

Validation and Reliability of the Questionnaire for Assessing the Effectiveness of The Reverse Whole Brain Model

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ABSTRACT: The use of appropriate teaching methods for students in the classroom is a challenge. The effectiveness of teaching is determined by what methods the teacher uses when teaching. Reverse Whole Brain Model is the result of Sianipar's thinking in his article in 2025. Sianipar states that the Whole Brain Model has the necessary things for Aphasia students (Sianipar, 2025). The research method is quantitative, using questionnaires as a measurement tool to determine the effectiveness of the Reverse Whole Brain Model. Questionnaires were created by researchers using the Theory of Effective Instruction from Slavin (1994). The data analysis technique is Aiken's V to test the validity of experts who have assessed existing instruments. The calculated r value of all statement items has a value above 0.304. The calculation of sig. (2-Tailed) of all items has a value of 0.000, which is smaller than 0.05. All items in the questionnaire meet the requirements to be declared valid and suitable for use as a data collection tool. In terms of the validity test, it is greater than 0.60. All items have a value not far from 0.989. From the calculation of this reliability test, it can be concluded that all statement items in the questionnaire are declared reliable to be used.

KEYWORDS: Aiken's V, Reverse Whole Brain Model, questionnaires, quantitative.

INTRODUCTION

The use of appropriate teaching methods for students in the classroom is a challenge. The increasingly developed world today encourages humans to be able to find everything that is right for every condition. However, not everything that has been found can be declared appropriate. Similar to the one mentioned above, the teaching method. Not all students have a suitability for the teaching methods used by their teachers. Unfortunately, the current situation is not in line with teaching in inclusive education. Teaching in the formal field alone, with existing methods, still finds many obstacles that are not suitable or do not even deliver material according to the target.

"The implementation of education must always develop according to the development of the times because education is a provision that must be possessed by humans in living an increasingly advanced and developing life" (Rizki et al., 2023). In equipping the nation's next generation, the field of education must be able to develop following the course of developments that occur in this world. One of the special concerns is the availability of suitable teaching methods for all existing students.

One of the articles that has the same understanding as the previous sentence is the article by Santosa et al.: "For this reason, it is recommended that teachers improve their students' learning achievement through the use of the most appropriate learning model" (Santosa et al., 2020). Santosa et al. also stated the same that teachers must be able to choose the appropriate model if they want to improve student learning achievement. From what can be concluded, the appropriate teaching method must be able to be found and used according to the existing conditions of the students.

This also applies to students in inclusive education. We can't ignore these students. Regardless of their condition, they are also the next generation of the nation with their limitations. "For the learning process at the Special School to run smoothly and optimally, appropriate teaching methods are needed" (Azizah, 2022). Appropriate teaching methods are still needed so that students in inclusive education can get and understand education properly.

Currently, the author is developing a new teaching method that is expected to meet the suitability needed by students in formal education and, if possible, also educational. The teaching method is the *Reverse Whole Brain Model*. In assessing the effectiveness of the model, the author developed an assessment instrument. This instrument is expected to be used by researchers who discuss a teaching method or model in determining the effectiveness of a teaching method or model.

"Assessment instruments have a very important role in the world of research, clinical practice, and as a basis for assessing health status" (Febriana et al., 2023). An assessment instrument is a tool that has a very important function in determining whether



something is suitable for use or not. This assessment instrument is used in various scientific fields both theoretically and practically. The feasibility of something that appears in the world of research should use an assessment instrument as a determinant and initial description of its feasibility.

As far as the author has read, there has not been a study that discusses an assessment instrument for a method. When it was found, there were no results of experts' assessment of the instrument. "The validity of the instrument is proven by the results of expert assessments that show that the instrument is suitable for use" (Nugroho & Airlan, 2020). An instrument will be declared valid and suitable for use if the researcher includes the results of assessments from experts related to the topic raised. The author will later include an assessment from experts as an assessment of the validity of the instrument

Based on what the author has conveyed in the background, the author tries to limit the focus of this research by focusing only on the effectiveness assessment instrument in the *Reverse Whole Brain Model* teaching method. From the limitations focused on the above problems, the author summarizes several sub-focuses in this paper, including: the results obtained from the use of the effectiveness assessment instrument in the *Reverse Whole Brain Model* teaching method, including its validity and reliability, and expert assessment of the effectiveness assessment instrument

Several studies discuss assessment instruments that have been published as a tool to validate research results. One of them is the questionnaire-forming instrument. Usually, when researchers want to assess the extent of usefulness of what they offer in their research, they will provide a questionnaire to be filled out by respondents who have previously used or felt the application of what the researcher offers. Here are some previous studies that discuss the instrument of assessing something:

Zayrin et al., researched the importance of an instrument considered of high quality if there is validity and reliability of the instrument (Zayrin et al., 2025). The purpose of this research is so that it can later be used as a reference for researchers, especially in the field of education.

The next research comes from Subhaktiyasa's research, which discusses the importance of validation results and reliability of an instrument (Subhaktiyasa, 2024). Subhaktiyasa emphasized that the instrument needs to be tested for validity and reliability, and this is also one that has existed for a long time.

Marar et al. published a study on a questionnaire on researchers' understanding of predatory journals (Marar et al., 2023). The research produced a valid and reliable questionnaire in measuring the extent to which researchers in the clinical and health fields understand predatory journals.

Amirzadeh et al. published a study on the validity and reliability of a questionnaire used to measure the quality of feedback given by medical trainees (Amirzadeh et al., 2024). The results obtained were that the feedback quality instrument from the questionnaire was considered valid, reliable, and fair in assessing the feedback of the participants.

The next study was conducted by Sugiarta et al., regarding the questionnaire on the effect of motivation on nurse performance in moderation with nurse credentials. (Sugiarta et al., 2023). The results obtained were used to compile a questionnaire on the moderate influence of motivation on nurse performance, with the nurse's credentials declared valid and reliable.

From the works above, which discusses the validity and reliability of an assessment instrument for questionnaire compilers, the difference with the research conducted by the author lies in the topic of the questionnaire. The authors created this questionnaire to measure the effectiveness of the teaching model. Along the way, the author distributed a questionnaire that has been compiled from instruments made from the theory of the effectiveness of instruction from Slavin (Slavin, 1995). This theory was chosen by the author because of the teaching method, the *Reverse Whole Brain Model*, and how the success or failure of the use of the method is measured from the form of instruction prepared by the teacher, whether it is about the purpose of the instruction.

LITERATURE REVIEW

Teaching Methods

"*Effective learning in higher education is largely dependent on the choice of appropriate delivery mode*" (Imran et al., 2023). Education depends on the teacher and the way the teacher delivers the material. Each material has a different purpose. Each student has characteristics and characteristics that are also not the same. The effectiveness of teaching is determined by what methods the teacher uses when teaching. When the method used is limited and does not provide an interesting point of view for students, certainly, the learning that occurs is not effective, and vice versa. One of the things that can help teachers in delivering teaching and making teaching effective is the teaching method.



“The purpose of the innovation of teaching and learning methods is to promote the activeness of learners and train their thinking, self-study, and self-research abilities to immediately adapt to the social environment” (Dau & Ninh, 2023). Teaching methods are invented with the intention that students can practice their critical thinking, stimulating their way of thinking. This is intended so that students can be ready to adapt to society when they have graduated. The teaching methods that exist today are not created to adapt to the times. So are the existing teachers. They are still comfortable using conventional teaching methods, delivering material, students listening and taking notes.

The world today has come a long way. Technology has made it easier for humans to access it and find it wherever and whenever they want. Unfortunately, it does not happen simultaneously in the world of education. Indeed, access to education has been facilitated by the presence of online education. Unfortunately, this is not balanced with the teaching methods used by teachers. "Digital innovation in education is not only limited to the application of technology in the teaching and learning process. It also includes changes in curriculum, evaluation methods, and overall learning approaches" (Hotimah et al., 2024). There is still a need for the creativity of teachers in using and creating teaching methods that suit the conditions of their students.

“Teaching and learning methods are not necessarily updated with the rapid development of technology. Many existing or developing methods are still limited to teaching with one-way communication” (Sianipar, 2026). Most teachers today still apply one-way teaching. They still believe that the teacher understands everything and the disciple must listen. In fact, with the developing world as it is now, access to everything can be done by all humans, meaning that not all understanding is only in the teacher.

Teaching method is a way used by teachers in delivering learning materials. One of these methods is used so that the purpose of the material can be conveyed completely and fully accepted. *“Method or methodology denotes a particular teaching practice that has been derived from a certain theory and put into classroom practice”* (Ahmed & Rashid, 2024). As stated by Ahmed & Rashid in their research, a method should be based on a theory that will later be practiced in the classroom.

Reverse Whole Brain Model is the result of Sianipar's thinking in his article in 2025. Sianipar states that *Whole Brain Model* have the necessary things for Aphasia students, but there must be modifications of the *Whole Brain* to adjust the damage experienced to the left brain of the student with aphasia (Sianipar, 2025). Sianipar targets models *Back to the drawing board* to students with aphasia, but it is possible that it can be used in students in formal educational institutions. Sianipar's background in his research is seen from his experience while teaching at the elementary, middle and high levels. Sianipar sees that many students with limitations have started to follow formal education. Because of this condition, Sianipar feels that teachers must be ready for this situation, one of which is that there must be a teaching method that can embrace all students with all their conditions and shortcomings.

Assessment Instruments

Instruments today is available in many forms. The development of science has led to the discovery of more and more types of instruments found to support research that has been published or will be published. *“Over the past two decades, a variety of instruments have been developed to measure discrete facets of science competence”* (Tadeko et al., 2026). The need for instruments today is getting higher as a form of legitimate statement of something raised by researchers. That's why Tadeko et al. stated that many instruments have been developed.

An instrument for evaluating something is also something important to include in every research. This is intended so that the validity of the topic discussed is validated correctly. One of them is an assessment instrument regarding the research of lecturers so that it is valuable or not. *“Measuring lecturers' persistence to publish in Scopus-indexed journals holds significant pertinence, warranting the creation of an instrument designed to assess and evaluate this critical aspect of academic scholarship”* (Owan et al., 2023). Owan et al. said that the instrument they developed was necessary in order to get an idea of which areas the lecturers' research contributions had added to its usefulness. This instrument can also be used to assess the willingness of lecturers to conduct and publish their research.

METHODS

The research method chosen by the author in this study is quantitative, using questionnaires as a measurement tool to determine the effectiveness of the Reverse Whole Brain Model teaching method. Quantitative research is based on data collection in the form of numbers that are processed to answer what is the research question. *“Quantitative research designs centre on numerical data collection and analysis to answer the research question or hypothesis”* (Slater & Hasson, 2025).

The author chose the questionnaire as a measuring tool because, by using a questionnaire, it is possible to measure what is a variable systematically and regularly. This is in line with what Asngari said in his article, "quantitative instruments are designed in the form



of questionnaires or scales to measure variables in a structured manner" (Asngari, 2026).

The author chose the respondents from this study to be the students he taught. "Accidental sampling is a technique of determining samples based on chance" (Gustika, 2020). The researcher chose this accidental sampling because the topic raised is related to teaching, and coincidentally, the author is a teacher as well. That's why lecturers choose their students as research subjects because *accidental*.

The details of the number of respondents who were the subjects of the study are as follows:

Table 1. Number of respondents

Class Name	Gender		Quantity
	Male	Women	
<i>Listening and Speaking II</i>	6	36	42

The researcher uses a questionnaire to collect research data, later be processed using the selected analysis method. "*The questionnaire that is used in this research is designed to collect geographic data of respondents (origin of the faculty, position in UKI, gender, and age), data on the use of the "UKI HEBAT" tagline, and data that is related in building the character of "HEBAT" or great*" (Limbong et al., 2022).

Based on Limbong et al, the questionnaire was used to collect data in the form of characteristics of each respondent and also data related to what they wanted to research according to the description of the respondents. In this case, the picture that the researcher wants to research is how the respondents assess the teaching model that has been used, *Reverse Whole Brain*.

Questionnaires were created by researchers using the Theory of *Effective Instruction* from Slavin (1994). Factors that affect the effectiveness of instruction are quality, appropriateness, intensive, and time (Slavin, 1995).

The explanation:

a. Teaching quality, namely: the extent to which the presentation of information or the ability to help students easily learn the material. The indicators of teachers' ability to manage learning are:

- 1.) Achievement of Learning Objectives.
- 2.) Managing core activities.
- 3.) Organize the learning process well.
- 4.) Interaction.
- 5.) Individual Responsibility
- 6.) Application of Positive Discipline

b. The right level of teaching, that is, the extent to which the teacher ensures that students are ready to receive new learning who have the necessary skills and knowledge to learn it. The indicators of student activity in the learning process are:

- 1.) Learning Readiness.
- 2.) Teaching Speed
- 3.) Student readiness.
- 4.) Regularity of the Class Atmosphere.
- 5.) Interactive Activities.
- 6.) Adaptive Teachers.
- 7.) Constructive feedback.

c. Incentives, i.e., the extent to which the teacher ensures that students are motivated to work on the study tasks and to learn the material presented. Thus, learning will be effective and will provide positive changes to students. The indicators of student response in learning activities are:

- 1.) Providing Positive Reinforcement.
- 2.) Activities.
- 3.) Adaptive Instruction.
- 4.) Interest in the material

d. Time, i.e., the extent to which students are given enough time to study the material being taught. The indicators of learning outcomes in learning activities are:

1.) Availability of time according to the difficulty level of the material

2.) Efficient Transition Time

Learning will run if the effectiveness of student activities is carried out according to the predetermined time.

Table 2. questionnaire forming instruments

ASPECT	BEHAVIORAL INDICATORS	ENQUIRY NUMBER		QUANTITY
		FAVOURABLE	UNFAVORABLE	
QUALITY	Achievement of Learning Objectives	1	20	2
	Managing core activities	2	21	2
	Organize the learning activity process well.	3	22	2
	Interaction	4	23	2
	Individual Responsibility	5	24	2
	The Implementation of Positive Discipline	6	25	2
LEVEL OF TEACHING	Learning Readiness	7	26	2
	Teaching Speed	8	27	2
	Student Readiness	9	28	2
	Regularity of the Classroom Atmosphere	10	29	2
	Interactive Activities	11	30	2
	Adaptive Teachers	12	31	2
	Constructive Feedback	13	32	2
INCENTIVES	Providing Positive Reinforcement	14	33	2
	Activities	15	34	2
	Adaptive Instruction	16	35	2
	Interest in the material	17	36	2
TIME	Availability of time according to the difficulty level of the material	18	37	2
	Efficient Transition Time	19	38	2

The scale in the questionnaire used is the Likert model with 5 alternative answers Strongly Disagree (STS), Disagree (TS), Neutral (N), Agree (S), Strongly Agree (SS).

Table 3The assessment scale in the questionnaire

Scale	Favorable	Unfavorable
Strongly Disagree (STS)	1	5
Disagree (TS)	2	4
Neutral (N)	3	3
Agree (S)	4	2
Strongly Agree (ST)	5	1

The data was analyzed using Aiken's V to test the validity of experts who have assessed existing instruments. For questionnaires that have been filled out, analyze using validity and reliability tests to find out whether the questionnaire has been declared valid and reliable based on the respondents' responses.

RESULT

The instrument used by the researcher in compiling this questionnaire comes from the theory of *Effective Instruction* by Slavin.

These 4 aspects were developed by the researcher in compiling the questionnaire. "*Validity means that a diagnostic test correctly detects the condition that it is designed to detect. If a diagnostic test lacks validity, it serves no useful purpose in clinical practice, because the information that it produces will be wrong*" (Bogduk, 2022).

Validity tests are used to look for the form that a test should take that is useful for the clinical understanding of something. Test validity is used to determine whether an instrument in the test is declared suitable for use or not. Before the instruments of the questionnaire are distributed to the public, it must be approved through *expert judgment*.

"*Expert judgment is clearly needed for valid statistical and scientific analyses*" (Brownstein et al., 2019). *Expert judgement* used when assessing and analyzing statistics and its scientificity to be declared valid. In the process, questionnaire-forming instruments will be given to lecturers who are experts and master the construction and content of variable instruments in the formation of questionnaires. The instrument for forming the questionnaire comes from the theory of *Effective Instruction* by Slavin.

The aspects in the instrument that come from the theory of *Effective Instruction* are quality, the level of appropriate teaching, intensive, and time. From these 4 aspects, 38 representative statements were formed. Quality (12 items), appropriate level of teaching (14 items), intensive (8 items), and time (4 items). All of these items use a 5-point scale of *Likert* by showing the level of conformity to the construct being measured.

Table 4. Assessment criteria in the questionnaire

Aspects	Number of Items
End	12
The right level of teaching	14
Intensive	8
Time	4

The judgment of these experts will later be calculated using Aiken's V. "*The use of Aiken's V provided a robust quantitative foundation for the validation process Aiken's V is appropriate for assessing content validity when experts rate items on an ordinal scale (e.g., 1 = Not Relevant to 5 = Highly Relevant)*" (Tajuddin et al., 2025).

Aiken's V is used to assess the results of expert assessments because it provides a strong quantitative foundation for the validation process. Aiken's V is appropriate for use in assessing the judgments of experts assessed in the form of an ordinal scale.

The Aiken's V formula used is

$$V = \frac{\sum (s)}{n(c-1)}$$

Image 1 Aiken's V formula (Tajuddin et al., 2025)

s = $r-l$
 r = the value given by the examiner
 l = the probability of the smallest value obtained
 n = number of experts
 c = rating number used (scale 1-5, c is 5)
 The assessment criteria used by the validators are as follows

Table 5. Criteria for scoring instrument items by validators

Value	Description
1	Invalid
2	Less Valid
3	Quite Valid
4	Valid
5	Very valid

Nabil et al. mentioned in their article that if the value produced is below 0.4, then it is declared to be low validity. Validity is stated to be moderate when the value is between 0.4 – 0.8, and validity is high when the value is above 0.8 (Aiken, 1985) (Nabil et al., 2022).

Aiken's V validity index is used to determine the agreement obtained from experts (Helmiyatun et al., 2025). The selection of raters is carried out carefully by adjusting to the academic competence and experience possessed by each rater. The selected raters consist of four people, with the qualifications of two raters with a Doctoral education background and the position level of Associate Professor.

Two more raters have a Master's education background, with one having the level of Associate Professor, and the other having the level of Assistant Professor. These four raters work as lecturers in the English Literature study program of the Universitas Kristen Indonesia. These four raters also have a considerable number of scientific publications in reputable journals, which can be seen on each Google Scholar profile.

The following is a table of the results of the assessment conducted by each rater.

Table 6. Result of the assessment

No	Fail 1	Miss 2	Fail 3	Fail 4
1	4	4	5	5
2	5	4	5	5
3	4	5	5	5
4	4	5	5	5
5	4	4	5	4
6	5	5	4	4
7	4	5	4	5
8	3	5	5	5
9	3	5	5	4
10	4	4	5	4
11	4	4	5	4
12	4	5	5	5
13	4	5	4	4
14	5	5	4	4
15	4	5	5	5
16	4	5	4	4

17	3	5	5	5
18	4	5	5	5
19	4	4	5	5
20	4	4	5	5
21	2	4	5	5
22	4	4	5	4
23	4	4	5	4
24	3	5	5	4
25	4	5	4	5
26	4	4	5	5
27	3	4	5	5
28	3	5	5	5
29	3	5	5	4
30	3	5	5	4
31	2	5	4	4
32	3	4	4	4
33	5	5	5	5
34	3	5	4	4
35	3	5	5	5
36	3	5	5	5
37	4	5	5	5
38	4	4	5	5
Average score	3,68421053	4,63157895	4,76315789	4,57894737
Standard deviation	0,73907404	0,48885153	0,43085148	0,50035549

From the table above, the average score for each rater is obtained, which ranges from 3.68 to 4.78. The standard deviation obtained ranges from 0.43 to 0.73. This reflects that there is a variation of opinion from the raters.

The score given by each rater is analyzed using Aiken's V. Aiken's V is divided into three, namely: low, medium, and high. It is used as a reflection of the extent to which the items of the statement are considered valid in measuring the aspects examined through the questionnaire. The results obtained from the content analysis based on Aiken's V value and its classification are described in the table below.

Table 7 Aiken's V value and classification

No	Member/Rater 1	Member/Rater 2	Member/Rater 3	Member/Rater 4	Σs	V	Validity
1	4	4	5	5	14	0,875	High
2	5	4	5	5	15	0,9375	High
3	4	5	5	5	15	0,9375	High
4	4	5	5	5	15	0,9375	High
5	4	4	5	4	13	0,8125	High
6	5	5	4	4	14	0,875	High



7	4	5	4	5	14	0,875	High
8	3	5	5	5	14	0,875	High
9	3	5	5	4	13	0,8125	High
10	4	4	5	4	13	0,8125	High
11	4	4	5	4	13	0,8125	High
12	4	5	5	5	15	0,9375	High
13	4	5	4	4	13	0,8125	High
14	5	5	4	4	14	0,875	High
15	4	5	5	5	15	0,9375	High
16	4	5	4	4	13	0,8125	High
17	3	5	5	5	14	0,875	High
18	4	5	5	5	15	0,9375	High
19	4	4	5	5	14	0,875	High
20	4	4	5	5	14	0,875	High
21	2	4	5	5	12	0,75	Medium
22	4	4	5	4	13	0,8125	High
23	4	4	5	4	13	0,8125	High
24	3	5	5	4	13	0,8125	High
25	4	5	4	5	14	0,875	High
26	4	4	5	5	14	0,875	High
27	3	4	5	5	13	0,8125	High
28	3	5	5	5	14	0,875	High
29	3	5	5	4	13	0,8125	High
30	3	5	5	4	13	0,8125	High
31	2	5	4	4	11	0,6875	Medium
32	3	4	4	4	11	0,6875	Medium
33	5	5	5	5	16	1	High
34	3	5	4	4	12	0,75	Medium
35	3	5	5	5	14	0,875	High
36	3	5	5	5	14	0,875	High
37	4	5	5	5	15	0,9375	High
38	4	4	5	5	14	0,875	High

The table above shows the score given by each rater for each statement item, Aiken's V value, and also the validity classification category of each item. The table above shows the results of the assessment of the raters on 38 statements.

The average rater score obtained was dominated by 4 and 5. Some get 3, and two statements are rated 2 by one of the raters. The validity classification of statement items shows that most items have a **High category**, some are moderate, but none are low, and only one statement item gets the maximum validity value (Aiken's $V = 1$).

When detailed, there are 34 statements that have validity in the high category (Aiken's $V \geq 80$). This shows that there is a strong agreement among raters that the details of the statement are relevant in measuring the effectiveness of the Reverse Whole Brain model. Then, 4 statements are included in the medium category (Aiken's $V \leq 0.4 V \leq 0.8$).

From this, it is indicated that there are varying perceptions among the raters. These results show that the instrument developed to create the Reverse Whole Brain effectiveness questionnaire has good validity, with the majority of items getting high validation from experts as raters on this questionnaire.

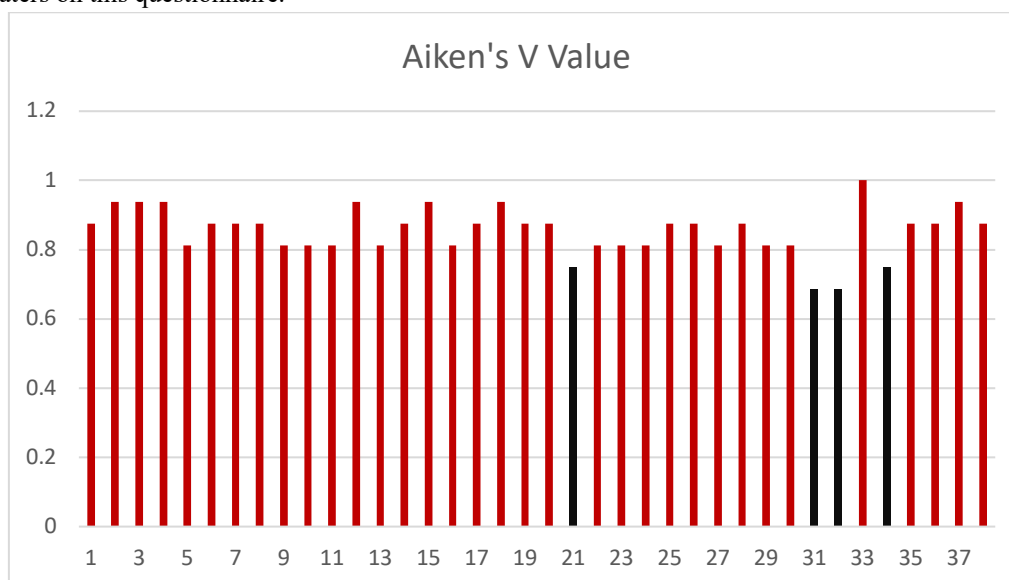


Image 2. Distribution of Aiken's V values

From the image above, it shows the distribution of Aiken's V values for each statement item in the *Reverse Whole Brain* learning model effectiveness questionnaire instrument. The graph above shows that most of the statement items are in the high category (in red). Only a small percentage of the statement items are in the medium category (in black).

In testing the questionnaire with a validity test, the researcher must understand the basis of the validity test *product moment* through SPSS calculations. "*Pearson product-moment correlation method was used to test the validity by evaluating the results using the critical value table of the Pearson Product-Moment Correlation Coefficient ($r > 0.254$)*" (Wijaya & Klopang, 2021).

In calculating the results of the validity test, *Pearson Product-Moment* commonly used. The decision-making bases that are usually used in validity tests are:

"a. If r counts positive and r counts $> r$ table then the variable is valid.

b. If r calculation is not positive and r calculation is $< r$ table, then the variable is invalid" (Nurcahyo & Riskayanto, 2018).

In addition to using the calculated r -value, the researcher also compared the value of Sig. (2-tailed) in determining the results of the validity test.

1. If the value of Sig. 2 tailed < 0.05 and the Pearson Correlation value is positive, then the statement item on the instrument is valid.

2. If the value of Sig. 2 is tailed < 0.05 and the Pearson Correlation value is negative, then the statement item on the instrument is invalid.

3. If the value of Sig. 2 tailed > 0.05 and the Pearson Correlation is either positive or negative, then the statement item on the instrument is invalid. (Budiantoro & Kurniawan, 2021)

From the calculation of the validity test using SPSS version 25, the following results were obtained



Image 3 Validity test result

	Item_1	Item_2	Item_3	Item_4	Item_5	Item_6	Item_7	Item_8	Item_9	Item_10	Item_11	Item_12	Item_13	Item_14	Item_15	Item_16	Item_17	Item_18	Item_19	Item_20	Item_21	Item_22	Item_23	Item_24	Item_25	Item_26	Item_27	Item_28	Item_29	Item_30	Item_31	Item_32	Item_33	Item_34	Item_35	Item_36	Item_37	Item_38	Item_39	Item_40	Item_41	Item_42	Item_43	Item_44	Item_45	Item_46	Item_47	Item_48	Item_49	Item_50	Item_51	Item_52	Item_53	Item_54	Item_55	Item_56	Item_57	Item_58	Item_59	Item_60	Item_61	Item_62	Item_63	Item_64	Item_65	Item_66	Item_67	Item_68	Item_69	Item_70	Item_71	Item_72	Item_73	Item_74	Item_75	Item_76	Item_77	Item_78	Item_79	Item_80	Item_81	Item_82	Item_83	Item_84	Item_85	Item_86	Item_87	Item_88	Item_89	Item_90	Item_91	Item_92	Item_93	Item_94	Item_95	Item_96	Item_97	Item_98	Item_99	Item_100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Item_1	Person's Connection	1	870	878	888	833	848	873	863	881	888	914	832	840	783	816	785	814	836	82	814	832	860	719	724	710	765	448	870	810	724	788	719	810	718	740	438	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867	837	888	867

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From the results of the SPSS calculation above, it is actually clear whether these items have been declared valid or not. However, it will be stronger if we also look at the basis for decision-making in the validity test.

The criteria for validity testing are:

1. If r counts $> r$ table, then the questionnaire items are declared valid
2. If r is calculated $< r$ table, then the questionnaire items are declared invalid

In analyzing each number whether the items are valid or not, it is a good idea to determine the value r of the table

DISTRIBUSI NILAI r_{tabel} SIGNIFIKANSI 5% dan 1%

N	The Level of Significance		N	The Level of Significance	
	5%	1%		5%	1%
3	0.997	0.999	38	0.320	0.413
4	0.950	0.990	39	0.316	0.408
5	0.878	0.959	40	0.312	0.403
6	0.811	0.917	41	0.308	0.398
7	0.754	0.874	42	0.304	0.393
8	0.707	0.834	43	0.301	0.389
9	0.666	0.798	44	0.297	0.384
10	0.632	0.765	45	0.294	0.380
11	0.602	0.735	46	0.291	0.376
12	0.576	0.708	47	0.288	0.372
13	0.553	0.684	48	0.284	0.368
14	0.532	0.661	49	0.281	0.364
15	0.514	0.641	50	0.279	0.361
16	0.497	0.623	55	0.266	0.345
17	0.482	0.606	60	0.254	0.330
18	0.468	0.590	65	0.244	0.317
19	0.456	0.575	70	0.235	0.306
20	0.444	0.561	75	0.227	0.296
21	0.433	0.549	80	0.220	0.286
22	0.432	0.537	85	0.213	0.278
23	0.413	0.526	90	0.207	0.267
24	0.404	0.515	95	0.202	0.263
25	0.396	0.505	100	0.195	0.256
26	0.388	0.496	125	0.176	0.230
27	0.381	0.487	150	0.159	0.210
28	0.374	0.478	175	0.148	0.194
29	0.367	0.470	200	0.138	0.181
30	0.361	0.463	300	0.113	0.148
31	0.355	0.456	400	0.098	0.128
32	0.349	0.449	500	0.088	0.115

Image 4. r-value table

From the table above, the r value is 0.304. This is because the number of respondents in this questionnaire is 42 people. Furthermore, the r value in the table is calculated from the SPSS output. From the results of the SPSS calculation, the r value of item 1 is 0.897. While the r -value in the table used is 0.304. From this, we can conclude that item 1 is valid

Table 8. validity test summary table

No	rx _y	r _{tabel}	Remarks
1	0,897	0,304	Valid
2	0,800	0,304	Valid
3	0,932	0,304	Valid
4	0,870	0,304	Valid
5	0,753	0,304	Valid
6	0,853	0,304	Valid
7	0,842	0,304	Valid
8	0,918	0,304	Valid
9	0,829	0,304	Valid
10	0,908	0,304	Valid

11	0,913	0,304	Valid
12	0,933	0,304	Valid
13	0,898	0,304	Valid
14	0,911	0,304	Valid
15	0,918	0,304	Valid
16	0,903	0,304	Valid
17	0,913	0,304	Valid
18	0,928	0,304	Valid
19	0,885	0,304	Valid
20	0,883	0,304	Valid
21	0,900	0,304	Valid
22	0,927	0,304	Valid
23	0,923	0,304	Valid
24	0,924	0,304	Valid
25	0,868	0,304	Valid
26	0,942	0,304	Valid
27	0,716	0,304	Valid
28	0,911	0,304	Valid
29	0,485	0,304	Valid
30	0,891	0,304	Valid
31	0,951	0,304	Valid
32	0,923	0,304	Valid
33	0,642	0,304	Valid
34	0,898	0,304	Valid
35	0,923	0,304	Valid
36	0,609	0,304	Valid
37	0,880	0,304	Valid
38	0,759	0,304	Valid

Next is decision-making based on sig values. (2-tailed). Based on the output of the SPSS calculation results above, it was found that the value of sig. (2-tailed) item 1 is 0.000. It can be expressed as $0.000 < 0.05$, and from *Pearson Correlation* is 0.897. From this, it can be concluded that item 1 is valid and suitable for use as a data collection tool. Likewise, for items 2 to 38, it is declared valid and suitable for use as a data collection tool.

The next test is the reliability test. *"The meaning of reliability is the consistency of measurement (Mohajan, 2020). According to Quintão et al. (2020), reliability refers to an understanding that instruments used in research to obtain information can be used and trusted as a data collection tool and can reveal accurate information in the field"* (Noor & Fuzi, 2025).

A reliable test, based on the above quote, is said to be something consistent or provides consistency in measurements. In the questionnaire, reliability is used to test whether the instrument can be used and can be trusted as a data collection tool and can accurately reveal information in the field. Instruments that pass the reliability test are considered trustworthy or *reliable and can be used as a data collection tool*.

The basis for decision-making in this reliability test is as follows: "If Cronbach's Alpha value > 0.60 , then the question items in the questionnaire are reliable. If Cronbach's Alpha value < 0.60 , then the question items in the questionnaire are not reliable" (Forester et al., 2024).

Table 9. Case Processing Summary

Case Processing Summary			
		N	%
Cases	Valid	42	100.0
	Excluded ^a	0	.0
	Total	42	100.0

a. Listwise deletion based on all variables in the procedure.

The table above provides information on the number of respondents analyzed. The 42 respondents analyzed had filled in all the statements in the questionnaire in their entirety. That's why there is a 100% score that states that all respondents have answered everything.

Tabel 40. Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.989	38

From the table above, it can be seen that *the N of Items* is 38. This means that the total number of statements in the lawsuit amounts to 38 statements with a Cronbach's Alpha value of 0.989. Since Cronbach's Alpha value is $0.989 > 0.60$, it can be concluded according to the basis of decision-making that all items (38 items) in the questionnaire are declared reliable or consistent.

Table 11. Item Total Statistics

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Cronbach's Alpha if Item Deleted	
Item_1	164.07	676.897	.888	.989	
Item_2	164.36	682.186	.784	.989	
Item_3	163.86	676.077	.927	.988	
Item_4	163.79	702.319	.864	.989	
Item_5	163.86	702.272	.741	.989	
Item_6	163.79	702.904	.846	.989	
Item_7	163.86	703.443	.835	.989	
Item_8	163.93	696.214	.914	.988	
Item_9	163.93	691.970	.818	.989	
Item_10	164.07	689.775	.902	.988	
Item_11	163.86	691.443	.907	.988	
Item_12	163.86	695.101	.929	.988	
Item_13	163.93	692.556	.892	.988	
Item_14	163.93	691.970	.906	.988	
Item_15	163.86	695.686	.914	.988	
Item_16	164.00	693.073	.898	.988	
Item_17	163.86	691.443	.907	.988	
Item_18	164.07	684.946	.923	.988	

Item_19	163.86	697.003	.879	.989
Item_20	163.86	692.760	.876	.988
Item_21	163.86	696.418	.895	.988
Item_22	163.79	676.270	.921	.988
Item_23	163.71	695.477	.919	.988
Item_24	163.79	695.294	.920	.988
Item_25	163.71	697.672	.862	.989
Item_26	163.71	694.746	.939	.988
Item_27	163.79	707.587	.705	.989
Item_28	163.86	677.394	.903	.988
Item_29	163.93	702.068	.450	.990
Item_30	163.79	696.611	.885	.989
Item_31	163.64	694.918	.948	.988
Item_32	163.71	695.477	.919	.988
Item_33	163.86	703.589	.624	.989
Item_34	163.71	696.502	.892	.988
Item_35	163.71	695.477	.919	.988
Item_36	163.86	700.077	.585	.989
Item_37	163.79	697.051	.874	.989
Item_38	163.79	698.221	.746	.989

The table above, it provides an overview of the 38 items used in the questionnaire. In the "Cronbach's Alpha if Item Deleted" column, it is known that the 38 items have a Cronbach's Alpha > value of 0.60. It can be concluded that all of these items are declared reliable. The results of the analysis of the value given by the rate showed that the instrument used to measure the effectiveness of the use of the Reverse Whole Brain model showed excellent content validity or in the high category. The majority of the statement items received a high category of Aiken's V grade.

This shows that the items have a strong agreement between raters in measuring the concepts in the statements being studied. Aiken's V values between 0.68 and 1.00 indicate that there is a difference in the level of agreement between raters on some of the statements. Statements that have an Aiken's $\geq$ value of 0.80 are considered a strong indicator in measuring the effectiveness of the Reverse Whole Brain model. This means that experts give strong approval to the details of the statement.

In addition to this, there are also statements that have an Aiken's V value below 0.80. This happens because there is a difference of opinion in each rater. This may be due to the ambiguity that occurs from the statement, the difficulty of the statement, or the unclear context presented in the item.

In instrument validation studies, Aiken's V values in the medium to high category are still acceptable, but further evaluation is needed to improve the quality of the instrument. One of the steps that can be taken is to conduct field trials by directly involving student respondents to ensure that the instrument items truly reflect their perception of education management in schools.

The results of the content validity analysis using Aiken V show that most of the items in the instrument have a good level of validity. Items with a high Aiken V value indicate that experts have strong agreement on the relevance and clarity of the indicators measured in the instrument (Hanifa et al., 2026). On the other hand, items with a lower Aiken V value, even though they are still in the medium category, indicate a difference in perception among raters regarding the relevance or clarity of the item.

In instrument validation studies, an Aiken's V value above 0.80 is generally considered an indication of strong content validity. Some items that fall into the medium category do not need to be reviewed because there are only 4 items of statements. These results show that the instrument of effectiveness of the Reverse Whole Brain model has good content validity, with the majority of items receiving high approval from experts. Thus, the instrument can be used for further research, although some items have Aiken's V values in the medium category.

From the results of the analysis obtained above, it can be seen that the validity test of the questionnaire is valid. 38 items that have



been filled in by 42 respondents are declared valid. The calculated r value of all statement items has a value above 0.304. Even from the calculation of sig. (2-Tailed) of all items has a value of 0.000, which is smaller than 0.05. Based on these two calculations, in terms of r value and sig value (2-Tailed), all statement items in the questionnaire meet the requirements to be declared valid and suitable for use as a data collection tool.

In terms of the validity test, it can be seen that the value of the entire item is greater than 0.60. All items have a value not far from 0.989. From the calculation of this reliability test, it can be concluded that all statement items in the questionnaire are declared reliable to be used.

CONCLUSION

From the expert assessment measured using Aiken's V , it was concluded that the instrument of effectiveness of the Reverse Whole Brain model has good content validity, with the majority of the items of the questionnaire statement receiving high approval from experts. Thus, the instrument can be used for further research, although some items have Aiken's V values in the medium category. It was found that, based on the assessment carried out by filling in the 42 respondents, the questionnaire was declared valid and reliable to be used in future research that wanted to measure the effectiveness of a teaching model. These results reinforce that the questionnaire created by the researcher, which uses the theory of Effective Instruction by Slavin, can be declared a valid and reliable questionnaire because the instrument used has met the requirements as a tool for data collection that asks about effectiveness. All aspects in the theory of Effective Instruction by Slavin, including quality, appropriate level of teaching, incentives, and time, can represent and become a benchmark to measure whether a learning model is declared effective or not when it has been tested.

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