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Development and Construct Validation of Indonesian Students Self-Confidence Scale Using Pearson Product Moment

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ABSTRACT

The purpose of this study is to develop and validate based on construct validity and sampling validity on a self-confidence scale that can measure student self-confidence at the high school level by adapting self-confidence indicators and adjusting indicators according to the character of students in Indonesia an age range of 16-18 years. total of 405 students from several senior high schools in Indonesia participated in this study. Respondents came from 15 schools in several regions in Indonesia. The validity test uses Pearson Product Moment which is useful for determining the validity or suitability of the instruments used by researchers in measuring and obtaining research data from respondents. while the reliability test used Alpha Cronbach the Self Confidence Scale were said to be reliable (0.794). The basis for taking the Pearson validity test is if the significance value is <0.05 then the items in the instrument are declared valid. And based on the r value of the product moment table with 405 respondents, the significance level value of 5% is more than <0.098 , the result is that the instrument scale item is also said to be valid. Based on the results of the Pearson validity test, 11 self-confidence scale statement items were declared invalid or invalid because the significance level value $<5\%$ was smaller <0.098 . 11 invalid statement items were declared invalid so that there were 45 items of self-confidence scale statements that were declared valid and reliable. And it can be concluded that the 45 items are declared valid and become a valid and reliable self-confidence scale and can be used to measure student self-confidence. And become instruments in a self-confidence scale that can be used to measure the level of self-confidence of high school students, especially in Indonesia.

Keywords: Development, construct validation, instrument scale, self-confidence.

INTRODUCTION

The Indonesian education system has undergone many substantial changes to ensure its quality is on par with developed countries. Various problems have been studied and appropriate solutions have been taken to overcome these problems (Suranto, 2019) the objectives of this study include: (1. One of the problems of education in Indonesia is the low self-confidence of students. Self-confidence is one aspect of personality that is a belief in one's ability so that it is not influenced by others and can act as you wish, is happy, optimistic, tolerant and responsible enough (Cook et al., 2015; Gürler, 2015) Self-confidence become a belief that someone has that he is able to behave as needed to get the results as expected so that in his actions he is not too anxious, feels free to do things according to his wishes and responsibilities for his actions, is polite in interacting with people others, have a drive for achievement and be able to recognize one's own strengths and weaknesses (Federičová et al., 2018; Oney & Oksuzoglu-Guven, 2015; Pettersson, 2018) The formation of a confident attitude is a process of learning how to respond to various stimuli from outside himself through interaction with his environment (Lawal, A. M., Idemudia, E. S., & Adewale, 2017).

Self-confidence is not a trait that is inherited (innate) but is obtained from life experiences, and can be taught and instilled through education, so that certain efforts can be made to build and increase self-confidence (Benabou, 2014; Schneider et al., 2018; Tymes et al., 2016), thus self-confidence is formed and

developed through the learning process in one's interaction with the environment. This dependence on other people's judgments is one of the characteristics of a person who lacks self-confidence. The characteristics of a confident person are: independent, selfless, tolerant, ambitious, optimistic, not shy, confident in their own opinions and not excessive (Unver et al., 2017).

Individuals who are not confident are usually caused because the individual does not educate himself and is just waiting for people to do something to him. Confidence is very useful in every situation, self-confidence also states someone is responsible for their work (Nadiyah & Arina, 2019). The more individuals lose a confidence in themselves, then other people will make themselves more developed. In this case,

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humans use their internal functions as social beings who in their development need other people as well as solving the problems they are facing (Harding, 2017).

Several studies have shown that self-confidence in adolescents can be seen in the attitude that accepts themselves as they are (Fitri et al., 2018; Hariko & Iddil, 2017; Zufriadi Tanjung, 2018). Self-acceptance is an attitude that reflects pleasure in relation to one's own reality. This attitude is a manifestation of satisfaction with the quality of one's real abilities. Adolescents who are satisfied with their quality will tend to feel safe, not disappointed and know what they need, so they can be independent and not depend on others to decide things objectively. Adolescents who are confident also tend to have a positive image and self-concept (Burnett, 1994; Macher et al., 2013). There are people who feel they have lost their sense of self-confidence in almost all areas of their lives, possibly related to self-crisis, depression, loss of control, feeling helpless to look at the bright side of the future, and so on (Campos et al., 2015). There are also people who feel confident in what they do or in what they do. There are also people who feel less confident when facing certain situations or circumstances (Liu et al., 2019; Schneider et al., 2018; Vanaja & Geetha, 2017). The various conditions above are actually something normal in the practice of life, in the sense that they have been experienced by all humans.

There are several scales that can be used to measure the level of self-confidence of students (Daeli & Kurnianingtias, n.d.; Stankov et al., 2015; Vivianne Garant et al., 1995). At present, however, Indonesian researchers have found only a few scales that specifically address self-confidence. In this case the researcher uses the confidence indicator to create a self-confidence measurement scale which is then adjusted and adjusted to the measurement needs (Rutter, 2012). Self-confidence indicators used. The self-confidence scale cannot be used directly to measure student self-confidence because it is still general in nature. However, it is suitable for adaptation and use for students who are at the stage of adolescent development. The concept of self-confidence is one and universal, because of its different applications and the existence of human life in different cultures. However, the difficulties faced will be different (Şar et al., 2010). The scale also needs to be adapted to academic life related to social and student learning and validated for use in Indonesia.

The fundamental difficulty in measurement in social sciences and psychology is how to carry out quantitative weighting of latent qualitative phenomena (Andrich & Pedler, 2019). These phenomena include attitudes, character, personality, and academic resilience. Measurements in psychological studies show that 95% of them are still being developed based on the Classical Test Theory (CTT) approach (Rachman & Napitupulu, 2017) especially Information and Communication Technology (ICT). The CTT rests on the

assumption that the visible score (X) is the sum of the pure (T) and error (E) scores. This error refers to various uncontrollable situational conditions, such as fatigue, environmental regulation, etc. (Rachman & Napitupulu, 2017) especially Information and Communication Technology (ICT).

The validity of developing self-confidence instruments will be tested (Taherdoost, 2018). Validity in a research instrument is to show the achievement or success of a tool in measuring what is being measured (Borsboom et al., 2004). In this study using two validities, namely logical validity, namely validity which in principle includes the content / construct validity, which is determined based on the judgment of the experts and the sampling validity is an instrument related to testing how well a test sample can present the total content coverage the research.

Therefore, this study aims to develop and validate based on content validity and sampling validity on a self-confidence scale that can measure student confidence at the high school level by adapting the indicator of self-confidence based on Lauster (1997) and adjusting the indicator according to the character of students in Indonesia. The scale developed can be used as an assessment instrument for intervention (Unver et al., 2017). Furthermore, the high school level student confidence scale will be validated using content validation and sampling validity to produce more holistic information about the instrument and better meet the definition of measurement (Daeli & Kurnianingtias, n.d.; Stankov et al., 2015). It is hoped that the confidence scale can be used and follows the background conditions in Indonesia because there is no confidence scale specifically used to measure the confidence of high school students in Indonesia.

METHOD

The purpose of this study is to develop a confidence scale obtained based on the results of the validity and reliability of the instrument. This study uses quantitative methods. The quantitative approach is very suitable to be applied to determine research respondents who have characteristics such as attitudes, behaviors and interests that are similar to the population as a whole (Mohd Norakmar Omar & Siti Noor Ismail, 2021). The use of questionnaires as research instruments facilitates the process of gathering information more easily and quickly, especially involving large study areas

Research Respondents

A total of 405 students from several senior high schools in Indonesia participated in this study. Respondents came from 15 schools in several regions in Indonesia. Respondents consisted of 177 male (44%) and 228 female (56%) students with an age range of 16-18 years, mean age 17 years (SD = 0.9). The respondent's first language is Indonesian. All respondents

voluntarily participated and received an explanation of the research objectives provided by the researcher through the school and the names of the respondents were coded to maintain the confidentiality of the respondents.

Research Instrument's Scale

One important step in developing instruments is the development of components / dimensions and indicators. An indicator is anything that clearly and consistently explains the definition (Suranto, 2019) the objectives of this study include: (1. The instrument used was a questionnaire with five measurement constructs consisting of fifty-six items. The questionnaire was developed under theory, research, and available literature (Ramdani et al., 2020). The six measurement constructs used are indicators of optimism, confidence in one's own abilities, rational and realistic, responsible and objective (Santoso & Hidayati, 2021). The content / construct validity test is carried out by a judgment expert who specializes in self-confidence. Some students were also invited to provide input and suggestions for the instrument being developed. The instrument was then discussed again with the research team to test the latest version of the instrument (Md Ghazali, 2016). The instrument developed was a questionnaire with a 4-point Likert scale. The choice of answers starts from very suitable, appropriate, not suitable, very inappropriate.

The validity test uses Pearson Product Moment which is useful for determining the validity or suitability of the instruments used by researchers in measuring and obtaining research data from respondents. The basis for taking the Pearson validity test is if the significance value is <0.05 then the items in the instrument are said to be valid. And based on the r value of the product moment table with 405 respondents, the significance level value of 5% is more than <0.098 , the result is that the instrument item is also said to be valid.

Measurement of item reliability using Cronbach's Alpha. reliability test is a test that shows whether an instrument used to obtain information can be trusted to reveal information in the field as a data collection tool (Mohajan, 2017). m

$$r_x = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma_t^2}{\sigma_x^2} \right)$$

r_x = reliability sought

n = number of question items

$\sum \sigma_t^2$ = the amount of variance in the score of each item

σ_x^2 = total variance

A questionnaire is said to be reliable or reliable if a person's answer to a statement is consistent over time. The level of reliability is expressed by a value called the reliability coefficient, ranging from 0-1. The reliability coefficient is

denoted by r_x is the index case being sought. Reliability testing uses Alpha Cronbach's formula. the instrument is said to be reliable if the Cronbach alpha value is > 0.6 .

RESULT

The results obtained in this research are how an instrument can be used properly according to the validity of the content and in a constructive way. We can see the validity in the table below with the characteristics of the respondents in the table.

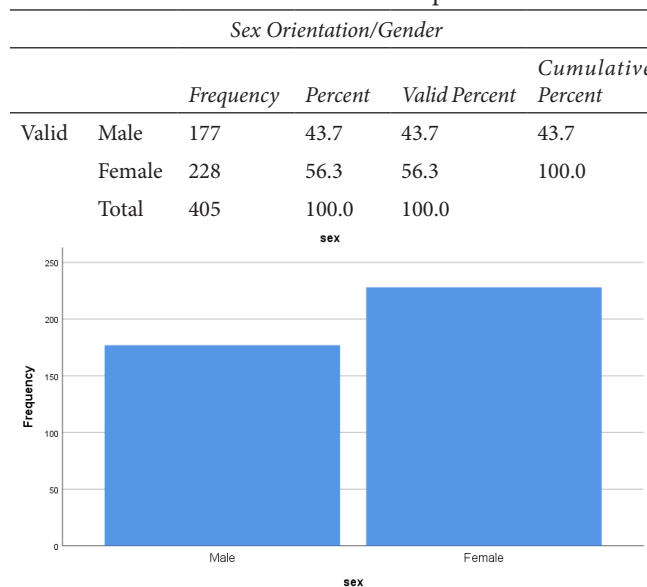


Table 3.1. Reliability Results

Reliability Statistics	
Cronbach's Alpha	N of Items
.794	56

The reliability of the instrument was tested based on the Cronbach Alpha reliability test through the SPSS series 25 program. Alpha Cronbach was chosen as the reliability test because by doing the Cronbach's alpha test inconsistent indicators would be detected and Cronbach's Alpha is a measure of reliability that has a value ranging from zero to one (Bonett & Wright, 2014; Taber, 2018). Based on the test results, it was obtained that the Cronbach Alpha value was 0.794 and the result was greater than > 0.6 , so 56 statement items in the Self Confidence Scale were said to be reliable.

Based on table 3.2. Then the results of the validity of the confidence scale are 80,357%. Of the 56 statement items on the self-confidence scale, after being tested on 405 Senior High School Students, tested for validity based on Pearson using the SPSS version 25, the result was that 11 statement items on the self-confidence scale were declared invalid. Therefore, 45 items of confidence scale statements that were declared valid

Table 3. 2. Validity Result Based On Pearson Product Moment
Item-Total Statistics

	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item- Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
X01	170.9432	58.306	-.042	.305
X02	170.8099	57.095	.060	.288
X03	170.8444	57.265	.032	.292
X04	170.8395	56.803	.080	.284
X05	170.7481	57.976	-.013	.299
X06	170.7432	56.592	.091	.282
X07	170.8444	56.760	.089	.283
X08	170.6765	57.294	.042	.290
X09	170.9778	56.566	.088	.283
X10	170.8543	56.382	.113	.279
X11	170.8543	57.659	.012	.295
X12	170.8543	57.907	-.013	.300
X13	170.9481	58.069	-.023	.301
X14	170.8963	58.474	-.054	.307
X15	170.8864	57.136	.047	.290
X16	170.8765	56.074	.136	.275
X17	170.6099	56.867	.081	.284
X18	170.7012	56.616	.090	.283
X19	170.8000	56.299	.129	.277
X20	170.8963	56.677	.075	.285
X21	170.9160	57.018	.055	.288
X22	170.8864	56.977	.063	.287
X23	170.7506	55.811	.164	.271
X24	170.7877	57.554	.012	.296
X25	170.7580	56.095	.135	.275
X26	170.8420	57.069	.054	.288
X27	170.8593	57.270	.023	.294
X28	170.6593	56.379	.123	.278
X29	170.8642	59.093	-.099	.314
X30	170.9160	58.825	-.081	.312
X31	170.8691	55.871	.150	.273
X32	170.7951	57.569	.021	.294
X33	170.8889	57.515	.014	.295
X34	170.8988	57.156	.050	.289
X35	170.7580	55.813	.158	.271
X36	170.8617	56.441	.100	.281
X37	170.9160	58.993	-.091	.312
X38	170.8938	56.343	.101	.280
X39	170.8938	57.560	.018	.294
X40	170.9481	56.911	.069	.286
X41	170.8395	56.135	.126	.276
X42	170.8716	57.078	.057	.288
X43	170.7605	57.361	.035	.292

	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
X44	170.7235	57.136	.055	.289
X45	170.8840	57.375	.026	.293
X46	170.8346	57.138	.050	.289
X47	170.7975	56.781	.073	.285
X48	170.7975	57.271	.052	.289
X49	170.6420	58.151	-.024	.301
X50	170.9556	57.379	.027	.293
X51	170.9012	57.743	.005	.297
X52	170.9259	57.594	.015	.295
X53	170.8444	57.637	.011	.296
X54	170.9901	57.643	.017	.294
X55	170.7407	58.257	-.032	.302
X56	170.8000	56.457	.094	.282

Table 3. 3. Summary of Validity Result*Case Processing Summary*

		N	%
Cases	Valid	405	80.357
	Excluded ^a	0	.0
	Total	405	80.357

a. Listwise deletion based on all variables in the Procedure

were tested against the expert judgment for the perfection of the student confidence scale in Indonesia.

The characteristics of men and women from the confidence scale in this study have not been discussed further, the characteristics are considered the same because students in Indonesia are in the same school environment assuming they have the same self-confidence characteristics in the school environment.

DISCUSSION

Self-confidence is one of the essential requirements for individuals to develop activities and creativity as an effort to achieve achievement (Hidayati & Hidayah, 2020). However, self-confidence does not grow on its own. Self-confidence is also one of the important characters that students must have so that students have 4C competence in facing the 21st century, namely: critical thinking (Melyana & Pujiastuti, 2020; Rohmat & Lestari, 2019), creativity (Herawati et al., 2019), communication skills (Siska et al., 2003), and the ability to work collaboratively (Rozi, 2019) in facing the 21st century, Self-confidence grows from a healthy interaction process in an individual's social environment and takes place continuously and continuously. Self-confidence does not just appear in a person, there are certain processes in his personality so that confidence formation occurs (Schneider et al., 2018).

Students who have self-confidence certainly have characteristics, namely (1) knowing their weaknesses and strengths well and then developing their potential (Ramdani, 2019); (2) setting standards for the achievement of his life goals and then giving awards if successful and working again if not achieved; (3) not blaming others for their defeat or failure but more self-introspection (Liu et al., 2019) social network group decision-making (SNGDM; (4) able to cope with feelings of depression, disappointment, and feelings of inadequacy that overtake them; (5) able to overcome feelings of anxiety in him; (6) calm in running and dealing with everything (Oney & Oksuzoglu-Guven, 2015); (7) positive thinking (Dyesi Kumalasari, 2017); and (8) move forward without having to look back (Selmi et al., 2018).

The problem of self-confidence in high school students is a priority that must be built for research. Self-belief plays an important role for someone to give their full potential. When qualified knowledge and adequate abilities are combined with self-confidence, a positive attitude will result that will lead to change for the better. Individuals who are not confident are usually caused by the individual not educating themselves and just waiting for people to do something to them (Flowers & Marston, 1972). The more the individual loses self-confidence, the more difficult it will be to decide what is best to do for him, in these circumstances adolescents tend to lose motivation (Fitri et al., 2018). Therefore, an effective self-confidence scale is needed to measure the level of self-confidence of students so that they are able to measure it validly.

So far, many have used and fully adopted the confidence scale of lauster (Santoso & Hidayati, 2021; Şar et al., 2010; Swanepoel et al., 2016). However, there is no confidence instrument scale that is adjusted to the needs and character of the research subject to be faced. In this study, the instrument was adjusted to the character of Indonesian adolescents. The instrument used to measure self-confidence

is the self-confidence scale. The instrument developed was a questionnaire with a 4-point Likert scale. The choice of answers starts from Very Fit, Suitable, Unsuitable, and Very Unsuitable. In this study, testing the validity and reliability of the self-confidence scale. In line with Hamed's research that an instrument scale can be used widely after being tested for validity and reliability (Campos et al., 2015; Daeli & Kurnianingias, n.d.; Taherdoost, 2018). Validity is used as a development and evaluation of a test. In addition, validity is also needed to determine the appropriateness of the items in a question construct in defining a variable and reliability is used as an indicator in believing the value of a test because it has consistency.

Mohajan (Mohajan, 2017) in his research explained that two important criteria in the instrument are validity and reliability. This is in accordance with this study that the validity test and reliability test are the two main things in making the self-confidence scale. Reliability is required for validity testing and is easier to achieve than validity. Although reliability is required to have a valid measure of a concept, it does not guarantee that the measure is valid. A reliable measure (can produce the same results over and over again), not necessarily valid or maybe the measurement results do not match the construct definition. So, consistent or precise and accurate measurement results from a test do not guarantee that the results of such measurements are the results desired by the test.

In other words, the measurement results of a consistent test are not necessarily valid. The reliability of the measurement of the evaluation instrument is needed to achieve valid measurement results. In relation to the consistency position, the assessors can have a reliable evaluation instrument without being valid, on the other hand we have a valid instrument with good reliability. Validity and reliability are complementary concepts, but in some situation that they conflict with each other. Sometimes, validity increases but reliability is more difficult to achieve, or vice versa. This occurs when a construct definition is very abstract and not easily observable. Reliability is most easily achieved when it is measured appropriately and can be observed. In the development and testing of the confidence scale, it was found that 100% of the statement items were declared reliable, but in the Validity Test, 80,357% of the statement items were found to be valid.

The validity test in this study was carried out by a judgment expert who was oriented towards construct validity and

content validity, in the form of dimensions and indicators to be measured, the editorial of each statement item, the effectiveness of sentence structure and corrections to the form format used. The experts who validate the construct are 2 experts in guidance and counseling instruments, namely: Prof. Dr. Nur Hidayah, M.Pd. from Universitas Negeri Malang, Indonesia and an expert in counseling and psychology: Prof. Dr. Mariani Binti MD Nor from Malaya University, Malaysia (Table 4.1).

After the instrument was declared valid by the expert, a readability test was carried out on 20 students. The readability test aims to see whether the statements contained in the questionnaire can be understood by their meaning and editorial and are in accordance with what students experience or face. The result of this experiment is that students do not find it difficult to understand the meaning and redaction of the statements contained in the self-confidence scale questionnaire. Then the test of the student's self-confidence instrument was carried out on 405 students. The results of the validity test of the self-confidence statement items are presented in Table 4.2.

Validity test using Pearson Product Moment. Pearson Product Moment is a correlation technique to find relationships and prove the hypothetical relationship between two variables when the data for the two variables are in the form of intervals or ratios and the data sources of two or more variables are the same (Chee & Queen, 2016; John W. Creswell, 2012; Walker, 2017). In line with this, this research uses the Pearson product moment because the variables used are in the form of intervals with 4 interval scores listed in 4 choices, namely very suitable, appropriate, inappropriate and very inappropriate. Based on the results of the Pearson validity test, it was found that 11 self-confidence scale statement items were declared invalid because the significance level value $<5\%$ was smaller <0.098 . 11 invalid statement items were declared invalid so that there were 45 items of self-confidence scale statements that were declared valid and reliable (Table 4.3).

The statement items in the self-confidence scale were originally 56 items, after 11 items were declared invalid and declared invalid, then 45 statement items were valid and used. optimistic indicator in self-confidence which originally 11 items were declared invalid 1 item became 10 statement items on the self-confidence scale, indicators of confidence in one's own ability in self-confidence, which originally 11 items were declared invalid, two items became 9 statement items on the

Table 4.1: Expert Construct Validity Test Results

No	Expert	Discussion
1	Prof. Dr. Nur Hidayah, M.Pd.	This instrument is declared valid and can be used for high school students. The indicator of self-confidence is in accordance with the character of self-confidence of students in Indonesia
2	Prof. Dr. Mariani Binti MD Nor	The confidence scale is declared valid, the division of indicators into descriptors is very appropriate and acceptable. Testing the validity of high school students with different characters. Not only in one school. Indicators and descriptions are appropriate

Table 4.2. Invalid Validity Test Results

	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
X10	170.8543	56.382	.113	.279
X16	170.8765	56.074	.136	.275
X19	170.8000	56.299	.129	.277
X23	170.7506	55.811	.164	.271
X25	170.7580	56.095	.135	.275
X28	170.6593	56.379	.123	.278
X31	170.8691	55.871	.150	.273
X35	170.7580	55.813	.158	.271
X36	170.8617	56.441	.100	.281
X38	170.8938	56.343	.101	.280
X41	170.8395	56.135	.126	.276

Table 4.3. Self-Trust Scale Grades After Validity And Reliability Tested

<i>Self-Confidence Indicators</i>	<i>Descriptor</i>	<i>The number of statement items on the confidence scale</i>
Optimistic	Feelings of confidence in one's own ability to act	10 Statements
	Optimistic about the results	
	Able to overcome the situation he is experiencing	
	Give the best for everything	
Believe in your own abilities	Dare to take the consequences	9 Statements
	Dare to take a decision	
	Planning for things to be done	
	Respect and obey the rules	
	Admit mistakes without making up	
Rational dan Realistic	Do not give up on the obstacles faced	8 Statements
	A constructive mindset	
	Thinking the problem is temporary	
	Always have hope in life	
	Do not do anything self-incriminating	
	Understand the limits of one's capabilities	
	Able to accept the weaknesses and strengths that are in oneself	
	Flexible to the circumstances at hand	
Responsible	Try hard and give enough time for an activity	8 Statements
	Willingness and self-appreciation	
	Doing repetitions of something that is of interest	
	Not ashamed to ask questions if you have difficulties	
	Have a direction in achieving something	
	Have good self-control	
Objective	Able to neutralize tensions that arise in various situations	10 Statements
	Able to review the positive side of failure that has been experienced	
	Not careless in making decisions	
	Can take time to think	
	Not afraid of other people's criticism	
	Take responsibility for the decisions that have been made	

self-confidence scale, indicators rational and realistic in self-confidence, originally 12 indicators were declared 3 invalid so that it became 8 statement items, responsibility indicators which were all 11 statement items declared 2 invalid items so that they became 8 statement items, and objective indicators in the original self-confidence 11 1 item statement is declared invalid so that it becomes 10 statement items. The total number of valid statements of 45 items is a self-confidence scale and can be used to measure the confidence of high school students, especially in Indonesia.

CONCLUSION

The validity of developing confidence instruments will be tested. Validity in a research instrument is to show the achievement or success of a tool in measuring what is being measured. In this study, using two validities, namely logical validity, namely validity which in principle includes the validity of the content, which is determined based on the judgment of the experts. And the validity of sampling is an instrument related to testing how well a test sample can present the total coverage of the content under study. The results of the validity test using Pearson with a significance level of <5% smaller <0.098 stated that 11 items of statements were invalid and declared invalid so that there were 45 items of self-confidence scale statements that were declared valid and reliable. These 45 statement items become instruments in a self-confidence scale that can be used to measure the level of self-confidence of high school students, especially in Indonesia.

This instrument can be adapted for use in any country of origin according to the structure and culture of each country and adapted to the character of the research subject. This adapted instrument is tested for validity with other models so that it is suitable and becomes part of the research being carried out. This validated instrument can be the basis for further research to determine what treatment is appropriate in increasing self-confidence.

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