Adiwiyata insight: information technology based environmental education at senior high school in Boyolali, Central Java

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Abstract. This study aims to analyze the vision and mission of senior high schools in Boyolali. The analysis deployed Van Dijk’s model of critical discourse analysis. The analysis deals with the analysis of text structure, social cognition, and social context. There were three senior high schools in Boyolali District, but only two schools applied Adiwiyata policy, namely SMA 1 Boyolali and SMA 3 Boyolali. Although SMA 2 Boyolali does not apply Adiwiyata policy, its mission also embodies a clean, comfortable, safe and healthy environment. The implementation of Adiwiyata policy in SMA 1 Boyolali, organizing some programs that involve activities of all the school community, including building absorption wells, biopori, waste management systems, greenhouse, planting trees, wall magazine about the environment and waste separation. Besides, the implementation of Adiwiyata Policy with the environmental concept is included in SMA 3 Boyolali curriculum, particularly local content subjects, such as Environmental Education (PLH) given to 10th grade. However, this subject is integrated into all subjects at 11th and 12th grades.

1. Introduction

Each school has its own policies in conducting education programs. Vision and mission are used as guidelines in the implementation of educational programs that have high quantity and quality. The goals to achieve are definitely related to the national education goals set by the government. In addition, the existence of national goals becomes a basis to guide the implementation of education in Indonesia [1]. The government gives authority and freedom to the school to regulate its policies and can sportively compete with other schools in national or international level. This is in line with Calder [2] who stated that the measures are more meaningful through the further realization of the vision and mission and how the institution is supporting values through various initiatives and behaviors.

Many schools recently establish policies in the vision and mission related to the environment. The government also gave awards to several schools as Adiwiyata schools. These awards were given to schools prioritizing the environment in schools. Conservation-based learning in the current era of globalization is very important [3]. Students at the next generation need to be early guided so that they have a high spirit of concern for their surrounding environment. Environmental education is conducted...
as an effort to improve a community’s understanding and concern on finding out a solution and preventing environmental problems [4].

Previous study on environmental attitude has pointed out that there is a difference in environmental attitudes of teacher candidates in terms of department of science, grade level, region lived during their childhood and get the status of environmental education course variables and there is no difference in term of also, some suggestions were given [5]. In this regard, many environmental problems occur everywhere with various factors and causes that appear and affect community environment negatively. What is needed to be fixed is the community’s concern on their environment. Students have a tendency to come to school for only studying while parents only prioritize cognitive aspect as the main point in which students need to achieve [6]. Senior high schools in Boyolali district apply Adiwiyata policy to create clean, comfortable, safe, healthy and environmental-oriented schools.

2. Method

The method used in this study was a qualitative method. This study analyzes the vision and mission of senior high schools in Boyolali District and its implementation of the Adiwiyata policy to realize environmental education. Qualitative method is considered as research methods based on the philosophy of post-positivism and used to examine natural objects, and the results of qualitative research emphasize the meaning of generalization [7]. This study explains the school's efforts of realizing environmental education, the factors supporting the implementation of the program, the obstacles faced, and the success having been achieved from implementing Adiwiyata policy at senior high schools in Boyolali District.

3. Discussion

The vision and mission in schools are not just written textual discourses. The implementation of policies in real life is also a concern so that the program can be implemented properly. The assessment of Sekolah Adiwiyata Mandiri (Independent Adiwiyata School) underlines behaviors and attitudes of all school member toward environment and earth save [8]. Senior high schools in Boyolali District are schools that have implemented the Adiwiyata policy. The assessment carried out as the implementation of the program is the attitudes and behaviors of all school member in creating an environment to save the world from various factors that damage the environment.

Discourse analysis in this study aims to find out a certain meaning and purpose. In addition, Gilberto [9] suggests that critical discourse analysis contains two dimensions. One dimension consists of one’s awareness about the use of discourse as a means to perpetuate inequities; the other dimension refers to the potential transformative function of language; it includes the set of skills to self-monitor one’s utterances as well as to aid others to understand how their subordinating communication patterns can be disrupted [10]. Discourse analysis examines the relationship of language and context of how discourse is used, so all the elements involved in using the language need to be considered to understand the discourse [11]. In other words, it is inseparable from the context of how language is used. However, the study related to discourse analysis is necessary to pay attention to where language is used and who is the target of the language use.

On data analysis, the study employed critical discourse analysis as proposed by Van Dijk. The analysis deals with analyzing the structure of the text, social cognition, and social context [10]. However, discourse is actually an abstract theoretical building so discourse cannot yet be seen as a manifestation of discourse is text. Consequently, Van Dijk's analysis has dual purposes of analyzing written spoken discourse that is seen from textual objects and socio-cultural practices, between actions and culture.

3.1 Vision and Mission of Senior High School di Boyolali

The vision of SMA 1 Boyolali aims to realize a high-quality school in terms of achievement and service, global concept, mastery of science and technology based on Faith, God-fearing, nationality, cultural, and environmental values. The vision of SMA 1 Boyolali is globally to achieve the output of quality students in achievement with global insight. Achievement scores drive much of the effort in today's accountability system, however, there is much more that occurs in every school, every [12]. From the religious perspective, SMA 1 Boyolali also claims that mastery of science and technology is based on values of Faith and God-fearing. School programs expect students who are qualified in terms of cognitive and have a faith that becomes the basis in religious life. The national values also become the most
important side in this vision, because the love of nation and state is the duty of the next generations that need to be implanted by the students and the entire school community.

The government has repeatedly provided a discourse on the importance of maintaining and preserving regional culture to improve national culture [13]. Culture has become a part of SMA 1 Boyolali as a concerning image of Indonesian culture. What becomes no less important in the vision of each school, especially SMA 1 Boyolali, a school with the best predicate in Boyolali District has received the title of Adiwiyata School. SMA 1 Boyolali has the advantage of maintaining the environment, which is absolutely supported by all schools.

The mission of SMA 1 Boyolali is to carry out the main vision as a realization to implement education, learning, and guidance in a creative, innovative, actual way, through competent and professional teachers. Achieving maximum learning outcomes requires a strong model or motivator in the classroom [14]. Professional teachers as the drivers of teaching and learning activities considered in Boyolali are qualified and competent teachers.

For the development in the education field, SMA 1 Boyolali does not only prioritize students' cognitive abilities but also their psycho-motoric is also a special concern. The purpose of this mission is to develop and to build academic and non-academic competencies in accordance with the development of education in Indonesia. Besides, in the affective aspect, the school also creates a religious value system of life in developing cultural knowledge [15].

Building the spirit of nationalism and nationality, as well as the integrity of the Republic of Indonesia become SMA 1 Boyolali’s commitment to producing students with the spirit of nationalism. Learning with conservation value has been planned by the government to create a good environment, to avoid pollution and damage to community industrial activities. The most important key to building an outstanding school is to develop and manage supporting school facilities, so education can be optimally organized. Today's modern technology also begins to exist in education, and modern facilities become effective and efficient supporting education services to provide community’s satisfaction [16].

In addition, the vision of SMA 2 Boyolali aims to be a school with achievement, discipline, competitiveness, and behavior in high faith and God-fearing. There is a considerable difference with the expected results of SMA 1 Boyolali. SMA 1 Boyolali puts forward the highest achievement in learning. Meanwhile, SMA 2 Boyolali put forward students’ discipline in carrying out all activities followed in school. Each school certainly expects the emergence of competitiveness among schools and challenge them to be able to compete with schools at the district, provincial and national levels. Having a high attitude, faith and God-fearing always becomes a part of every school's vision to equip students with a strong faith in themselves.

SMA 2 Boyolali has a mission of preparing students to have a future view to continue their education to the higher level. A school needs to encourage students in order to help them recognize their own potential. As a result, students can find out their abilities and develop their abilities in school and future education level. This globalization era expects students who are excellent in technology. A major reason for this is that technology development can bring students towards a more advanced and foremost world to see the horizon [17].

SMA 2 Boyolali has not received the title as Adiwiyata School, but its mission SMA 2 Boyolali aims to create a clean, comfortable, safe and healthy school environment. A comfortable and clean environment can be created with the cohesiveness of school residents who always prioritize environmental care. Hence, the school becomes a place to gain a comfortable knowledge for students and the surrounding community.

Moreover, the vision of SMA 3 Boyolali aims to make SMA 3 Boyolali outstanding, creative, innovative, competitive, religious, and caring for the environment. SMA 3 Boyolali was ranked as the second-best high school in Boyolali District, under SMA 1 Boyolali rank. Since SMA 3 Boyolali prioritizes education in cognitive aspect competitively, it still prioritizes religious attitudes. Besides, environmental awareness is also part of the vision that is considered as a realization of loving the environment for creating a comfortable learning environment.

The mission of SMA 3 Boyolali encourages students to recognize their potential through various activities in schools, both academic and extracurricular activities. SMA 3 Boyolali also promotes a learning culture to always get effective guidance and attention in accordance with the ability to compete with others competitively. In addition, SMA 3 Boyolali follows the development of technology in education to keep up-to-date. Moreover, SMA 3 Boyolali points out the importance of fostering school
members’ understanding of religion lesson in order to create a safe national culture and to have a foundation of behavior.

3.2 Implementation of Senior High School Adiwiyata

SMA 1 Boyolali is known as an outstanding school with a vision and mission that develops character education. The vision of SMA 1 Boyolali is to realize quality schools in achievement and service, global insight, mastery of science and technology based on values of faith and God-fearing, nationality, culture, and the environment. The missions are 1) to conduct education, learning, and development in a creative, innovative, and actual way, through competent and professional teachers, 2) to build and develop the students’ competencies academically and non-academically in regards to the demands and development of education, 3) to build and develop competition spirit competitively from school to the international level, 4) to develop a culture of religious knowledge and values, 5) to build the spirit of nationalism and nationality in the unity of the Republic of Indonesia, 6) to build and develop commitments in love with nature, culture and the environment through: a) preservation of culture and environment, b) prevention of cultural and environmental contamination, c) overcoming cultural and environmental damage, d) empowerment of culture and environment, 7) developing and managing school infrastructure that supports the success of education and learning optimally and integrated, 8) developing effective and efficient education services based on current development and community satisfaction.

SMA 1 Boyolali has the achievement goals contained in the vision and mission including 1) providing services and achievements by guaranteeing quality, 2) realizing quality learning in accordance with the needs in the global era, 3) developing character education by fostering nationalism, 4) realizing learning concerned with culture and the environment, 5) management system. Based on the vision and mission of SMA 1 Boyolali stated, it indicates that this school commits to producing graduates who are capable of thinking globally and master science and technology based on character education, culture, and environment. Besides, this school aims to create students who are intellectual concern about culture and the environment. Moreover, these students are expected to have concerns on not only the natural environment but also the social environment that will build students’ mutual help attitude [18].

SMA 1 Boyolali, as Adiwiyata School, has a program in terms of activities involving all school members, namely building infiltration wells, biopori, waste management systems, greenhouse, planting trees, wall magazine about the environment and waste separation. These activities support a beautiful, comfortable and clean environmental process [19]. Various activities that embody good environments make SMA 1 Boyolali a school with excellent achievement. SMA 1 Boyolali becomes an example of building students’ character with the employment of the environment.

The implementation of the vision and mission of SMA 3 Boyolali is by developing a caring and cultured school. SMA 3 Boyolali has the following vision: Building SMA Negeri 3 Boyolali with outstanding, caring for environment, environment-based, creative, innovative and religious characteristics. As a school that prioritizes characteristic of caring for environment and environment-based, the vision of SMA 3 Boyolali, are 1) to realize good character of, quality, cultured, and confidence students, 2) to realizing complete, quality and appropriate curriculum documents for students, 3) to realize active, creative, effective and enjoyable learning (PAKEM) by using the Scientific approach, 4) to realize education and education personnel with academic qualifications of Bachelor degree (S1) and professional competence, 5) to realize adequate educational facilities and infrastructure in terms of quality and quantity to support the achievement of moral, qualified and trusted graduates, 6) to realize School-Based Management, 7) to realize an adequate finance and orderly, transparent and accountable financial management by empowering all relevant participants, 8) to realize comprehensive, authentic, objective, continuum, and IT-based assessment system, 9) to realize a beautiful, clean, disciplined and environment-based school. The vision and mission of SMA 3 Boyolali aim to create graduates who are ready and able to compete in a global era with still caring for the environment and having environment-based character. These goals are reflected in the vision and mission, namely: 1) creating graduates with having character education, 2) providing quality services, 3) managing accountable and transparent management, 4) implementing objective learning 5) Realizing a beautiful, clean, discipline and caring for environment school.

SMA 3 Boyolali is one of the schools leading to independence Adiwiyata. As achieving the independent Adiwiyata school program, SMA 3 Boyolali has passed the National Adiwiyata selection. In order to achieve these program objectives, SMA 3 Boyolali must implement 4 (four) components of
the program. They are 1) Environmental Insight Policy, 2) Implementation of Environmental Based Curriculum, 3) Participatory Based Environmental Activities, and 4) Management of Environment-Friendly Supporting Facilities. These components are interrelated and integrated.

The implementation of the first component to get to Independent Adiwiyata school is by promoting students’ growth and development on recognizing their own potential, the spirit of excellence, creativity, innovation, caring for the environment, realizing an ideal environment (beautiful, clean, healthy and cool) and appreciation of religious lesson. Moreover, who is responsible for this implementation is the principal of the school [20]. Besides teacher leadership becomes one of the elements supported and responsible for the implementation. Environment-based policies are included in the school curriculum, i.e. Local Content subject of Environmental Education (PLH) is given in the 10th grade. However, this subject is integrated into all subjects at the 11th and 12th grade. The implementation of the second component deals with implementing an Environmental Based Curriculum that is clearly stated in learning devices (lesson plan, Syllabus, minimum achievement criteria, Individual and Structured Tasks, Learning Innovation Results communicated). The third component of Participatory Based Environmental Activities in SMA 3 Boyolali is implemented through some activities, such as community service for the 10th grade, gerak jalan (exercising with offering door prizes) for the 11th grade, religious lesson held on Saturday in the second and third week of each month for the 12th grade. The implementation of the last component of Management of Environment-Friendly Supporting Facilities at SMA 3 Boyolali includes the separation of organic and inorganic waste and the utilization of wastewater treatment of IPAL (Installation of Wastewater Management). Accordingly, this implemented program is to realize the independent Adiwiyata high school national level.

3.3 Support for Implementation of Adiwiyata Program in School
Environment preservation in the school needs the support of all involved participants, namely teachers, students, and parents. This support makes the school comfortable, clean and safe will create a fun learning process. Besides, the existence of environmental preservation programs builds students to be wiser in addressing problems in the surrounding environment. The Adiwiyata program that is applied to build students who care about not only natural environment but also the social environment. Regarding humans as social beings who need other creatures, the Adiwiyata program needs to be carried out by involving all components of both the school community and the learning process.

Creating a school that cares about the environment needs socialization on the activities supporting environment preservation. Socialization is important because it aims to help the school community in conducting activities on environment preservation. Implementation of environmental activities will not happen as the plan without socialization.

Each school has an extracurricular activity of wall magazine (mading). Mading can be used as a socialization tool about the environment. Mading is used as a means of information for school community regarding all component about environmental conservation activities. This activity becomes a place for students to be more creative and innovate in creating and producing something interesting to read. The use of mading as an intellectual competition event requires creative and innovative students as part of environmental empowerment that is integrated with academics. Mading fosters brave character education in expressing ideas and producing works. Mading displayed is the best work of all students, so the competition exists sportively.

4. Conclusion
Discourse analysis is an analysis of a text or spoken discourse that is related to lexical elements of language with regard to context. The implementation of Adiwiyata policies in schools is a means of the government to create a safe, comfortable and clean school environment. Two of the three senior high schools in Boyolali have organized Adiwiyata policies by implementing an environment-based curriculum, respecting the environment, creating the latest innovations, developing creative self-potential to maintain the well-preserved environment. Van Dijk’s discourse analysis is a discourse analysis that looks at the text by relating it to the context and social cognition. The vision and mission of senior high schools in Boyolali become a policy made by the school by taking into account the needs of students, schools, and the community in a comfortable environment situation.
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