Decision Support System For Determining Character Education Values

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The 2013 curriculum is an effort made by the government in improving the curriculum according to the needs of the current generation. This 2013 curriculum is a curriculum that does not only focus on academic competence, but also includes aspects of student character and skills. However, in its implementation, the 2013 curriculum makes teachers feel confused, especially in the assessment of attitudes and character. The assessment carried out with Rubik and observation sheets has indicators that are not appropriate so that character assessment becomes inappropriate. This research will design a system to conduct student character assessment at SDN Butuh 1 Magelang. In this research, a system will be designed to help teachers conduct student character assessment with SPK character assessment in Indonesia. The method applied in this research is the Simple Additive Weighting (SAW) method. The result of this research is a system to support the decision of students' character education value.

KeyWords: curriculum, character, SPK, Simple Additive Weighting

1 Introduction

The curriculum change to the 2013 curriculum is the government's effort to improve the curriculum. The changes were made after studies, research and curriculum development in accordance with the needs of the younger generation. The 2013 curriculum learning process must touch three domains, namely attitude, knowledge and skills[1]. The 2013 curriculum brings together the domains of attitude, skills and knowledge in a balanced manner. This balancing of hard and soft skills is done by structuring Graduate Competency Standards, Content Standards, Process Standards, and Assessment Standards

Assessment is a series of learning processes that assess students' knowledge, skills and attitudes/character as learning outcomes. After the assessment is carried out, the next process is the determination of policies in accordance with learning procedures. The 2013 Curriculum Education Assessment Standards refer to Permendikbud No. 66 of 2013 concerning educational assessment standards, namely authentic assessment. Authentic assessment is a whole assessment to assess input, process and learning outcomes. The 2013 curriculum assessment emphasises cognitive, affective, psychomotor aspects in a balanced manner according to the characteristics of the learners and the level of the assessment system. In the 2013 curriculum assessment at the primary school level, mastery of knowledge and skills has a small proportion, while the cultivation of attitudes has a large proportion.

According to Peaget (in [2]), elementary school students are in autonomous morality This can be seen from the judgement of children who consider that something is good depending on its purpose. A child can consider lying to be right when certain situations. So lying is not always something wrong. So that at this age character education is very important to internalise good values into children[3]. So that at this stage of development elementary school teachers can provide education to form good student character.

This is in accordance with research conducted by Pala[4], that character education must be applied starting at the basic education level so as to form a strong foundation of student character for the next level. The government also ratified Presidential Regulation No. 87/2017, on Strengthening Character Education (PPK) to streamline the role of schools in shaping character. PPK is a school movement that aims to build student character through the integration of heart (ethics), taste (aesthetics), mind (literacy), and exercise (kinesthetics) with cooperation between schools, families, and communities.

The PPK programme is derived from Ki Hajar Dewantara's philosophy of ethics, literacy, aesthetics and kinesthetics. Cultivating the heart is spirituality; cultivating the mind is academic excellence; cultivating the mind is moral integrity, a sense of artistry, and culture; and cultivating the mind is being healthy and able to actively participate as a citizen.

KDP must be implemented in all lines and sectors of government, as well as among Indonesian communities throughout the country[5]. KDP is implemented by implementing Pancasila values in character education. The Pancasila values include religious values, honesty, tolerance, discipline, hard work, creativity, independence, democracy, curiosity, national spirit, love for the country, respect for achievement, communicative, peace-loving, fond of reading, environmental care, social care, and responsibility. The eighteen values were then crystallised into five main character values, namely: religion, nationalism, independence, integrity, and mutual cooperation[6].

However, almost all teachers in Indonesia feel confused in conducting the assessment demanded by the 2013 curriculum, especially in attitude or character assessment. Even so, to fulfil the demands of the 2013 curriculum, teachers still conduct assessments by preparing assessment rubrics and simple observation sheets. Many of the rubrics and simple observation sheets have indicators that are not in accordance with the character or attitude indicators. So that the character or attitude assessment carried out with these rubrics and instruments becomes inappropriate. The assessment is also very subjective because many factors influence the assess-

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ment such as the acquisition of cognitive aspect scores. The high and low scores on cognitive aspects affect the teacher's assessment of student character. Whereas the assessment of affective aspects should be done objectively and have nothing to do with cognitive assessment. The closeness factor between students and teachers is also one of the factors of teacher subjectivity in conducting character assessments. The teacher's kinship factor with students' parents and many other factors also influence the teacher's character assessment. In fact, character assessment must be carried out appropriately so that teachers can provide feedback on the results of the assessment.

These problems must be solved immediately so that the implementation of learning can run according to the demands of the 2013 curriculum. So that the full implementation of the 2013 curriculum can be useful in the field as expected by the government. Character assessment is important in learning not only to assess the success of instilling student character but also to see the development of student character. By knowing the results of the character assessment, the learning process can be continued with appropriate efforts to develop or strengthen student character. The importance of character assessment requires the right assessment instrument to determine the success of instilling character values.

A Decision Support System (DSS) is an interactive computer-based system that helps users to make judgements and selections. The system not only provides data storage and retrieval but also improves access to traditional information with support for decision-making models and model-based reasoning[7]. This system is very suitable to help teachers assess student character, but there is no SPK for character assessment in Indonesia. For this reason, it is necessary to make a SPK to conduct character assessments so that elementary school teachers no longer have difficulty conducting character assessments and can conduct character development feedback right on target.

2 Theoretical Foundation

2.1 Decision Support System. Systems are interactive information systems that provide information, modelling, and data manipulation[8]. This system was introduced by Michael S. Scott Morton in the early 1970s, and later became known as Management Decision Systems. A decision support system is a system that provides data management functions according to a certain model, so that system users can choose the best decision-making shortcut[9].

2.2 Simple Additive Weighting Method. The SAW method is one of the simplest and most widely used methods in solving Multi Attribute Decision Making (MADM) problems[10]. This SAW method requires the decision maker to determine the weight for each attribute[11].

2.3 Education. Character. Character comes from the Greek which means 'to mark'[12]. Education is a process that changes human behaviour or personality[13]. Education serves to develop abilities, form personalities, and create a superior national civilisation and educate the nation's life[14]. Education is also a long-term and very valuable savings or investment in the development of a country[15].

2.4 Character. Character comes from the Greek which means 'to mark'[16]. According to Thomas Lickona (1991) character is an inner disposition to respond to situations in a morally good way. Character has three interrelated parts namely moral knowledge, moral feelings, and moral behaviour[17].

2.5 Character Education. Character education is an effort to shape the character of honesty, care, and love for the country[18]. Character education is an effort to strengthen and improve the moral or ethical values of the nation, especially students who will

become the next generation of the nation[19]. Character education management in schools is one way to anticipate and minimise the nation's moral decline in the world of education, especially in Indonesia. Character education helps students to understand, pay attention to, and practice these values in their own lives[20].

The implementation of character education must be innovative and creative, for example by providing role models, providing habitual education, giving advice, reprimanding, and providing attention and supervision[21]. This character education includes all components including teachers and the environment that set an example and motivate students to apply it in their daily lives until adulthood[22]. Character education in schools will run smoothly, if in its implementation first pay attention to several principles of character education[23].

2.6 Character Assessment. Character is seen from daily attitudes so that to assess student character is the same as observing student behaviour and attitudes during learning. This character assessment is based on the classroom teacher's observation of the behaviour or attitude (including religious and social attitudes) of the character that appears in students[24].

3 Research Methodology

3.1 Literature Review. Research by Ningrum, T, W et al][25] entitled "Analysis and Design of Decision Support System for Granting Employee Annual Bonus with SAW Method at PT. XYZ". Research by Yudistira Angga et al[26] entitled "Decision Support System for Performance Assessment of TNI-Army Soldiers Using the Weighted Product Method". Ferdianto A.F's research[27] entitled "Decision Support System for Selection of Outstanding Students Based on Competence with the Simple Additive Weighting Method". McGrath's research[28] entitled "Some Key Issues in the Evaluation of Character Education" in determining the character of education (CE) that is relevant for programme development and evaluation. Research from Lickona[17] entitled "Assessing Character Education: Paradigms, Problems, and Potentials" on paradigms, problems, and potentials in assessing character education. Research from Jeynes, entitled "A Meta-Analysis on the Relationship Between Character Education and Student Achievement and Behavioural Outcomes" discusses the relationship between character education and student learning and behavioural outcomes[29]. Research[30] entitled "Teachers' Views on Character/Values Education in Schools" discusses teachers' views on character/values education in schools and how character education can be taught through formal education.

3.2 Data Copllection. Data collection is done by taking data on students of SDN Butuh 1 Magelang grade 1, grade 2, and grade 3.

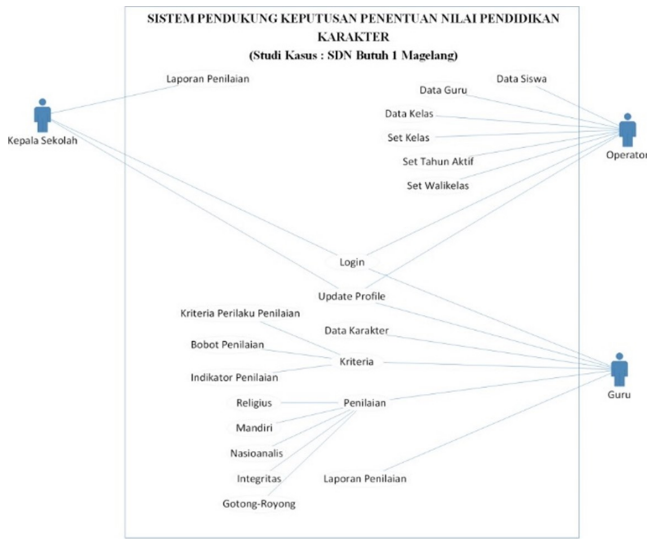**3.3 Use-Case Diagram.** The design of the programme diagram can be seen in Figure 1.

Fig. 1 Use-Case Diagram

3.4 Database Design. The database structure is used by the system to store all data and data flows that are interrelated with each other. The Database Structure form can be seen in Figure 2.
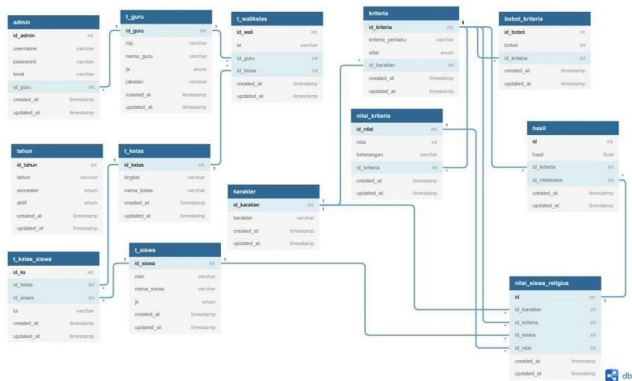

Fig. 2 Database Design

4 Implementation

The decision support system for determining character education values is built using the CodeIgniter framework with the PHP programming language. The following is a display of the decision support system for determining the value of character education in the case study of SDN 1 Butuh Magelang.
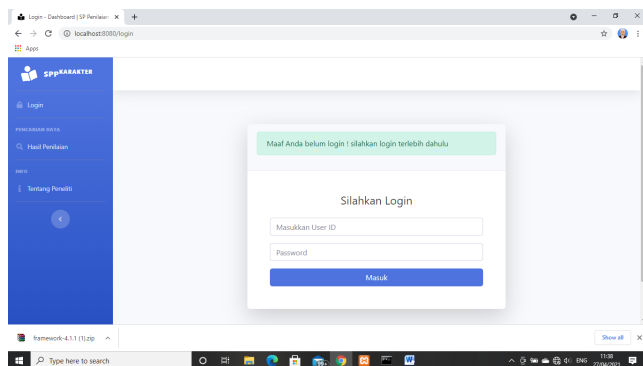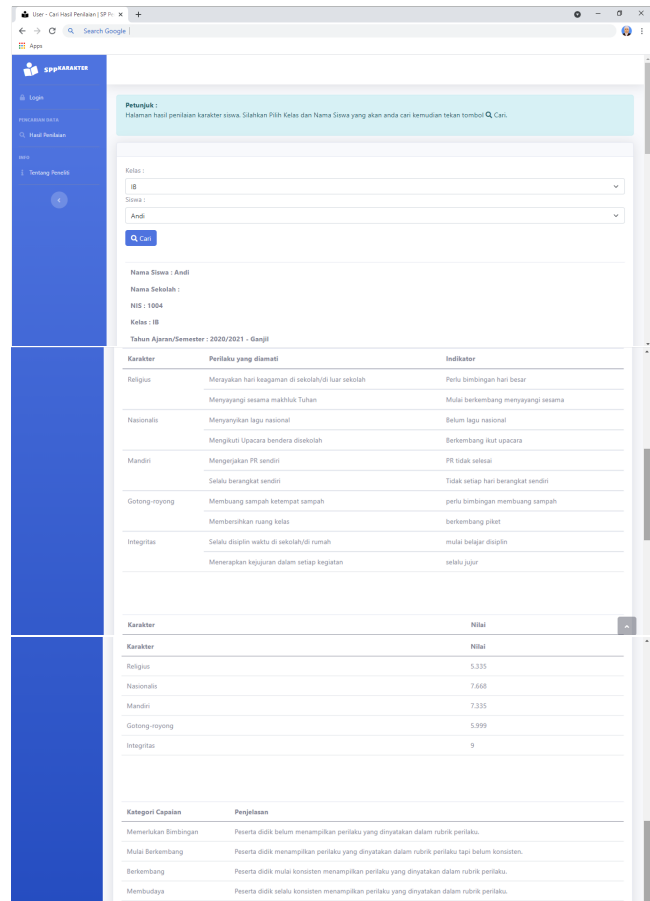

Fig. 3 System Initial View

Fig. 4 Display of Assessment Results

5 Conclusions

(1) The decision support system with the Simple Additive Weighting (SAW) method was successfully created using the CodeIgniter framework. This research uses 5 criteria, namely Religion, Nationalism, Integrity, Independence, and Gotong Royong, each of which has indicators and value weights.

(2) The results of this research Simple Additive Weighting (SAW) method can be applied in character education assessment by giving weight to each criterion according to the assessment rules in the 2013 curriculum. This system can facilitate teachers in determining the character education value of their students.

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