

Validation of the Content of Elementary School Teacher Competency Instruments in Developing Student Character Using the Aiken's V Method

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Abstract

This study aims to analyze the content validity of the measurement instrument used to measure the competence of elementary school teachers in developing student character by utilizing the Aiken method. Currently there is no valid instrument to measure it. The instrument studied covers four main dimensions: Learning Process, Extracurricular, School Culture, Community. The instrument is a test instrument consisting of 12 multiple-choice test items and a situational judgment test with 33 items. Content validity was evaluated by twenty assessors who are highly experienced in their respective disciplines. After conducting a quantitative study of the Aiken V value, it was determined that all instrument items for implementing formative assessment were considered valid. Qualitative analysis was conducted with eight experts who provided some simple revisions to certain items. Overall, the instrument used to measure the competence of elementary school teachers in developing student character was considered valid through content validity analysis that relied on the Aiken method.

Keywords: Content Validity, Elementary School Teachers, Aiken Method

Introduction

Student character development is a multidimensional process that can be integrated into various educational contexts. This process involves fostering values such as religiosity, discipline, curiosity, honesty, and responsibility through structured learning activities such as writing explanatory and narrative texts.(Budiyo & Pudjaningsih, 2023). In educational psychology, character development focuses on ethical reasoning, interpersonal relationships, and diversity-related skills, although measuring these outcomes remains difficult.(Halonen et al., 2020).

Student character development refers to the development of values, personal virtues, and social responsibilities through integration into the curriculum. The curriculum emphasizes cognitive skills, but disciplines such as the arts, social sciences, and natural sciences still

embed certain virtues within their framework.(Quinlan, 2016). Student character development refers to the growth of key character strengths such as purpose, gratitude, compassion, and resilience throughout childhood, as highlighted in research, which emphasizes the importance of understanding their multidirectional developmental relationships.(Malin et al., 2017). Student character development involves developing virtues by addressing weaknesses, cultivating self-awareness, and encouraging humility. This process, rooted in training and self-evaluation, ultimately prepares students for a life of empathy and tolerance with others.(Griffis, 2017).

Character development in elementary school students is greatly influenced by student-teacher relationships at school, learning strategies, student and teacher social-emotional relationships, and communication with positive interactions that foster character strengths such as fairness, hope, and teamwork, especially in a supportive classroom environment.(Thomas et al., 2022). Research shows that developing an educational environment will enhance character development in elementary school students, foster social competencies such as interaction, cognitive conflict resolution, and joint evaluation, compared to traditional educational methods, leading to more effective personal growth.(Rubtsov & Ulanovskaya, 2020).

Character development of students in elementary schools is very important to build students' ability to determine the good and bad of their actions, attitudes and behaviors. The decline in community moral standards makes this process very important. Effective character development can be done in various ways including character development in schools. Character development of students in schools can be done by integrating character development in learning to instill cultural and character values.(Murwaningsih et al., 2022). Integration of character development in education in schools involving integration in classroom learning process activities, school culture and through extracurricular activities effectively spurs the development of students' character in elementary schools. The development of character values such as independence, empathy, integrity and resilience will greatly help students to face the future and contribute to others.(Indriani & Asfia, 2023).

Character development in elementary schools is critical because it fosters non-cognitive skills, such as grit and resilience, that significantly improve long-term life outcomes, including employment and health, beyond academic achievement, as evidenced by successful elementary education programs.(Sokatch, 2017). Character development in elementary schools lays the foundation for moral and civic virtues, enhances social-emotional skills, and fosters positive behaviors, which ultimately contribute to students' overall well-being and their ability to contribute positively to society.(Clement & Bollinger, 2017). Developing character in elementary school students will foster positive morals in students, increase emotional intelligence, and foster values such as caring and reciprocity, which are important for navigating complex social contexts and contributing positively to students' communities as adults.(Pring, 2017).

Character development of students in elementary schools is the basis for developing ethical values and fostering positive behavior in students.(Jeynes, 2017). The characters developed in elementary school include religious; discipline; responsibility; leadership; tolerance; cooperation; love of cleanliness; neatness; politeness; perseverance; courage; self-

confidence; thrift; independence; honesty; accepting diversity; nationalism; justice; creativity; and appreciation for achievement. (Aningsih et al., 2022).

Implementation of character development in elementary schools requires the role of teachers who can collaborate with schools, parents and the community. (Wasehudin et al., 2024). Elementary school teachers play a very important role in developing students' character in elementary schools. Students view teachers as role models, responsible for exemplifying positive attitudes and behaviors such as honesty, tolerance, and discipline. (Ramdan & Fauziah, 2019). However, some teachers expressed their concerns about the adequacy of character development programs in schools. (Melek et al., 2016). Teachers' beliefs about character education significantly influence the success of its implementation, emphasizing the need for alignment between curriculum design and teacher perspectives. (Muzakkir et al., 2024).

To determine the level of competence of elementary school teachers in developing student character and to ensure that teachers have met the established standards, an instrument for assessing the competence of elementary school teachers in developing student character was developed. Researchers and practitioners measure constructs such as the competence of elementary school teachers in developing student character which are formulated at a high level of abstraction. Therefore, the assessment instrument used to measure the construct must be validated. Validity ensures that the instrument measures what it is intended to measure accurately. Validity ensures that the instrument includes theoretical concepts, logic, meaningfulness, and supporting evidence Conclusion (Ryan et al., 2019).

Content validity aims to provide evidence about the extent to which elements of an assessment instrument are relevant and reflect a particular domain. (Shrotryia & Dhanda, 2019). Content validity assessment relies on the use of a panel of experts to evaluate instrument elements and rank them based on their relevance and representativeness to the content domain and ensure that the content is relevant to the assessment objectives. (Almanasreh et al., 2019). Validity, together with reliability, forms the basis of psychometric testing for measurement instruments (Souza et al., 2017).

It is important to have a valid instrument that is able to measure the competence of elementary school teachers in developing student character. The content validity of the resulting items was carried out with the cooperation of twenty experts. Quantification of content validity was carried out using Aiken's V. Aiken's V is a method for assessing content validity, a type of validity that determines whether a test or instrument accurately reflects the content or domain it is intended to measure. This validity is calculated by assessing expert opinions on the relevance and appropriateness of items or questions to a particular content area. (Nurjanah et al., 2023). This study aims to investigate the validity of the instrument using the Aiken method. The objectives of this study will be achieved by answering the following research questions.

How is the content validity of the instrument for measuring the competence of elementary school teachers in developing student character as analyzed using the Aiken validity coefficient (V)?

How is the content validity of the instrument to measure the competence of elementary school teachers in developing student character qualitatively based on the suggestions given by the assessor?

Research Method

The methodology in this study is quantitative with a survey method of 20 panelists as experts in assessing the competency assessment instrument of elementary school teachers in developing student character. The sample was selected purposively by considering that the sample has an area of expertise in education. The competency assessment instrument of elementary school teachers in developing student character was designed in the form of a test in the form of multiple choice and situational judgment test. The instrument consists of 45 questions consisting of 12 multiple choice test questions and 33 situational judgment test questions.

The instrument used to measure the competence of elementary school teachers in developing student character consists of four dimensions: Learning Process, Extracurricular, School Culture, Community. These four dimensions were obtained through a systematic literature review in previous studies. These four dimensions are intended to include information on the competence of elementary school teachers in developing student character. These dimensions are then dissected into a number of indicators, which are explained in full in Table 1.

Table 1

Dimensions and Indicators

N0	Dimensions	Indicator	Test Form
1	Learning Process	Teachers are able to design learning based on character development	MC
		The teacher shows a wise personality in the initial learning activity process	SJT
		Teachers are able to apply learning methods that support student character development in the core learning activity process.	SJT
		Teachers are able to develop students' character in the final learning activity process	SJT
2	Extracurricular	Teachers are able to design physical activities that can develop students' character.	MC
		Teachers are able to involve students in various game activities that can develop students' character.	SJT
		Teachers are able to develop students' character through sports activities	SJT
		In sports activities, teachers demonstrate behavior that students emulate.	SJT
3	School Culture	Teachers' exemplary behavior can develop religious character in students	SJT
		Teachers are able to play a role in instilling honesty in students	SJT
		Teachers are able to involve students in various activities that can develop student discipline.	MC

		Teachers are able to develop students' character through a clean and healthy classroom environment.	SJT
		Teachers are able to implement a culture of tolerance in the classroom	MC
		Teachers are able to instill confidence in students to give their best.	SJT
		Teachers are able to develop students' nationalism through activities that develop a spirit of love for the homeland.	SJT
4	Community	Teachers are able to develop students' character by involving students in social activities in the community around the school.	MC
		Teachers are able to act in accordance with social norms that apply in society.	SJT
		Teachers are able to develop students' environmentally conscious character through greening activities with the community in the school's surroundings.	SJT

MC = Multiple Choice

SJT = Situational Judgment Test

The results of the development of 45 instrument items were given to 20 panelists to be assessed based on the quantity of the instrument. Aiken uses the calculation formula $V = S / [n (c-1)]$, where V is the value of Aiken's validity coefficient. S is the value of the assessment scale minus 1. n is the number of assessors or experts used in the validation. c is the highest score on the assessment scale. The validity index is expressed as V , the higher the V value, the more precise the measurement target. The V index value ranges from 0 to 1, the closer it is to 1, the better because it is more relevant to the indicator (Nurjanah et al., 2023).

20 panelists tested the Elementary School Teacher Competency Instrument in Developing Student Character. The 20 panelists were selected based on their educational background and experience in the learning environment. Their educational background and experience in the learning environment were taken into consideration in selecting panelists with the aim of finding out whether the question items in the instrument could be understood well so that the designed construct was declared valid as a measuring instrument. After obtaining data from the panelists, an analysis was carried out using Aiken's V validity.

Results And Discussion

Table 2

Results of Calculation of Instrument Panel Validity with Aiken's V

Dimensions	Item No		V	Judgment	Dimensions	Item No		V	Judgment
Learning Process	P1	MC	0.9375	Valid	School Culture	B24	SJT	0.8500	Valid
	P2	MC	0.9875	Valid		B25	SJT	0.7625	Valid
	P3	MC	0.9500	Valid		B26	SJT	0.8875	Valid
	P4	SJT	0.8750	Valid		B27	SJT	0.9000	Valid
	P5	SJT	0.7625	Valid		B28	SJT	0.8125	Valid
	P6	SJT	0.8875	Valid		B29	MC	0.8375	Valid
	P7	SJT	0.8625	Valid		B30	MC	0.8375	Valid
	P8	SJT	0.8250	Valid		B31	SJT	0.7750	Valid
	P9	SJT	0.7875	Valid		B32	SJT	0.9500	Valid
	P10	SJT	0.9000	Valid		B33	MC	0.8750	Valid
	P11	SJT	0.9125	Valid		B34	MC	0.8250	Valid
	P12	SJT	0.9000	Valid		B35	SJT	0.8625	Valid
Extracurricular	E13	MC	0.8625	Valid	Community	B36	SJT	0.8250	Valid
	E14	MC	0.8875	Valid		B37	SJT	0.8750	Valid
	E15	MC	0.8750	Valid		B38	SJT	0.8500	Valid
	E16	SJT	0.8750	Valid		K39	MC	0.8875	Valid
	E17	SJT	0.9000	Valid		K40	MC	0.8875	Valid
	E18	SJT	0.8000	Valid		K41	SJT	0.8375	Valid
	E19	SJT	0.8625	Valid		K42	SJT	0.8250	Valid
	E20	SJT	0.9125	Valid		K43	SJT	0.8625	Valid
	E21	SJT	0.8750	Valid		K44	SJT	0.8875	Valid
	E22	SJT	0.8375	Valid		K45	SJT	0.8375	Valid
	E23	SJT	0.8500	Valid					

MC = Multiple Choice

SJT = Situational Judgment Test

Based on Table 2, it shows that the twelve items in the multiple-choice instrument are proven valid. The lowest Aiken's V coefficient value is in items no B29 and B30 of 0.8375 and the highest coefficient is in item no P2 of 0.9875. Table 2 also shows that the thirty-three items in the SJT instrument are proven valid. The lowest Aiken's V coefficient value is in items no P5 and B25 of 0.7625 and the highest coefficient is in item no B32 of 0.9500.

The V value is compared with the standard table value compiled by Aiken (Aiken, 1985). By using 20 raters, the minimum standard V Aiken for this study is 0.76. So, it can be said that this instrument has high content validity, because it has a value above 0.76. Based on the results of the quantitative approach, it can be said that the elementary school teacher competency instrument in developing student character has high content validity.

Content validity in this study is not only limited to the value of the Aiken V coefficient. Instrument evaluation is also carried out by qualitative expert assessment. After a qualitative assessment, the experts provide several recommendations on the instrument items that need to be revised. This qualitative expert assessment is an important evaluation of the content

validity of the instrument. This can reduce the limitations of quantitative analysis, which only focuses on existing items. Furthermore, the active involvement of experts in providing advice, both verbally and in writing, has a very significant role in increasing the suitability of items in certain indicators and dimensions. Every suggestion given by experts plays a very important role in efforts to improve the quality of dimensions, indicators and items. During the expert assessment phase, experts play an important role by providing recommendations on whether to add or delete items, carefully evaluating each word in the item, and providing valuable recommendations to improve the quality of the instrument. The involvement of experts is essential to ensure that dimensions, indicators and items accurately represent the concepts to be measured, leading to more valid results.

Qualitative expert assessment involves 8 experts consisting of 3 Elementary School Teacher Education (PGSD) experts, 2 Education Research and Evaluation (PEP) experts, 2 Indonesian Language experts and 1 Psychology expert. with assessment aspects including: 1) relevance of indicators to dimensions 2) relevance of test items to indicators and dimensions, 3) clarity of the main questions, and 4) standardization of the language used.

The recommendations given by PGSD experts are to improve the conceptual definition and operational definition, make improvements by replacing indicators according to the theory that forms the dimensions, improve the order of indicators according to the order of activities in the learning process.

The recommendations given by PEP experts are to revise the indicators to comply with the conceptual and operational definitions, revise the instruments into multiple-choice tests and situational judgment tests.

The recommendations given by psychology experts are to reduce the number of questions from 90 to 45 items, improve the answer choices for multiple choice questions, improve the form of situational judgment test questions into 3 parts, namely: situations, dilemmas and questions, improve the answers to situational judgment test questions according to their ranking.

The recommendations given by Indonesian language experts are to suggest several minor adjustments, which include adjusting words to suit needs and situations, improving sentence clarity and communicativeness, and correcting typographical errors.

The results of the instrument development after going through a qualitative assessment by experts became two instruments consisting of a multiple-choice test instrument and a situational judgment test instrument. The instrument consisted of 45 questions consisting of 12 multiple-choice test questions and 33 situational judgment test questions. The results of the instrument development after going through a qualitative assessment by experts were valid and could be continued to the next development stage.

The limitations of this study caused the instrument to not be analyzed further in terms of construct validity testing. The researcher could not conduct this test due to limited resources, including manpower, cost, and time, so that he could not collect a large number of teachers

as participants in the instrument trial. In further research, it is recommended to conduct this test to obtain an instrument that has validity and reliability.

Conclusion

The content validity of the elementary school teacher competency instrument in developing student character is valid, as indicated by the Aiken validity coefficient (V). Based on a qualitative review using feedback provided by experts, there are a number of recommendations regarding dimensions, indicators and item items. Overall, the instrument designed to measure elementary school teacher competency in developing student character is valid through content validity analysis using the Aiken method. To improve the quality of future research, it is recommended to conduct a reliability test to ensure that the instrument used is valid and reliable. Future research can use this instrument to measure elementary school teacher competency in developing student character with teachers as respondents.

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