 1} \times \left\{ 1 - \frac{\sum S_i}{S_t} \right\}$$

r_{11} : The value of reliabelita

K : Lots of statement items

S_i : varian total

$\sum S_i$: Number of score variants per item

In this confidence instrument, both the results of the assessment of Expert A, Expert B and Expert C are all reliable. The following is the calculation of instrument reliability:

Table 3.

Calculation of Reliability of Self-Confidence Instruments

Account	Expert A	Expert B	Expert C
K	30	30	30
k-1	29	29	29

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$\frac{k}{k-1}$	$\frac{30}{29} = 1,0345$	$\frac{30}{29} = 1,0345$	$\frac{30}{29} = 1,0345$
$\sum S_i$	11,66666667	11,333	10,69444
S_t	46,69444444	41	37,611
$\frac{\sum S_i}{S_t}$	$\frac{11,66666667}{46,69444444} = 0,24985$	$\frac{11,333}{41} = 0,2764$	$\frac{10,6944}{37,611} = 0,2843$
$1 - \frac{\sum S_i}{S_t}$	$1 - 0,24985 = 0,75015$	$1 - 0,2764 = 0,7236$	$1 - 0,2843 = 0,7156$
$r_{11} = \frac{k}{k-1} \times 1 - \frac{\sum S_i}{S_t}$	$1,0345 \times 0,75015 = 0,776$	$1,0345 \times 0,7236 = 0,7485$	$1,0345 \times 0,7156 = 0,7403$
Reliability Description	Tall	Tall	Tall

The criteria for the reliability coefficient according to Guilford (Ruseffendi, 2005: 160) are as follows:

Table 4. Validity Criteria

Value	Information
$r_{11} < 0,20$	Very Low
$0,20 \leq r_{11} < 0,40$	Low
$0,40 \leq r_{11} < 0,70$	Keep
$0,70 \leq r_{11} < 0,90$	Tall
$0,90 \leq r_{11} < 1,00$	Very High

Based on the calculations and criteria above, the instrument is included in the high reliability criteria with r_{11} at expert A = 0.776, expert B 0.7485 and expert C = 0.7403.

a. Due Diligence

$$\text{Eligibility Score} = \frac{\sum X}{\sum S} \times 100\%$$

$\sum X$ = Earned score

$\sum S$ = Maximum score (in this instrument the maximum score is 150)

Eligibility has criteria according to Arikunto (2009) are as follows:

Table 5. Eligibility Categories

No.	Score in (%)	Eligibility Categories
1	< 21 %	Very Unworthy
2	21 – 40 %	Not Worth It
3	61 – 80 %	Proper
4	81 – 100 %	Very Worth It

Below is an analysis of the feasibility score of the confidence instrument:

Table 6. Eligibility Score Analysis

NO	Rated aspect	Expert A	Expert B	Expert C	Expert A	Expert B	Expert C	Average Eligibility Score per Aspect	Eligibility Criteria per Aspect
		Total Aspect Score	Total Aspect Score	Total Aspect Score	Eligibility Score	Eligibility Score	Eligibility Score		
1.	Compatibility of statement items with indicators	96	108	106	64,00	72,00	70,67	68,89%	Worthy
2.	The accuracy of the formulation of statement sentences	93	92	91	62,00	61,33	60,67	61,33%	Worthy
3.	Relevance of statement items with everyday life	110	89	107	73,33	59,33	71,33	68,00%	Worthy
4.	The suitability of the statement items with the characteristics of elementary school students	88	97	92	58,67	64,67	61,33	61,56%	Worthy

NO	Rated aspect	Expert A	Expert B	Expert C	Expert A	Expert B	Expert C	Average Eligibility Score per Aspect	Eligibility Criteria per Aspect
		Total Aspect Score	Total Aspect Score	Total Aspect Score	Eligibility Score	Eligibility Score	Eligibility Score		
5.	Sentences use good and correct language	87	92	107	58,00	61,33	71,33	63,56%	Worthy
6.	Sentences do not lead to multiple interpretations	96	93	99	64,00	62,00	66,00	64,00%	Worthy
7.	Statements can reveal feelings self-confidence that students have	90	104	99	60,00	69,33	66,00	65,11%	Worthy
8.	Item statements related to research objectives	92	98	102	61,33	65,33	68,00	64,89%	Worthy
9.	The statement points are written in language that is easy to understand	92	91	96	61,33	60,67	64,00	62,00%	Worthy

Based on the calculations and criteria above, all statement items in the self-confidence assessment questionnaire are appropriate to use.

Discussion

Based on table 2 above, it can be seen that all the statement items submitted are valid. Even the statement items number 1, 7 and 26 are included in the high validity category. Whereas in statement items number 2, 3, 4, . 25, 27, 28, 29, 30 are included in the high validity category. So 100% of valid statement items are in the high validity category by

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dividing 10% very high validity and 90% high validity. Therefore the 30 statement items are feasible and valid to be used in measuring elementary school students' self-confidence.

Meanwhile, based on table 3 above, it can be seen from a series of assessments by 3 experts showing reliable results for the proposed self-confidence instrument. This reliability shows that the self-confidence assessment instrument is steady/consistent when used.

Based on table 6 above, it can be seen that the 30 statement items in the self-confidence assessment questionnaire are appropriate for use in research to increase student self-confidence.

CLOSING

1. Conclusion

Based on the discussion above, it can be concluded that:

- a. The validity test using the Aiken's V test found that out of the 30 statements submitted, all were valid with the lowest validity being 0.64 (high validity criteria) and the highest being 0.85 (very high validity criteria). With these results it can be seen that the 30 statements submitted all of them are valid and appropriate to be used to measure students' self-confidence.
- b. The reliability test used is a test using the Cronbach Alpha coefficient. The reliability test of the three experts showed reliable results, which means that the third reliable/consistent/steady confidence instrument was used. In expert A the confidence instrument gets a reliability value of 0.776. Expert B gets a reliability value of 0.75 and expert C the confidence instrument gets a reliability value of 0.74, which means that all experts have a high reliability instrument.
- c. The feasibility test shows that 100% of the statement items are feasible to use in research on increasing self-confidence.

2. Suggestion

- a. It is recommended for further research that the instrument be tested by more than 3 experts so that the data obtained is more valid and reliable.

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