

Data Analysis On Multiple-Intelligences As A Basis Of Mapping And Increasing Independent Assignment Score In Civic Education Learning Based On Controversial Issues In Mass Media

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Abstract: The objective of the study was to describe the data analysis on multi-intelligences as a basis of mapping and increasing independent assignment score in civic education learning based on controversial issues in mass media. It used a research and development. The data were collected with interview, observation, questionnaire, and document. These were validated by checking credibility with a triangulation technique, member check, and peer-group discussion (FGD). The data were analyzed an interactive model. The results of the research show that 1) mapping an assignment based on multi-intelligences test, articles on controversial issues, critical analysis, picture/sketch/visualization, role-playing video, video clip, video blog, and self-introspection narration, and taking activities in keeping existence of nature in a written report. 2) Increasing students' assignment score could compared among early assignment qualities, nob based on multiple-intelligences with independent assignment tests 1 and 2, based on multiple intelligences. The mean score of the early independent assignment was 77.05 and the mean score of the independent assignment 1 was 81.06. It means that increasing independent assignment qualities based on multiple-intelligences was 4.01 points. In comparison with the mean score of the assignment 2 was 8.03 points.

Index Terms: Data Analysis, Civic Education, Controversial Issues, Independent Assignment, Learning, Multiple Intelligences.

1 INTRODUCTION

INTELLIGENCE is a very meaningful gift from God for students in particular and man in general. An individual's intelligence can be seen from a language use in communication. It can be useful for conveying information that is easy to understand. The ability to use a language will encourage students to express opinions, solve problems, and give response to an event or the like logically, rationally, and critically. In a learning activity, therefore, students' academic and non-academic achievements are not only influenced by high IQ but it is also affected by multiple intelligences.

It is relevant to [30] and [33], suggesting that today, what can an individual do is more widely thought than what he does with the advances in the field of education and psychology. Gardner in 1999 [15] proposed that any individual has a variety of intelligence degrees: mathematical-logical, verbal-linguistic, musical-rhythmic, bodily-kinesthetic, intrapersonal, social, visual-spatial and nature. Moreover, he stated that multiple intelligence theory describes the learning styles, interests, capabilities and tendencies of individuals. Two important advantages of multiple intelligences in education are 1) giving the opportunity to plan our education program so as to make the students desired and 2) enabling us to reach more students trying to learn different disciplines and theories [16] [34]. Learning would be realized much easily on condition that students are trained by using these intelligence fields [5] [35]. It is quite important to apply multiple intelligence theory in science and technology teaching [10] [37]. Hanafin in 2014 [18] suggested that the idea of intelligence as a general and measurable ability, with "innately determined limits, differing markedly from one individual to another. The present research paper discusses the multiple intelligences as a basis of mapping and increasing independent assignment score in civic education learning based on controversial issues in mass media. Scoring system of Civic Education subject is not only based on mid-semester test and final-semester test but on independent assignments at 20% of total score. These assignments should include students' multiple intelligences as suggested by [14] [36]. The components of multiple intelligences will make students take an active role in learning process and increasing an academic achievement of civic education as formulated in learning outcome. In a non-academic field, these intelligences will make them competent in taking a role or participation in a national and international political. Referring to competency, there are three components of civic education course or subject, including civic knowledge, civic skills, and civic dispositions. It is relevant to [32] and [40], suggesting that the combination of civic qualities (civic duty, civic responsibility, civic conscience, civic activity, respect and

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acceptance of civic rights and responsibilities, civic consciousness) is a civic education, as one of the main personality characteristics.

2 LITERATURE REVIEWS

2.1 Intelligence

Intelligence is the ability to acquire and apply knowledge. Gardner (in [6]) stated that intelligence is the ability to 1) solve a problem, 2) create new problems to be solved, and 3) create a thing or offer a service that will produce a culture appreciation. According to [17], [38] and [39], intelligence is the ability to 1) study and understand experience as well as and acquire knowledge; 2) give response fast and succeed in new situation, use a mind and thought for problem solving, 3) study, understand, and analyzed) study facts and skill and apply what have been studied.

2.2 Components of Intelligences

A person's intelligence consists of some components. If one component removes, he or she does not think comprehensively. It can be seen in inconsistent thinking that does not cohere between language and attitude. Also, he or she can't perform self-introspection. Alfred Binet and Theodore Simon (in [9]), a man's intelligence comprises three components, including the ability to guide a mind or action, change a way of action if it has been taken, and criticize oneself. These must be met by himself or herself or another person's aid although taking a long process of training [41].

2.3 Factors in Intelligence

A person's intelligence can be enhanced by referring to his or her optimal and maximal ability. In the level, a person's ability in a certain discipline will seem very dominant. According [28] and [50], there are some factors in intelligence: a) genetic, b) nutritious, c) character, d) environment, and e) mental. Gunawan in 2006 [17] stated the factors in intelligence growth and development: a) environment; b) ability and decision, c) experience, d) genetic, and 5) life style.

2.4 Multiple Intelligences

Gardner (in [24]), multiple-intelligences do theoretically not refer to all data. The theory uses a variety of independently traditional researches: neurology, specific population, development, psychometric, anthropology, evolution, and so on. According to Armstrong (2005: 18), Gardner's theory is fundamentally used for identify and develop a wide ability spectrum available in children although standard IQ test does not indicate that all the children have a high IQ. Each will have a dominant or specific intelligence out of eight intelligences [42]. Gardner (in [20]) suggested that each person has different abilities or multiple-intelligences. It is relatively independent from one another. Various intelligences have different manifestations in different cultures [43]. Fleetham (in [31]) suggested that multiple intelligences are various skill and talents learners have in solving different learning problems.

2.5 Kinds of Multiple Intelligences

According to [12] and [44], there are seven intelligences: a) verbal, b) visual, c) logic-mathematical, d) musical, e) kinesthetic, f) intrapersonal, and g) interpersonal. Gardner (1999: 47) developed three other intelligences: natural, existential, and spiritual [9]. According to Gardner (in

Armstrong, 2005), after studying various abilities, competencies, and skills, Gardner listed the kinds of intelligences: 1) linguistic intelligence, 2) logical-mathematical intelligence, 3) spatial intelligence, 4) bodily-kinesthetic intelligence, 5) musical intelligence, 6) interpersonal intelligence, 7) intrapersonal intelligence, and 8) naturalist intelligence. However, Howard Gardner (in [28]) used the term intelligence to replace the term kata talent. He suggested that there are nine intelligences: logical-mathematical, linguistic-verbal, spatial-visual, musical, bodily-kinesthetic, naturalist, intrapersonal, interpersonal, and existential.

3 RESEARCH METHOD

3.1 Research Approach

The study applied the research & development approach because it was used for increasing an independent assignment referring to multiple-intelligences in civic education learning based on controversial issues published in mass media. It was very excellent to employ when seen in a research procedure based on students' need and real situation in higher education.

3.2 Research Procedure

This study was an intensive and development research. It took the following stages, beginning from early survey, model design development, model design test to model validation in a systematic cycle. The early survey was used as a basis of model development. In the survey, the researchers observed, interviewed, and distributed questionnaires to the subjects. In the model development, they made a draft of civic education learning based on controversial issues in mass media in the form of the students' independent assignments based on multiple-intelligences. The study referred to the action research, including plan, do, observe, and reflect (Hopkins, 1993). In the model test stage, an effective hypothetical model completed was tested by experiment.

3.3 Data Collection and Research Instrument

The qualitative data was collected by observation and survey, interview, and document. As additional information, the quantitative ones were gathered by using questionnaires. Stage 1 analyzed the problems as formulated in the research and model design plan used a qualitative approach. Stage 2 tested the model that was validated by using a quantitative approach. The research took these stages: a) reading literature reviews – for collecting literatures on model development of students' multiple-intelligences in doing independent assignments of civic education learning, b) increasing independent assignment quality as civic education learning development in higher education, and c) making a model design draft. The stages of making the draft are 1) identifying need analysis, 2) making a model design concept, 3) carrying out a participative-collaborative workshop as an early step for the validation of model design, 4) testing a model of increasing independent assignment quality referring to multiple-intelligences in civic education learning based on controversial issues in mass media, and 5) completing the model so that it was reasonable to be a reference. The description and analysis of the model was used as a reference to formulating a model design draft. The data were obtained from in-depth interview, observation and survey, and documentation. The interviews were in the unstructured and

structured forms. The unstructured interview happened in the early. The structured one was based on conveying the respondents' information. It was used as a material for formulating more structured questionnaires in order to find accurate data. The researchers employed three approaches: 1) informal conversation in spontaneity and relax without a given pattern or way; 2) use of sheets inscribed with topics; and 3) use of listed open-questionnaires in more details. These had previously been prepared and asked based on statement problems in order. The data were gathered with formal and informal observation and survey of research location. To obtain empirical information, the researchers took a passive role in civic education learning process. Another collection technique of to complete data was analyzing the results of questionnaires, documents/files, and literatures on multiple- intelligences and civic education learning model based on controversial issues in mass media.

4 DATA VALIDATION

Data validation was checking their reliability, referential sufficiency, and triangulation. In particular, the research used a source or data triangulation and peer-debriefing. The triangulation technique was used for exploring and reliable information by comparing the results of observation with

interview and those of interviews with documents available. The peer-debriefing technique was employed by discussing the results of research with experts in similar knowledge. It was intended to validate the logically-tested results so that the data were very deeply accurate.

4.1 Data Analysis

Data were analyzed with an interactive model of data collection, data reduction, data display, and verification /conclusion. The components were closely related to one another so that the data were very accurate to make a conclusion [21] [45] [52].

5 ANALYSIS RESULTS AND DISCUSSION

An early test was used as a tool of understanding students' multiple intelligences in civic education. The results of the test show their talent and interest used for mapping independent assignment. The kinds of test are 1) linguistic intelligence, 2) logical-mathematical intelligence, 3) spatial intelligence, 4) bodily-kinesthetic intelligence, 5) musical intelligence, 6) interpersonal intelligence, 7) intrapersonal intelligence, and 8) naturalist intelligence. Mapping the assignments based on multiple intelligence test strengthened with interview and observation is reported in TABLE 1 below.

TABLE 1
ASSIGNMENTS BASED ON MULTIPLE INTELLIGENCE TEST

No	Kinds of Intelligences	Descriptions	Percentages (%)	Independent Assignments
1	Linguistic (Word Smart)	Using words appropriately, accurately, and effectively	24.04%	Writing an article based on controversial issues in mass media using standard language that adhere to scientific-grammatical rule
2	Logical-mathematical (Number smart)	Analyzing data and causality relation; expressing, asking a question, answering, and arguing logically	20.06%	Analyzing controversial issues in mass media critically and rationally based on facts, data, and theories
3	Spatial (Picture Smart)	Being skill in making a picture/sketch/visualization of an event and interpreting it.	11.06%	Making a picture/sketch/visualization of controversial issues manually or using ICT
4	Bodily-kinesthetic (Body Smart)	Being skill in using a language, body language, and expression in role playing	10.04%	Making role-playing video visualizing controversial issues in mass media
5	Musical (Music Smart)	Being skill in singing anthem, reminding musical melodies, having skill in rhythm related to instructional materials	5.05%	Composing national anthem in video clip that could be made as a medium of controversial issues
6	Interpersonal (People Smart)	Understanding and cooperating with members in a group work or team work	15.04%	Making a blog representing skill communication and cooperation
7	Intrapersonal (Self Smart)	Making self-introspection, being responsible for a mistake, making, strength, and weakness	8.03%	Writing a narration describing self-introspection and exploring strength and weakness
8	Naturalist (Nature Smart)	Keeping existence environment, flora, and fauna and preserving them.	3.08%	Taking activities in keeping existence of environment, flora, and fauna in written text

Based on the early test strengthened with the results of interview and observation, it is found that 24.04 %of the students taking civic education course have a good intelligence. It was indicated with the ability to use words appropriately, accurately, and effectively. It was used as a basis of determining independent assignments. The students were asked to write an article, based on controversial issue analysis in mass media, by using a standard language and adhering to scientific-grammatical rules. It is found that the students taking civic education subject and having a good logical-mathematical intelligence reached 20.06%. It was indicated with the ability to analyze data and causality relation, express opinion, ask questions, and argue logically and rationally. It could be used as a basis of determining independent assignments. The students were asked to analyze controversial issues critically and rationally based on facts, data, and theories. The students with spatial intelligence achieved 11.06%, indicated with their skills in making a

picture/sketch/visualization of an event and interpreting it. It could be used a basis of determining independent assignments. They were asked to make a picture/sketch/visualization of controversial issues manually or using ICT. Those with bodily-kinesthetic intelligence amounted 10.04%, indicated with the skill or ability to use body language and expression in role playing. For this, independent assignments were that the students were asked to make a role-playing video that visualized controversial issues in mass media. The students with musical intelligence reached 5.0%, indicated with the skill and ability to sing anthem, memorize musical melody, and understand rhythm of instructional materials. For this, the independent assignments were that they were asked to make video anthem in video clip that could be used as controversial issues. The students with interpersonal intelligence achieved 15.04%, indicated with the skill or ability to understand other people and could cooperate with them in teamwork or group work. Thus, the independent

assignments were that they were asked to make blog that represented the skill in communication and make a decision of problems collaboratively. The students with intrapersonal intelligence reached 8.03%. It was indicated with the ability to make self-introspection and explore strength and weakness as well as be responsible for activities. Therefore, the independent assignments were writing a narration describing the result of self-introspection and controversial issues. Their naturalist intelligence reached 3.08%, indicated with the ability to keep existence of environment, flora, and fauna and preserve them. The independent assignments proposed were that the students took activities that represented their actions in keeping existence of environment, flora, and fauna in a written report. The students with multi intelligences taking civic education subject or course based on controversial issues were very good. It could give a 20% contribution to the final score of the course. They preferred the independent assignments based on multi-intelligences because these were suitable to their talents. The increased scores of independent assignments can be described in TABLE 2 below.

TABLE 2
SCORES OF INDEPENDENT ASSIGNMENTS

No	Intelligences	Independent assignments	Mean score			
			Not based on M I	Test 1	Test 2	
1	Linguistic	Write an article, based on controversial issue analysis in mass media, by using a standard language and adhering to scientific-grammatical rules.		77.08	84.05	
2	Logical-mathematical	Analyzing controversial issues critically and rationally based on facts, data, and theories		68.04	75.02	
3	Spatial	Making a picture/sketch/visualization of controversial issues manually or using ICT		78.02	81.03	
4	Bodily-kinesthetic	Making a role-playing video that visualized controversial issues in mass media		75.02	78.06	
5	Musical	Make video anthem in video clip that could be used as controversial issues		86.01	88.03	
6	Interpersonal	make blog that represented the skill in communication and make a decision of problems collaboratively		87.02	88.01	
7	Intrapersonal	Writing a narration describing the result of self-introspection and controversial issues.		80.05	81.06	
8	Naturalist	Taking activities that represented their actions in keeping existence of environment, flora, and fauna in a written report		90.04	91.05	
Mean				77.05	81.06	85.08

The increased score of the independent assignments can be compared between the early assignment not based on multiple intelligences and the independent assignment tests 1 and 2 based on multiple intelligences. The mean score of the assignment was 77.05% and that of the assignment 1 was 81.06%. It means that there is an increased quality of independent assignment based on multiple intelligences at 4.01 points and if it was compared with the mean score of the assignment 2 was 8.03 points. According to [51], the implementation of multiple intelligences in leaning activity needs the components of schooling system. These components are 1) students' parents, 2) teachers, 3)

curriculum and facilities, and 4) scoring system. Students' parents should give a little chance for selecting competency based on intelligence and talent students have. Teachers should put attention to students' intelligence and increase the ability to manage learning process. Curriculum and facilities used by teachers and students can increase specific intelligences. Scoring system needed by school that employ multi intelligences theories were different form that employed by conventional school. School employing the theories essentially assumed that all the individuals were intelligent. The scoring system was not based on input and learning process, but it was oriented to process and advancement students paid to when studying a specific skill. Multiple intelligences research (MIR) is a sort of research instrument that can be useful for describing a person's intelligence [7] [49]. In education field, the intelligences can be used as an instrument test of MIR. It can be used for understanding students' highest intelligence and learning style. In learning process, the instrument can be used for aiding to explore students' best condition, namely a profession that will produce benefit in a community' life, not related to spiritual intelligence [11] [48]. The research by [1] and [47] suggested that a student's learning style greatly influences an understanding of materials and a teachers' learning strategy also highly affect his or her outcome. According to [7], learning style is how information can be well-understood by students. Gardner in 2006 [16] stated that learning style was represented by a student's intelligence. Khosiyah in 2012 [19] suggested that learning style is a key to develop some performance in a working place, school, and intrapersonal situations. Therefore, it can be stated that one student will essentially be different from another. Hyder Ali in 2013 proposed that paradigm will change a perspective toward students' intelligence and capacity. They will change their previous intelligence and capacity in a linguistic and logical context. According to [26] and [46], learning is a regular and systematic since it is related to what competency want to be achieved. Rusmono in 2012 [23] suggested that learning is an effort of making condition to enable students to obtain sufficient learning experiences. Nawi in 2012 [22] proposed that learning strategy is a description representing the components of instructional materials and procedures managed by teachers so that students will play an active role in learning process for achieving a learning outcome as expected. According to [3], selecting and using education media must be consistent with teachers' instructional material, method, evaluation, and ability and students' ability. The Education Administration Team of Indonesian Education University (2012) proposed that learning sources out of the class will be an interaction tool in learning process and rest-taking time that must be essential to understand by teachers. Civic education subject or course is planned to develop an individual's potency in order to be a faithful, smart, participative, and accountable citizen. Theoretically, civic education is designed to be a learning subject that discusses cognitive, affective, and psychomotor dimensions. These are confluent; one is penetrated to another; one is integrated with another in a substantial idea, value, concept, Pancasila's moral, democratic citizenship, and country's defense. Pragmatically, civic education is designed to be a learning subject that emphasizes on content embedding values and learning experiences actualized in an attitude and behavior of daily activities [4] [44]. Based on competency development, there are three essential

components in civic education subject, including civic knowledge, civic skills, and civic dispositions.

6 CONCLUSION

Multiple intelligences are used for mapping independent assignments in civic education leaning based on controversial issues in mass media. These intelligences can increase students' learning quality in doing independent assignments. They prefer to do them based on their talents and learning styles. The score of them is over 20%. Thus, it highly affects students' learning outcome or academic achievement. The study is restricted to civic education subject taken by students of Pancasila and Civic Education. It is recommended that there will be different subjects in a further research.

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