

Instructional Model Developing of Search Engine based Values-Analysis-Model for Intelligent Decision Making

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Abstract

This research was conducted to answer the question, whether a Values Analysis Model Based on Search Engine is valid, practical, interesting and effective for intelligent decision making. This model modifies the existing Values Analysis Model by utilizing Search Engine to suit the current digital era. The method used in this study is research and development (RandD) with the ADDIE model (Analyze, Design, Develop, Implement, Evaluate). Unlike Coombs' original Values Analysis Model, which emphasized data collection for decision-making, the model resulting from this research focuses more on testing the four value principles implied in the decision. This model is validated by model experts to ensure feasibility in terms of logic, model presentation procedures, scientific methods and appearance. While media experts validate the completeness of model elements, formats and presentation techniques. The validation results by model experts show that this model obtained a score of 100%, indicating that this model is very valid and feasible to use without the need for revision. Meanwhile, validation by media experts obtained a score of 95%, indicating that this model is very valid and feasible to use without revision. In addition, trials of the practicality, attractiveness, and effectiveness of the model were conducted involving lecturers and students. The results of the questionnaire showed that this model is very practical, effective, and interesting, with an average score of 97.5% from lecturers and 97% from students. The Values Analysis Model Based on Search Engine learning model for intelligent decision making is practical, effective, and interactive, and is able to improve students' ability to make intelligent decisions so that they are not easily influenced by HOAX news and can make intelligent decisions.

Keywords: learning model, Values Analysis Model Based on Search Engine, decision making, innovative technologies

Introduction

With the flood of information from the mass media dan search engine, it is necessary to develop a learning model that is able to utilize it for learning by sorting and selecting relevant facts for intelligent decision making. Presidential Regulation No. 8 concerning Indonesian National Qualification

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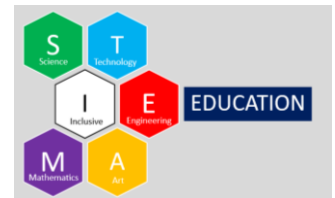
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Framework (Kerangka Kualifikasi Nasional Indonesia/KKNI), Level 6, among others, states that undergraduate graduates are expected to be "able to make the right decisions based on analysis of information and data; and able to provide guidance in choosing alternative solutions independently and in groups." Based on these regulations, it is very important to develop learning that is intended to realize the creation of ideal graduates.

The ability to make intelligent decisions is a prerequisite for the realization of a complete human being. Even Phenix has reminded us decades ago that the ability to make decisions is an important element in the curriculum that leads to the formation of a complete human being (Phenix, 1960). Decision making through learning requires interpretation and integration of new knowledge, practical application, and adjustment when facing problem situations by utilizing innovative opportunities (Biber, Tuna, and Incikabi, 2013). Critical thinking in intelligent decision making is recognized as an important goal because it helps students face various challenges in life and career (Halpern, 1998; Tsui, 2002). John Dewey argued that "reflective thinking, the careful collection and evaluation of evidence leading to a conclusion, should be a central aim of education (King, Wood, and Mines, 1992). This is a strong reason for choosing this search engine-based value analysis model in this study. Because so far the existing learning models are general and tend to be conceptual; less utilizing the collection of facts in making careful conclusions and reflective thinking. These skills help students evaluate arguments, resolve conflicts, and solve complex problems intelligently (Allegretti and Frederick, 1995). In fact, all disciplines and levels of education need to prepare individuals to think well (Chenault and Duclos-Orsello, 2008; Pithers and Soden, 2000).

Facts and information needed in learning are very easy to obtain by using search engines, either through the most popular www.google.com today, www.yahoo.com, www.bing.com, www.altavista.com, www.ask.com, or from others such as Microsoft, Open Directory, AOL, Baidu, and many more. People can access data and references quickly, easily, and abundantly by searching on search engines. The question is whether brain ware is ready to utilize existing software and hardware. In 2024, more than 220 million people in Indonesia will be active internet users or 70% of the Indonesian population (<https://www.komdigi.go.id/berita/> accessed on February 7, 2024). However, today's mass media sometimes causes chaos because people's abilities or brain ware are inadequate.

PISA (Program for International Student Assessment) 2022 failed to achieve the target of the National Medium-Term Development Plan 2024. Indonesia's PISA 2022 reading score dropped to 359 from 371 in 2018, while the 2024 target was 392. The mathematics score also dropped to 366 from 379, while the 2024 targeted 388. The science score also dropped from 396 to 383, while the RPJMN 2024 target was 402. <https://www.oecd.org/en/about/programmes/pisa.html>. Accessed February 2, 2025.

One of the causes of learning failure is the selection of an inappropriate learning model. There are six considerations in choosing a learning model, namely student needs, learning objectives, class dynamics, teacher abilities, available learning time and facilities, flexible and adaptive attitudes (<https://pce.sandiego.edu/co-teaching-models/> uploaded on November 24, 2024 and accessed February 2, 2025). Based on these considerations, researchers are interested in conducting a study on the development of a search engine-based value analysis model for intelligent decision making. Another consideration is this value analysis model because it is one of two learning models recommended by Unesco since 2010.

Method

This study uses the Research and Development (RandD) method with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model. The trial was carried out in stages starting from individual, small group, to field tests to assess whether the search engine-based value analysis learning model is valid, practical, and effective according to model experts, media experts and users. The

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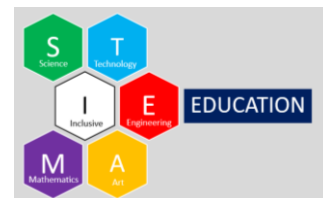
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research subjects consisted of learning experts, lecturers and students participating in the global perspective and basic concepts of elementary school social studies courses at the elementary school teacher education study program, Universitas Negeri Malang. Data were obtained through observation, interviews, and questionnaires to collect input at each stage of development. Validation was carried out by model experts and media experts to assess the validity of the search engine-based value analysis model, while to assess the practicality and effectiveness was carried out by the lecturers and students. The research data consists of quantitative data from validity and practicality obtained through questionnaires, qualitative data comes from the results of observations and interviews to obtain data on the effectiveness of the model. Quantitative data are analyzed descriptively using Likert and Guttman scales to measure validity and practicality, while qualitative data from the model product is done through interviews and observations.

Results

The purpose of this study is to produce a product in the form of a valid and practical search engine-based value analysis model according to model experts and media experts and effective according to users, namely lecturers and students. This study was conducted on participants in the global perspective and basic concepts of elementary school social studies courses at the elementary school teacher education study program, Universitas Negeri Malang. The following is the research procedure for developing a search engine-based value analysis model.

1. *Analyze*

The analysis activity follows six procedures (Branch, 2009) to identify learning needs. First, conduct an analysis of the 2024/2025 odd semester lecture plan for the global perspective and basic concepts of elementary school social studies courses. The needs analysis is carried out with semester lecture plan documents, interviews and direct observations, with the aim of identifying learning problems and finding appropriate solutions. Second, determine the objectives of the global perspective lecture, namely to examine global issues and problems from the perspective of science, technology and communication "and the objectives of the elementary school basic concepts of social studies lecture are to be able to practice inquiry skills to construct generalizations (distinguish generalizations from facts and concepts) and use generalizations to make predictions.

Lecture observation activities were carried out in the Elementary School Teacher Education Study Program, from October 7 to October 11, 2024, several problems were found, such as not all students were active in discussions, even though some were active, the quality of thinking was still shallow, often speaking without adequate supporting data or facts and was normative, students' dependence on cellphones in answering questions so that discussions were not enthusiastic and only mechanical, not using data in answering questions, lectures only relied on discussions by displaying PPTs prepared by students without being based on supporting facts. Finally, the conclusion of the discussion or decision making seemed rash and shallow. Based on these results, it was concluded that the development of learning in the form of a search engine-based value analysis model was needed to help students think and carry out lecture activities based on facts and data. Third, curriculum analysis was carried out by reviewing semester lecture plans, interviews with lecturers and students in the global perspective course and basic concepts of elementary school social studies. Fourth, identifying the resources needed. Lectures use a Learning Management System called Sipejar, wifi is smooth, students are already in semester seven. Fifth, determining a learning system that uses LMS. Sixth, prepare a project management plan, namely the use of a search engine-based value analysis model.

2. *Design*

The design stage is carried out by reviewing the learning steps of the value analysis model that has not used a search engine developed by Coombs and Meux's writing entitled "Teaching strategies for value

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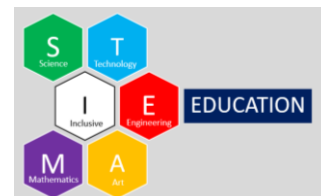
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analysis" (1971) in the book (Milton and Meux, 1977), from the book "Models of Moral Education" (1980); developed by Hersh et al. and from Kniker's writing from the book "you and values education" (1977). All three are old books that are always referred to by current research. Furthermore, designing a value analysis model that already uses a search engine with an excel format that includes learning steps and a place to put links containing data that can be supplemented with supporting data, illustrations, images, videos, and audio. Furthermore, a search engine-based value analysis model was developed based on input from lecturers and students, consisting of sub-materials: global issues and problems for the Global Perspective course; and elementary school social studies inquiry skills to compile generalizations (distinguishing generalizations from facts and concepts), using generalizations to make predictions" from the elementary school social studies basic concept course. Finally, a validation instrument was prepared to ensure the quality of the search engine-based value analysis model, which includes an assessment of validity, practicality by model experts and media experts, and an assessment of effectiveness by users, namely lecturers and students.

3. *Development*

The development stage consists of three main parts. First, the creation of a search engine-based value analysis model product. Second, the pre-validation of the search engine-based value analysis model is carried out to obtain suggestions and input from the course lecturers before the validation test by model experts and media experts. Some suggestions given by the lecturers are link placement and additional information regarding "value considerations". Third, the validation of model experts and media experts is explained as follows.

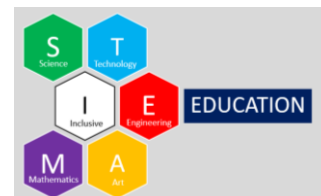
a. *Expert Validation of Learning Models*

The media validation process was carried out by 2 (two) lecturers from the Elementary School Teacher Education Study Program, Universitas Negeri Malang. This validation took place on October 21, 2024. The assessment includes four main aspects, namely logic, presentation procedures, scientific methods, and appearance. The following are the results of the expert assessment of the learning model.

Table 1 Validation Results from Model Experts

No	Aspect	Descriptor	Score Acquisition				Notes
			4	3	2	1	
1.	Logic	Activities in accordance with the rationale formulated by the creator of the value analysis model	✓				
		Distinguish between facts and value criteria.	✓				
		Relevance of basic concerns with the topic.	✓				
2.	Presentation Procedure of the model	There are activities to identify and clarify value questions.	✓				
		There is a place to collect supporting facts.	✓				
		There are activities to assess the truth of supporting facts obtained through search engines.	✓				





	There are activities to clarify the relevance of facts obtained through search engines.	✓
	There are activities to reach a temporary value decision	✓
	There are activities to test the value principles implied in decisions.	✓
3.	Scientific method	The steps of the model correspond to the steps of the scientific method. ✓
4.	Appearance	The layout in the search engine based value analysis model is well organized and not confusing. ✓
	The complete appearance of the value analysis model is visible in the product.	✓
Total Score		48
Total Maximum Score		48
Average Percentage		100%
Validity Level		Very Valid
Test Decision		Worth to use

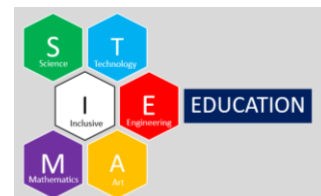
Based on the results of the model validation, it is known that the search engine-based value analysis model obtained a quantitative score of 48 with an average percentage reaching 100%. This percentage refers to the validity and practicality criteria table in the very valid category. In addition, qualitative data from the validator shows that this media is considered good.

b. Validation from Media Experts

The media validation process was carried out by 2 (two lecturers) from the Elementary School Teacher Education Study Program, Universitas Negeri Malang. This validation took place on October 23, 2024. The assessment includes three main aspects, namely the completeness of the model elements in the media, the media format of the model, and the model presentation technique. The following are the results of the material expert assessment of the search engine-based value analysis model.

Table 2 Validation Results from Media Experts

No	Aspect	Descriptor	Score Acquisition				Notes
			4	3	2	1	
1.	Completeness of model elements	There are value objects that are studied	✓				
		There is a separation of positive and negative facts for the data obtained from search engines	✓				



		There is a separation for general data and specific data obtained from search engines.	✓
		There is an additional value judgment for consideration in assessing facts obtained from search engines.	✓
2.	Media formatting from Model	Easy to put supporting facts in the form of links to enter data sources.	✓
		There is a clear relationship between the data links in the basic concern data row.	✓
		The layout in the search engine based value analysis model is well organized and not confusing.	✓
		The full view of the search engine based value analysis model is visible in the product	✓
3.	Model Presentation Techniques	The presentation of the model is structured and easy to understand.	✓
		Presentation of concise and practical model.	✓
Total Score			36
Total Maximum Score			40
Average Percentage			95%
Validity Level			Very Valid
Test Decision			Worth to use

The results of the media expert validation obtained a score of 36 with a percentage of 95%. This percentage is based on the validity criteria table and is included in the very valid category.

4. Implementation

The implementation stage is carried out through three trial stages, namely individual trials, small group trials and field trials on students participating in the global perspective and basic concepts of elementary school social studies courses in the elementary school teacher education study program. The assessment of practicality and suitability is carried out by filling out a questionnaire by lecturers and students.

a. Lecturer Assessment

The assessment of practicality and suitability was conducted on Tuesday, October 22, 2024 by Mrs. U.U. and Mr. L. as lecturers in charge of the global perspective course and lecturers in the basic concepts of elementary school social studies. Quantitative data are presented in the following table.

Table 3 Results of Practicality and Interest Assessment from Lecturers

No	Tester	Skor	Category
1.	Lecturer of global perspective course	97,50%	Very practical/interesting

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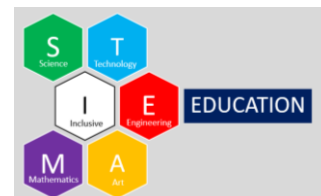
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2.	Lecturer of the subject of basic concepts of social studies in elementary schools	97,50%	Very practical/interesting
Average		97,50%	
Test decision		Worth to use	

The assessment results with an average of 97.50% show that it is very practical and interesting.

a. *one two one trial*

Individual trials were conducted by model experts and media experts, and assessments by the lecturers in charge of the course, stating that the media was valid, practical, and effective with the suggestions and input provided. Individual trials were conducted on Tuesday, October 29, 2024. Four students taking the global perspective course and four students taking the elementary school social studies basic concepts course with different abilities (varying GPAs) took part in this trial to assess the validity and practicality of the learning model. The results of filling out the questionnaire are described as follows.

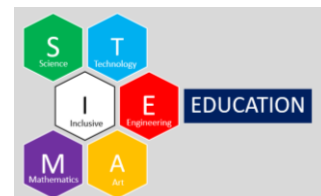
Table 4 Results of the Practicality and Interest Assessment of Individual Trials of the Global Perspective Course

No	Aspect	Question	Total Score Acquisition	Percentage
1	Practicality	In your opinion, is it easy to use a search engine-based value analysis model?	4	100%
		Does the search engine based value analysis model help to weigh the positives and negatives?	4	100%
		Does the table in the search engine based value analysis model support decision making?	4	100%
		Do you like search engine based value analysis models?	4	100%
2.	Relevance	Does the search engine-based value analysis model make it easy to select relevant facts using value judgments?	4	100%
		Does the search engine-based value analysis model make it easy for you to organize your data?	4	100%
		Does the presentation in the model allow you to organize facts around issues?	3	75%
		Are you able to distinguish facts based on whether they have positive or negative “valence”?	4	100%
		Are you able to easily fit specific facts appropriately into more general data?	4	75%
		Does the model allow you to rank facts based on their significance to value decisions	3	75%
		Total Score		38
Total Maximum Score		44		
Average Percentage		95%		

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Level of Practicality/Interest

Very Practical/Interesting

Table 5 Results of the Practicality and Interest Assessment of Individual Trials of the Basic Concepts of Elementary School Social Studies Course

No	Aspect	Question	Total Score Acquisition	Percentage
1	Practicality	In your opinion, is it easy to use a search engine-based value analysis model?	4	100%
		Does the search engine based value analysis model help to weigh the positives and negatives?	4	100%
		Does the table in the search engine based value analysis model support decision making?	4	100%
		Do you like search engine based value analysis models?	4	100%
2.	Relevance	Does the search engine-based value analysis model make it easy to select relevant facts using value judgments?	4	100%
		Does the search engine-based value analysis model make it easy for you to organize your data?	4	100%
		Does the presentation in the model allow you to organize facts around issues?	3	75%
		Are you able to distinguish facts based on whether they have positive or negative "valence"?	3	100%
		Are you able to easily fit specific facts appropriately into more general data?	4	75%
		Does the model allow you to rank facts based on their significance to value decisions	4	75%
Total Score			38	
Total Maximum Score			40	
Average Percentage			95%	
Level of Practicality/Interest			Very Practical/Interesting	

The data from the results of filling out the questionnaire on practicality and relevance of individual tests, the two classes of different courses obtained the same average results, which was 95%, so the product was declared very practical and relevant. According to the eight students who took part in the individual trials, learning the value analysis model based on search engines was good and opened up insights because they could surf to find data, collect facts that were truly relevant for decision making and conduct tests to check whether the decisions taken were indeed correct.

b. Small Group Trial

Small group trials to determine whether the developed search engine-based value analysis model learning meets the criteria of practicality and attractiveness. The implementation began with coordination activities with lecturers participating in the global perspective course to determine 1 class (36 people) that would carry out the small group trial. The small group trial was carried out directly in Sutarno, Mark Heyward, Titis Anggarini

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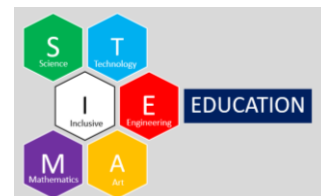
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the Elementary School Teacher Education Study Program on Tuesday, November 5, 2024 for the global perspective course and Wednesday, November 6, 2024 for the elementary school social studies basic concept course. The results of filling out the student response questionnaire regarding practicality and attractiveness in the small group trial are described as follows.

Table 6 Results of the Practicality and Interest Assessment of the Small Group Trial

No	Aspect	Question	Total Score Acquisition	Percentage
1	Practicality	In your opinion, is the use of a search engine-based value analysis model easy to apply in learning?	36	100%
		Does the search engine-based value analysis model help you understand the lecture material?	36	100%
		Is the use of language in the search engine-based value analysis model easy to understand?	34	91,67%
		Do you like the search engine-based value analysis model?	36	100%
2.	Attraction	Is the search engine-based value analysis model an interesting learning model?	34	91,67%
		Does the search engine-based value analysis model make you feel happier in learning?	36	100%
		Do you like the appearance of the search engine-based value analysis model used?	32	83,33%
		Is the presentation of lecture material in the search engine-based value analysis model clear and easy to understand?	34	91,67%
		Are the fonts, text sizes, colors, and images in the search engine-based value analysis model clear and attractive?	36	91,67%
		Can the use of the search engine-based value analysis model reduce your boredom in learning?	34	83,33%
Total Score			348	
Total Maximum Score			360	
Average Percentage			97%	
Level of Practicality/Interest			Very Practical/Interesting	

Based on the table above, the average practicality value is 97%, so the product is declared very practical and attractive. According to 36 students, this model is practical and can help make decisions more focused and intelligent.

c. *Field Trial*

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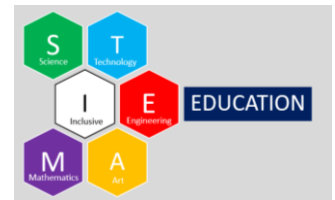
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Field trials to determine whether the developed search engine-based value analysis model learning meets practical and valid criteria. The implementation of the field trial began with coordination activities with lecturers of the global perspective and basic concepts of elementary school social studies courses. Participants in the global perspective and basic concepts of elementary school social studies courses who took part in the field trial were different from students during the individual trials and small group trials. The field trial consisted of 36 participants in the global perspective course and 38 participants in the basic concepts of elementary school social studies course. The field trial was conducted on Tuesday, November 5, 2024 and Wednesday, November 6, 2024. The results of filling out the student response questionnaire regarding practicality and interestingness in the field trial are described as follows.

Table 7 Results of the Practicality and Interest Assessment of the Field Trial (in the Global Perspective course)

No	Aspect	Question	Total Score Acquisition	Percentage
1	Practicality	In your opinion, is the use of a search engine-based value analysis model easy to apply in learning?	42	95,45%
		Does the search engine-based value analysis model help you achieve your study goals?	44	100%
		Is the use of the components of the search engine-based value analysis model easy to understand?	43	97,73%
		Do you like the search engine-based value analysis model?	44	100%
2.	Attraction	Is the search engine-based value analysis model an interesting learning model?	44	100%
		Does the search engine-based value analysis model make you feel happier in learning?	44	100%
		Do you like the appearance of the search engine-based value analysis model used?	42	95,45%
		Is the presentation of the search engine-based value analysis model clear and easy to understand?	44	100%
		Do the components of the search engine-based value analysis model enjoy searching for data for decision making?	43	97,7%
		Can the use of the search engine-based value analysis model reduce your boredom in learning?	37	84,09%
Total Score			1397	
Total Maximum Score			1440	
Average Percentage			97%	
Level of Practicality/Interest			Very Practical/Interesting	

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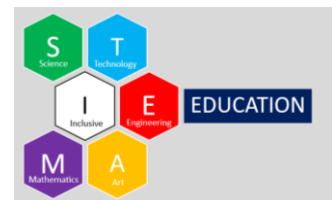


Table 8 Results of the Practicality and Interest Assessment of the Field Trial (in the Basic Concepts of Elementary School Social Studies course)

No	Aspect	Question	Total Score Acquisition	Percentage
1	Practicality	In your opinion, is the use of a search engine-based value analysis model easy to apply in learning?	42	95,45%
		Does the search engine-based value analysis model help you achieve your study goals?	44	100%
		Is the use of the components of the search engine-based value analysis model easy to understand?	43	97,73%
		Do you like the search engine-based value analysis model?	44	100%
2.	Attraction	Is the search engine-based value analysis model an interesting learning model?	44	100%
		Does the search engine-based value analysis model make you feel happier in learning?	44	100%
		Do you like the appearance of the search engine-based value analysis model used?	42	95,45%
		Is the presentation of the search engine-based value analysis model clear and easy to understand?	44	100%
		Do the components of the search engine-based value analysis model enjoy searching for data for decision making?	43	97,7%
		Can the use of the search engine-based value analysis model reduce your boredom in learning?	37	84,09%
Total Score			1474	
Total Maximum Score			1520	
Average Percentage			97%	
Level of Practicality/Interest			Very Practical/Interesting	

Based on the table above, the data from the filling results obtained an average practicality value of both groups of 97%, so that the product is declared very practical and interesting. According to the results of interviews with students, the search engine-based value analysis model allows them to freely explore

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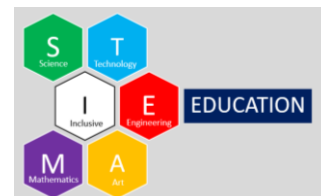
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facts and test the truth of the facts obtained through the search engine-based value analysis model. Learning steps : (a) Identifying and clarifying the value question; (b) Assembling purported facts (general and specific positive facts of search engines and general and specific negative facts of search engines); (c) Assessing the truth of purported facts (general and specific positive facts of search engines and general and specific negative facts of search engines); (d) Clarifying the relevance of facts; (e) Arriving at a tentative value decision; (f) Testing the value principle implied in the decision.

To assess the effectiveness of the model, the researcher conducted interviews with lecturers who teach global perspective courses and basic concepts of elementary school social studies in the elementary school teacher education study program. The results of interviews with lecturers obtained the following results: Students are able to (a) be more critical in choosing the suitability of the basic concerns chosen by students as considerations; (b) determine the relationship between basic concerns and topics; (c) identify selected value objects that are relevant to the objectives and scope of the course; (d) distinguish positive and negative facts; (e) classify positive facts based on general and specific levels; (f) classify negative facts based on general and specific levels; (g) synthesize the results of the study of positive and negative facts; (h) determine additional value considerations; (i) determine the weight of facts obtained from search engine data; (j) determine or place facts appropriately; (k) compile value criteria used for value objects; (l) test whether the decisions taken are maintained.

Value Object: Impact of Cyber Crime (example)							
Basic Concerns	Positive		Negative		Data Source		Subsidiary Value Judgments
	General	Specific	General	Specific	Positive	Negative	
Economy					1;2;3	4;5;6	
Law					7;8	9;10 ...	
Technology					11;12;13...	14;15;16...	
Health					14;15...	16;17....	
Education					18;19	20;21....	
Conclusion :							

1. [http:// ...](http://...)
2. [http:// ...](http://...)
3. [http:// ...](http://...)
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21. [http:// ...](http://...)

It is recommended to conduct further research using experimental methods to assess the success of this model in achieving its objectives more thoroughly through tests and not just lecturer assessments or student perceptions.

Discussion

The discussion covers product validation in terms of validity, practicality and effectiveness of the search engine-based value analysis model. The results of the analysis are described as follows.

In expert validation, the model obtained a result of 100%, which is included in the very valid category. This validation includes logical indicators, model presentation procedures, scientific methods and

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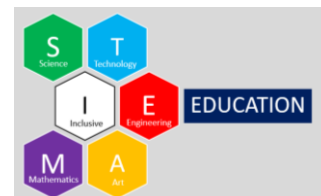
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displays. This validation is to ensure that the development of this model is in accordance with the desired components of the model that has been introduced by Coombs and Meux (1971). According to Hersh (1980), what distinguishes the value analysis model from other models is its emphasis on pedagogy. The value analysis model prepares step by step to help students relate to social issues. What was developed in this study was the addition of a search engine that makes it easier for students to make decisions because the supporting data focuses more on basic concerns. In terms of practicality and uniqueness, Hersh (1980) stated that value analysis is more direct than similar learning models by helping students collect and weight the facts involved in value considerations. If other models such as the consideration model, values clarification and cognitive developmental models are also related to context and consequences, the treatment of the value analysis model is more explicit and sustainable. Kniker (1977) highlights it from another angle. Kniker stated that the learning procedure of value analysis follows the scientific thinking process.

Coombs describes a sharp distinction between value criteria and value principles which is the uniqueness of this model. (Coombs and Meux, 1971). According to Coombs it is important to understand this distinction before being moved to consider choosing a learning strategy. Value criteria, according to Coombs "do not specify the manner in which a certain type of condition is to be rated in the main or other things being circumstances. They indicated only how the condition is to be rated in the main or other things being equal" (Metcalf, 1977). For example, the value criterion that lying is wrong is generally acceptable and valid. But lying may at times be right when lying will equal someone's save someone's life or diminish his suffering. The we can admit this standard regarding lying as a value criterion and still realize that, in exceptional circumstances, it may not apply.

Value criteria provide "valence" to facts. They determine whether the facts uphold positive or negative evaluation. In the case of euthanasia, the value criterion "killing is wrong" gives a negative valence that euthanasia involves killing. This fact supports the negative evaluation of euthanasia. Whether the values question is simple or complex hinges on the nature and extent of the relevant facts. If all the facts are uniformly positive or negative in valence, the decision is a fairly simple one to make. It becomes difficult when the relevant facts have conflicting valence, that is, when some facts suggest the value object is good and some facts indicate it is not. The evaluator must balance the facts and come to a decision (Fraenkel, 1977). In contrast to value criteria, value principles emerge as the product of a value decision-making process (Hersh, 1980). It reflects the results of value analysis rather than determining its process. What is brought to the context of values judgments, Coombs argued, are not value principles but value criteria. Each value criterion provides the basis for evaluating a particular feature of the vale object, giving the either positive or negative valence to that feature. The value principle applies to the value object as a whole (Metcalf, 1977). It is the principle that weighs the claims of the various rival criteria, namely we are aware of the principle that only a value decision has been made and the reasons for it given. The difference between criteria and value principles from this value analysis model is the same as the difference between a vale and a qualified general position from the rationale building model from James Shaver. According to Shaver, a value is a criterion for appraising the worth or propriety of an object, action, or trait. When we make complex decisions, according to Shaver, we must balance conflicting values. For example, industry or ecology for global perspective courses, national stability or freedom of speech for basic social studies concepts courses). The qualified position we achieve is a statement of the way in which our values relate to one another in certain situations. Both a "qualified position" and a "principle" spell out the value priorities in a given case. The value principal is explicitly formulated.

First, new case test. With new case test, the evaluator considers whether he or she can accept the Judgment that follow by attempting to apply them to other relevant cases. Teachers need to help students uncover the value principles embedded in their judgments, recognize analogous situations

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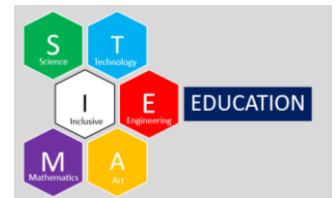
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and determine whether the principle hold equally well in these situation. Second, the value principle is explicitly formulated. Then the evaluators attempts to assemble facts which show that the value principle is an instance of some more general value principle that he or she accepts. Third, role exchange test. The evaluator imaginatively exchange roles with someone else affected by the application of the principle. Then the evaluator considers whether he or she can still accept the principle as it applies in this role. Fourth, the evaluator imagines what the consequences would be if everyone in similar circumstance were to engage in the action being evaluated. Then the evaluator considers whether to accept this consequences.

The results of the study indicate that this model is effective in helping students make critical and intelligent decisions. A value decision is rational only if the evaluator can accept the value principle implied in the decision. Four tests to determine the adequacy of a value principle are available. First, new cases test. The value Because this model allows to test the value principle contained in the decision. The results of observations in the field show that students are more involved and have asked more questions, and the results of the assessment of learning activities have increased significantly. These results are in line with research in India which shows that the value analysis model is effective in developing value processing skills in secondary school students (Reddy, Thankachan dan Anuradha, 2000).

Unlike Coombs' original Values Analysis Model, which emphasized data collection and data collection for decision-making, the model resulting from this research focuses more on four tests of value principles for decisions. Testing the value principle implied in the decision. Why? When this model was introduced, data collection was difficult because we were not yet in the digital age. In today's digital age, the problem is precisely the information overload caused by the overflowing flow of information. We need to assess which data is true and which is false. This is especially true with the emergence of various artificial intelligence phenomena that can give rise to slander, hoaxes, or other types of forgery. This is where the urgency of this research model lies. Compared to other learning models, such as ICT-based PBL and others, this model is more critical in assessing the validity of a decision, using four tests to address online misinformation. This research was conducted to answer the question, whether a Values Analysis Model Based on Search Engine ini valid, practical, interesting and effective for intelligent decision making. However, the limitations of this research are still limited to research and development. However, to see the effectiveness of the model developed, this research needs to be continued with experimental research.. Besides, although very interesting and tends to be ideal up to 100% according to expert opinion, it turns out that from field data there is feedback from students as one of the users of this model. The first difficulty of this search engine-based Values Analysis Model is "determining what areas need to be considered in making intelligent decisions. Through learning discussions between lecturers and students, this difficulty is overcome by selecting what is a "viral" topic, as material to see the urgency of the problem and the background of the analysis. The second difficulty, students have difficulty giving weight to the selected data to be taken. To overcome this problem, efforts are made to emphasize the essence of the global perspective course, namely the issue of humans and the earth. The urgent issue is what factors threaten the existence of humans and the earth. Other recent research of this kind concludes that decision making in the digital age requires not only a data-driven approach, but also good leadership skills, effective communication skills, and ethical considerations to achieve optimal and sustainable results, participatory, cost-benefit analysis (CBA). (Ramadhana, S.A. et.al 2024). There are two seemingly contradictory studies related to decision-making. First, in the increasingly competitive business environment of the digital era, accurate decision-making is key to corporate success. Traditional approaches that rely solely on intuition or experience are inadequate. Therefore, companies are turning to Data-Driven Decision Making (DDDM) as their primary strategy. Adopting DDDM is no longer an option, but rather a necessity for companies seeking

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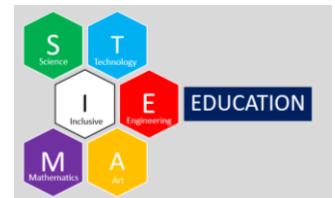
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to remain relevant and competitive in today's global marketplace. Through effective data utilization, companies can formulate more accurate, responsive, and highly competitive strategies. (Divan, M.J. 2017). Meanwhile, other studies suggest the opposite. While research shows that machines are far more reliable and outperform humans in every way, the results of the research indicate that leaders are forced to think beyond what they can obtain from machines during the business decision-making process. The future is not determined by data from machines; it requires ingenuity and, sometimes, absurd decisions. Machines can only predict when data sources are available, and the future requires intuition in future decision-making. This research emphasizes the importance of incorporating intuitive capabilities into the business decision-making process and the specific contexts in which intuition works best. This study employed qualitative methods, selecting five prominent and successful Indonesian businesspeople as primary sources of information from 15 companies interviewed. The findings suggest that both analytics and intuition are crucial in business decision-making. To be effective, we must understand when to use them separately and when to combine them. This research demonstrates that in today's big data world, data-driven analytics requires intuition in the business decision-making process. This study has several limitations. First, it was conducted in the context of business processes, which may yield different results in the service context. Second, there is no precise proportion to define a successful combination of intuition and analytics (Princes, E., Kosasih, W., 2021). The Values Analysis Model Based on Search Engines is a model that combines data analysis and intuition. Intuition is necessary, but it still needs to be tested with four tests of value principles for decisions

Conclusions

The Values Analysis Model Based on Search Engine learning model for intelligent decision making is practical, effective, and interactive, and is able to improve students' ability to make intelligent decisions so that they are not easily influenced by HOAX news and can make intelligent decisions. It is recommended to conduct further research using experimental methods to assess the success of this model in achieving its objectives more thoroughly through tests and not just lecturer assessments or student perceptions.

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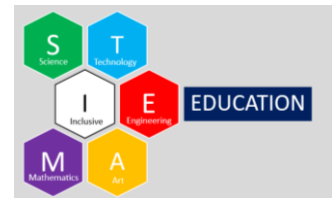
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