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Validity of Assessment Instruments Based on Higher-Order Thinking Skill on Learning Pendidikan Pancasila dan Kewarganegaraan

Pebriyenni[1], Muslim[2], Sumarni[3]
[1,2,3]*Pendidikan Pancasila dan Kewarganegaraan, Universitas Bung Hatta, Padang, Sumatera Barat, Indonesia*
pebriyenni@bunghatta.ac.id, muslimtawakal@bunghatta.ac.id, sumarni@bunghatta.ac.id

Abstract

This research aims to develop a valid Higher Order Thinking Skill based assessment instrument on Pancasila and Civic Education subjects in Grade XI Senior High School. The assessment instrument developed is limited to basic competence 3.1 analyzing cases of human rights violations in the perspective of Pancasila in order to realize the harmony of human rights and obligations in the life of the nation and state. The type of this study is research and development. The development design model used is the Plomp model by dividing the research phase into three phases, namely preliminary research, prototyping phase, and assessment phase. This research was conducted up to prototyping phase. This stage is used to see the validity of the HOTS-based Civics subject assessment instrument. The study was done at Bung Hatta University and validated by three experts (validator). The results showed that the validity level of the instrument from the material aspect was 82.66%, the instrument construction validity was 86.00%, the HOTS assessment instrument validity from the language aspect and additional rules were 84.33% for language and 85.33% for additional rules. Thus the average validation of the HOTS assessment instrument is 84.58%. It can be concluded that the HOTS assessment instrument in PPKn subjects has the validity criteria of valid and can be used with minor revisions. It is recommended to continue on the practicality and effectiveness of the instrument.

Keywords
assessment instrument; higher order thinking skill; PPKn

I. Introduction

Education as the spearhead of the progress of a nation should provide services that are in line with the demands of the times. In order to become a successful person in the 21st century, a person living in that century requires various relevant skills that must be mastered in order to adapt and contribute. The rapid development of the 21st century requires everyone to master various skills such as critical thinking and problem solving, communication, collaboration, and creative and innovative thinking (NEA, 2018; P21, 2015; Bialik & Fadel, 2015). This encourages various disciplines to play an active role in developing these skills. Industry 4.0 is said to be the era of technological disruption because automation and connectivity in a field will make the movement of the industrial world and work competition non-linear. Humans will even live in uncertainty global, therefore humans must have the ability to predict a future that changes very quickly (McKinsey & Company, 2019).

Education as the bearer of reformative and transformative roles must be able to prepare students to master these various skills. The need for graduates who are critical, creative, communicative, and collaborative is is the main graduate competency in the 2013 curriculum.

The development of the learning curriculum is based on the main principle, namely graduate competence. This is based on the needs, curriculum content and subjects that are derived directly from competency needs, including Pendidikan Pancasila Dan Kewarganegaraan (PPKn) subjects which contribute to the formation of attitudes, knowledge and skills of citizens. The application of essential principles in Civics learning has an impact on citizens who are ready to face the 21st century.

The Council of the European Union 2018 recommends that future competencies that need attention in the world of education are Literacy, Multilingual competence: Mathematical competence, Competence in science, Digital competencies, Personal, social and learning to learn competencies, Citizenship competence, Cultural awareness, and expression competences, Entrepreneurship. Citizenship competencies the ability to act as a responsible citizen and to participate fully in community and social life. This requires an understanding of social, economic, legal, political concepts and structures, as well as sustainable global developments (Poszytek, 2019). For Indonesia, Citizenship competence is obtained in Civics subjects given at all levels of education

The 2013 curriculum mandates Civics to be a subject that must instill character in students by developing four core competencies, namely spiritual, social, knowledge, and skill competencies. Citizenship Education in Indonesia has a philosophical meaning in preparing civilized and wise citizens (Wibowo, 2017). The success of Civics learning will determine the character of law-abiding citizens (a balance of rights and obligations), as the shaper and development of the nation's values, morals, and morals in preparing a multicultural mentality, (Wibowo, 2017; Sriyanto, 2019). The Civics curriculum develops dynamically and learning materials are built from the four pillars of national values, namely Pancasila. 1945 Constitution, NKRI and Bhinneka Tunggal Ika. The four pillars are combined to achieve the four core competencies. The implementation of Civics learning in schools has been facilitated by the availability of learning resources, both teacher books and student books, which were developed with a scientific approach

The objectives of Civics subjects, in general, are to develop the potential of students in the dimensions of citizenship, namely: (1) civic attitudes including firmness, commitment and responsibility commitment (civic confidence, civic, and civic responsibility); (2) civic knowledge; (3) citizenship skills including civic competence and civic responsibility. Education in particular, (1) displays characters that reflect the personal and social understanding and practice of Pancasila values and morals; (2) have a constitutional commitment that is supported by a positive attitude and a complete understanding of the 1945 Constitution; (3) think critically, rationally and creatively and have the spirit of nationalism, love for the homeland; (4) participate actively, intelligently and responsibly as members of the community, nation and state, (Sriyanto, 2019; Suherman and Nugraheni, 2019). Departing from the goal of Civics, a meaningful learning process is needed that can give birth to citizens who are ultimately able to adapt to the development of science and technology, the 21st century, and the industrial era 4.0. The problem encountered in Civics learning is that information is often outdated, especially related to the development of law enforcement and state administration, political participation, implementation of civilized values in the life of the nation and state.

Learning and assessment of higher-order thinking skills is essentially meaningful learning and assessment, not just memorizing because this learning and assessment allow students to 1) transfer, apply the knowledge and skills they already have into new contexts or in more complex ways; 2) think critically, apply wise judgment produce reasoned critique; 3) solve problems, identify and solve problems in their lives, (National Education Assessment Center, 2019). A valid assessment instrument is needed in order to measure the effectiveness

of the assessment (Serevina, 2016; Farra, 2015). According to Bloom's taxonomy, there are six cognitive levels, namely; remember (C1), understand (C2), apply (C3), analyze (C4), evaluate (C5) and create (C6). Remembering, understanding, and applying are included in low order thinking skills (LOTS) or low-level thinking. While analyzing, evaluating, and creating, including high order thinking skills (HOTS) or high-level thinking (Hanifah, 2019; Yahya, 2012; Saputra, 2016; Aniq, 2018).

Table 1. Comparison of Traditional Assessment and Contextual Assessment

Traditional	**assessment Contextual assessment**
Students tend to choose the response given	Students express responses
Class world context (artificial)	Real-world context (realistic)
Generally measures aspects of memory (*recalling*)	Measures task performance (higher-order thinking)
Separated from learning	Integrated with learning
Indirect evidence and tends to be theoretical	Direct evidence through the application of knowledge and skills in a real context
Response describes memorization/theoretical knowledge	Response is accompanied by data and fact-based reasons

Source: Suherman & Nugraheni (2019).

High Order Thinking Skills which in Indonesian are known as high level thinking skills (Hidayat, 2020). Sulianto in Imelda (2018) explained that the ability to think at a higher level involves critical and creative thinking in an effort to determine decisions and solve problems. HOTS questions generally measure ability in the realm of analysis, evaluation, and creation. Operational verbs in Bloom's taxonomy grouping describe the thought process and not verbs for questions. The three higher-order thinking skills are very important in solving problems, transferring learning and creativity, (Setiawati, 2019; Suherman, 2019). There are three principles of high-level thinking, namely (1) providing a stimulus for students to think about (usually in the form of text, visuals, scenarios, discourses, or problems (cases; (2) using new problems for students, not discussed in class and not questions for students to think about). the process of remembering; (3) distinguishing between the level of difficulty of the question (easy, medium, or difficult) and the cognitive level (low-level thinking and high-level thinking).

II. Research Methods

Type of research is research and development. The development design model used is the Plomp model, (Plomp, T., & Nienke Nieneen, 2013). Plomp divides the research phase into 3 phases, namely preliminary research, prototyping phase, and assessment phase. This research was conducted up to the prototyping phase. This stage is used to see the validity of the HOTS-based Civics subject assessment instrument. This model design is a learning model design based on an effective and efficient systems approach and an interactive process. The end result of each phase is the initial product for the next phase. The following is an overview of the research procedure.

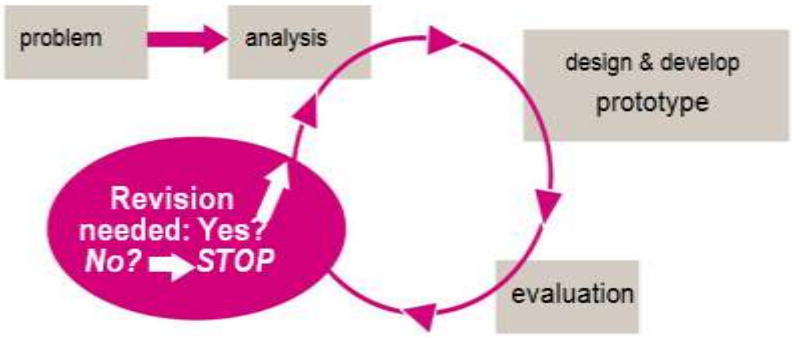

Figure 1. *Research Procedur*

2.1 Preliminary Phase

Table 2. Preliminary Phase

Research	**Research Focus Activities, Data / Interest**	**Result**	
		Instrument Making	**Outcomes**
Analysismatter, adequacy, the relevance of the techniques and methods	• Data on KD, Indicators, and Main Materials. • The adequacy of the material to improve HOTS	*checklist (walk trough)*	*walk trough*
Concept Analysis	• Essential concepts	Literature	Supporting theory
Analysis of student characteristics and learning tools	• Characteristics of participants • Assessment instruments that are in accordance with KD and Characteristics of	Questionnaires	Questionnaire List

2.2 Prototyping Phase

Table 3. Fase Prototipy

Research	Research FocusActivities,Data / Interest	Result	
		Instrument Making	Outcomes
Design Prototype Instrument valuation	• Describe all the results of the preliminary phase into a Prototype forAssessment Instruments	list checklist	Walk trough
Melakukan *self-evaluation* terhadap *Prototype* 1	Mengidentifikasi kesalahan (*obvious error*))	Daftar *checklist*	*Walk trough*

Perform a *self-evaluation* of the *Prototype* 1	Identifying mistakes*(obvious*errors))	*checklist*	*Walk trough*
Revise *Prototype* 1 based on the results of *self-evaluation* into Prototype 2	• Improve the validity of the content (*relevance*) and construction (*consistency*) of the Prototype 2 HOTS assessment instrument and improve its usability and readability.	Validator Sheet	HOTS Assessment Instruments for PPKn Subjects
Validating Prototype 2 to the expert: Revising Prototype 2, to obtain Prototype 3	• Does Prototype 1 meet the *state of the art knowledge of the* HOTS Assessment Instrument? (needs to be broken down into several questions) (content validity (*relevance*)) • Is Prototype 1 model fit for purpose? (content validity (*relevance*)) • Are the parts in HOTS-based valuation Instruments has been consistent and supportive of each (the validity of the construction • (consistency)) Is the presentation of the HOTS-Based Assessment Instrument correct (construction validity (*consistency*))	Validator Sheet	HOTS Assessment Instruments for PPKn Subjects

The results of the instrument validity are compared with the criteria in the following table:

Table 4. Assessment Criteria Validity

Percentage	Criteria
85.01-100	Very valid, can be used without revision
70.01-85	Valid can be used but needs to be revised
50.01 -70	Less valid, it is recommended not to use because it needs major revision
1%-50	Invalid, should not be used

Source: Akbar Sa'dun (2013)

The criteria for the device (assessment instrument) are declared valid if the minimum validation result is 70.01% or in the valid and very valid category. The data analysis technique used includes qualitative data in the form of suggestions and input from the validator used to revise the HOTS assessment instrument. Analysis of the validity of the HOTS assessment instrument used the following formula:

$$V_a = \frac{T_{sa}}{T_{sh}} \times 100\%$$

Information:

V_a : Validation score
T_{sa} : Empirical scores from experts
T_{sh} : Maximum expected score

III. Result and Discussion

The product developed is the HOTS assessment instrument in the subject of Civics Basic Competence 3.1 "Analyzing cases of human rights violations in the perspective of Pancasila to realize the harmony of human rights and obligations in the life of the nation and state" for high school students of class XI. The assessment instrument consists of the HOTS instrument grid, learning materials, and questions. The instrument validator was carried out by Citizenship Education lecturers and Civics Learning Evaluation lecturers, as well as PPKn subject teachers as material experts. Then the teacher is active so that students are more active in participating in the learning (Siahaan, 2020). Thinking is a mental activity that occurs when a person is faced with a situation or problem that must be solved. The classification or taxonomy that is best known in the world of education is Bloom's Taxonomy. The taxonomy is revised, mainly by Lorin Anderson and David Krathwol, and published in 2001. In the revised Bloom's Taxonomy, formulated 6-level thought processes, namely remembering, understanding, applying, analysis, evaluating, and creating.

3.1 Preliminary Phase

a. Needs Analysis

To organize the assessment materials and instruments in Civics subjects, a needs analysis was carried out by looking at the readiness of students and teachers in implementing HOTS-based learning. The results of the study can be seen in Figures I and 2.

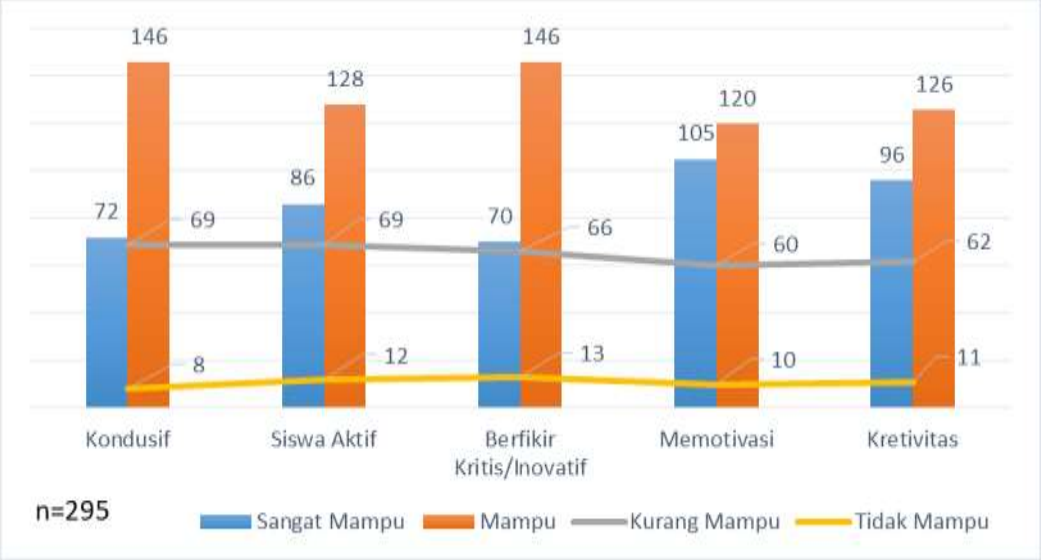

Figure 2. *Teacher's Ability to Use Learning Models*

Figure 2. It can be explained that 72% of students stated that PPKn teachers were able to use learning models well. PPKn teachers are able to create a conducive learning climate, motivate students to be active, think critically/creatively innovative. Conducive learning, active and creative students are examples of the implementation of HOTS-based learning. High-level thinking must begin with student motivation to improve abilities because it is required by professional teachers in teaching students. Teachers need to organize learning well, condition students to be able to think analytically, diverge, develop new values, and allow students to be creative to find new knowledge. Figure 3 below will explain the results of research related to how students perceive the ability of Civics Education teachers to organize learning objectives so that higher-order thinking skills can be achieved.

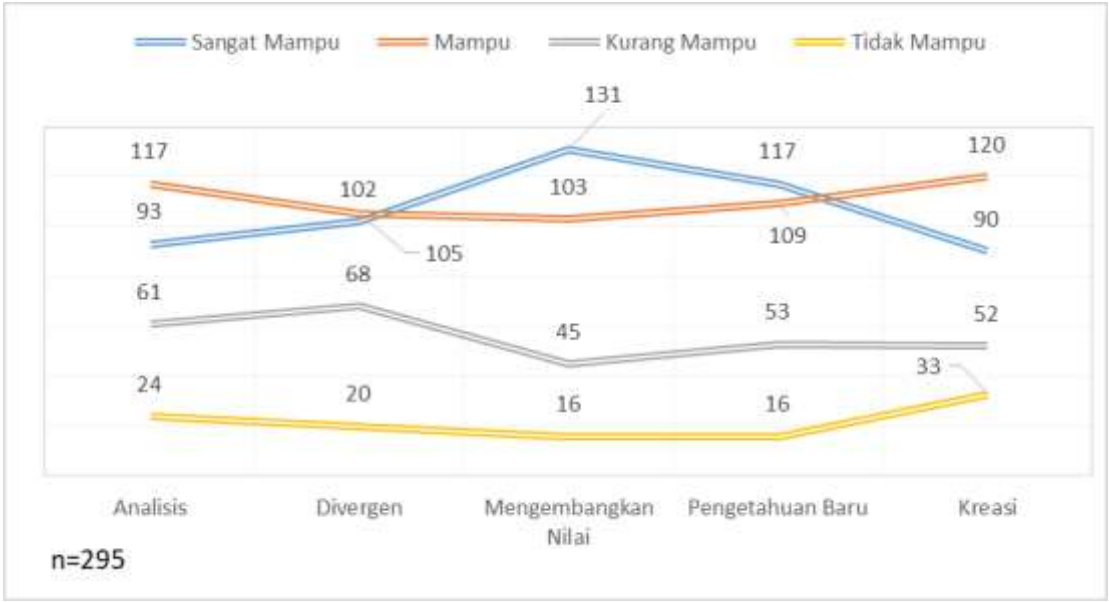

Figure 3. *Teacher's Ability to Organize Learning Objectives*

Figure 3, it can be described that PPKn teachers are able to carry out learning well. From 295 respondents, it can be seen that 70.19% of students think that the implementation of Civics learning can develop students' ability to analyze and think divergently. Students can be creative, and develop new values and knowledge. It can be concluded that the learning carried out by PPKn teachers has met the standards of meaningful learning, contextual learning, and student-centered. This has an impact on the development of HOTS in students.

b. Curriculum Analysis

Table 5. Basic Competencies Basic

Competencies Knowledge Basic	Competencies Skills
3.1 Analyzing cases of human rights violations in the perspective of Pancasila to realize the harmony of human rights and obligations in the life of the nation and state	4.1 Presenting the results of the analysis of cases of human rights violations in Pancasila perspective to realize the harmony of human rights and obligations in the life of the nation and state,

Curriculum analysis is carried out on Basic Competencies (KD) 3.1 and 4.1. Basic competence is the ability of students to be able to achieve core competencies. The purpose of basic competence refers to how to increase knowledge in the cognitive field, develop interests, talents and abilities to improve individual attitudes and responsibilities. Basic competence serves as a reference for teachers in developing competency indicators so that teachers can improve the ability of students to implement knowledge and skills in life responsibly. The results of the analysis of KD 3.1, found the complexity of the learning material. Required 4 (four) main parts of the material, (1) the concept of human rights and obligations; (2) the substance of human rights and obligations in the perspective of Pancasila; (3) cases of human rights violations; (4) efforts to enforce human rights. The four main materials are developed in teaching materials.

c. Prototyping Phase

The following is an example of HOTS questions. Consider the following case, “With a shaking voice, residents were affected by the construction of the Mandalika circuit; "I lost the land where I was born". Information quoted from (https://regional.kompas.com/read/2021/04/15/ 071617678). Dusun Ebunut, where Damar lives is in the middle of the circuit and is very close to the straight track. Of the 250 families (KK) living in this hamlet, only 50 families remain. They are still holding out, asked to move immediately. Because the development developer, the Indonesia Tourism Development Corporation (ITDC) has given a grace period for residents to leave their homes until Thursday (15/4/2021) today. "Initially we were given a grace period, but yesterday they asked us all to leave, we had to leave, given until Thursday, we would be evicted," said Damar.

The question is based on the case of residents affected by the construction of the Mandalika circuit, what you think the government can do to continue to protect the rights of citizens. This question is included in level 3 (reasoning) because it can measure problem solving abilities, with the following stages of thinking; (1) Identify who and why the eviction occurred; (2) understand the concept of human rights and the rights of Indonesian citizens; (3) evaluate government policies in developing Mandalika tourism destinations; (4) predicting the impact caused by the development of tourism destinations; (5) draw conclusions and propose ways/efforts to minimize the negative impacts of tourism destination development.

From the questions that were designed, validation was carried out. There are four parts that are validated on the HOTS-based assessment instrument, namely (1) material; (questions according to indicators, using interesting and contextual stimuli, measuring the cognitive level of reasoning, non-routine, homogeneous and logical answers and each question has only one correct answer). (2) Construction; (the subject matter is formulated briefly, clearly, does not provide clues to the answer key, is free from negative and double statements, the item does not depend on other questions. (3) Language; (the question uses language that is in accordance with language rules, uses sentences) which is communicative and does not repeat words) (4) additional rules (the questions do not contain elements of ethnicity, religion, race, intergroup, pornography, propaganda and violence). The results of the research on instrument validation can be explained in table 6.

Table 6. HOTS Instrument Validation Results for Human Rights Materials

No	Evaluation Aspect	Validator			%	Criteria Validation	Criteria
		1	2	3			
1	Materials	86	82	82	82.66	Valid can be used but need to be revised	Revision
2	Construction	85	87	86	86.00	Valid can be used without revision	to use
3	languages	85	82	86	84.33	Valid can be used without revision	Revision
4	Additional rules	85	85	86	85.33	Valid can be used but needs to be revised	Revision
	Total				84.58	Valid can be used without revision	Revision

Table 6 shows the percentage of each criterion for the HOTS assessment instrument in KD 3.1 Analyzing cases of human rights violations in the Pancasila perspective to realize the harmony of human rights and obligations in the life of the nation and state is valid but requires minor revisions. The scores for each aspect are; material aspect 82.66%; construction aspect 86.00%; language aspect 84.33% and additional rules 85.33%. The average score of expert validators is 84.58%. Thus, it can be concluded that the assessment instrument is valid for all aspects (material, construction, language and additional rules with minor revisions.

IV. Conclusion

The results of the research for the Preliminary Stage can be explained that the implementation of Civics learning in Senior High Schools has been able to improve students' ability to think analytically, deviate, be creative, develop new values and knowledge. PPKn teachers are able to create conducive learning, motivate students to learn actively, and think critically and innovatively. The results of the curriculum analysis of KD 3.1 found four main materials, namely the concept of human rights and obligations; (2) the substance of human rights and obligations in the perspective of Pancasila; (3) cases of human rights violations; (4) efforts to enforce human rights. For the Prototyping Phase, the HOTS assessment instrument for Civics subjects is in the valid criteria with an average validity level of 84.58%. This means that the instrument is valid for all aspects (material, construction, language, and additional rules) and can be used with minor revisions.

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