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Student Admission Policy Based on Zonation System may a Constraint to Technology-Based Geography Learning Process in Semarang City

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Abstract

Geography teaches students about environment, spatial, and territorial, which focuses on atmosphere, lithosphere hydrosphere, and biosphere. To achieve minimal classical completeness as learning outcomes, each teacher must develop innovative media and learning models. This is even more challenging because of the zoning system for student admission that requires school to accept 50% students based on home distance from school, then 30% for outstanding student, 15% for affirmation, and 5% for transfer students. This causes student input with diverse characters that may impact on learning process. This research studies aimed to inventorying various challenges from teacher's perspective of student input to geography learning process, for improving learning policies. This research was involved 35 respondents of geography teachers from all high schools in Semarang City. Respondents voluntarily filling teaching competency questionnaire, continued with in-depth interviews about problems of teaching process. The results showed that the zoning system made student's cognition gap wider. It also made teacher lowering teaching standards, even they had very high performant on pedagogical and learning technology. However, the teacher provides, an innovative technology-based learning application model being ineffective because some application was uncommon for student, especially students from coastal area. In the end, the geography learning process was more dominant using conventional learning and applies technology only as an icebreaking and formative evaluation activity. School improvement assistance is needed, to support teachers in developing potential-based learning technology that supports schools.

Keywords: *geography learning process, technology-based learning, zonation system*

1. Introduction

The concept of Indonesian national education is included in RI Law No. 20 of 2003 and constitutionally stated in the preamble to the 1945 Constitution, with the main sentence "intellectualizing the life of the nation". This sentence means that education has one goal and ideals of the Indonesian people to educate the nation's life, better. The achievement of these goals is still faced problems and challenges from internal or external factors. Internally, the quality of teachers is seen as being able to influence both student performance and achievement of national education goals. The output produced by the teacher will be good if the presentation of the teaching and learning process in the

classroom is supported by facilities and infrastructure resulting from the development of knowledge and technology.

The use of technology in education is a manifestation of 21st century learning. In line with the statement Qian dan Clark (2016) [1] that the 21st century refers to various skills such as learning and innovation skills, information skills, media and technology. These skills are expected to be able to be applied to all subjects in every level of education, especially in learning geography that has benefits in the modern world, especially facing the era of the ASEAN Economic Community (AEC) (Nadiroh *et al*., 2019) [2]. The importance of geography learning is evidenced by the use of geographic information systems to map hazard areas and estimate losses due to the tsunami in Drini Beach, Gunungkidul Coastal Region, Yogyakarta (Marfai *et al*., 2019) [3], or spatial analysis of the area of malaria distribution in regencies in Papua (Hanandita & Tampubolon, 2016) [4]. This poses a challenge for geography teachers in creating learning innovations to improve the quality of education based on technological development.

Efforts to improve the quality of education are increasingly challenging with the zoning system policy. The zoning system is a system of accepting new students by determining the zone radius based on the Family Card so that the prospective students who are accepted are the people who are in the closest zone radius according to a predetermined percentage (Hoerudin, 2019b) [5]. The policy is able to eliminate the concept of favorite and non-favorite schools in the community. On the other hand, this policy produces input of students with a variety of characters and abilities that are feared to be able to influence learning achievement. These gaps emerge to encourage researchers to collect data on various challenges, threats and potentials from teacher perspectives regarding student input in the learning process of geography, in order to improve educational policy especially in the learning system.

2. Method

This study was used onlinr based questionnaire in Google Form platform. and interviews to measure the performance of geography teachers in the learning activities of all secondary schools in the city of Semarang. The sampling technique used is proportional sampling technique. A total of 35 high school Geography teachers were included as research respondents. The respondents involved were teachers who were members of the Teacher Working Group. Data was collected through three stages, 1) using a questionnaire to find out the teacher's responses related to learning geography and zoning systems; 2) data collection through Focus Group Discussion to map the problem based on a questionnaire and identify new problems that were not previously recorded on the questionnaire; 3) is an in-depth interview with teacher representatives based on school zoning. The zoning of schools in this study is based on the topography and characteristics of students, which includes schools from mountainous, urban and coastal areas. The data that has been obtained is then tabulated and extrapolated and discussed descriptively qualitatively.

3. Result and Discussion

Most of the respondent in this study was young teacher from public school and all of them were graduated from geography education (Table 1).

Table 1.Compotition of respondent characteristic

Responden Characteristic		f	%
Gender	Male	16	45.71
	Female	19	54.29

Age	<35	13	37.14
	36-45	10	28.57
	46-55	9	25.71
	>56	3	8.57
School Status	Public	19	54.29
	Private	16	45.71
Education	Bachelor	24	68.57
	Master	11	31.43
	Doctor	0	0.00

The zoning system was implemented by the Ministry of Education and Culture of the Republic of Indonesia with the aim of leveling access to and quality of education. The implementation of the zoning system in the city of Semarang in accordance with the Decree of the Mayor of Semarang No. 420/404 of 2019, states that the division of territory is based on the kelurahan by considering the capacity ratio and the number of students. The results of the analysis of geography teacher responses indicate the possibility of the influence of location characters on teacher perceptions in addressing the zone systemsi (Table 2):

Table 2. Teacher's perception of zonation system in Semarang City

Observed Aspect	Sub-urban area	Central city and Business area	Coastal area
Streanghts	1) Polemic of favorite and non-favorite schools can be minimized (2) An increase in average overall student scores in one academic year compared to before the zoning system (coming from students with an achievement track) (3) The student quota can be fulfilled without having to wait for an abundance from other schools that are considered more favorite	(1) Teachers are considered capable of creating strategies new learning that refers to the complexity and uniqueness of students from the zoning path (2) Availability of assistance to complete the facility (3) The less congestion caused by the school environment	(1) Poor families can send their children to their favorite schools for free (2) Quota for students can be fulfilled without having to wait for an abundance from other schools that are considered more favorite
Weaknesses	(1) Equitable distribution of amounts state schools and adequate educational facilities have not been balanced (especially learning media) (2) Not optimal	(1) Many students get grades below the Minimum Mastery Criteria (KKM) (2) There are more violations of the rules (3) Students are more difficult to be guided and conditioned (4) The fighting	(1) Equitable distribution of amounts state schools and adequate educational facilities are not yet balanced (2) Not optimal socialization of zoning system for

Observed Aspect	Sub-urban area	Central city and Business area	Coastal area
	socialization of zoning system for New Student Admissions (PPDB) (3) Quality disparity between secondary schools in Semarang City is still high (4) The percentage of children with low levels of ability is higher so the opportunity to develop is very small (5) Heterogeneous student input makes it difficult for teachers to make learning innovations	abilities of students are low (5) Not comparable school chair quota intended by the number of prospective students	New Student Admissions (PPDB) (3) Accessibility especially transportation is still difficult even though it is the closest distance from the place of residence (4) Heterogeneous student input makes it difficult for teachers to make learning innovations
System improvements that need to do	Flattens the availability of public schools so that they are proportional to the number of graduates in an area to cope with areas that are not touched by school zoning (blank spots)	It is necessary to socialize the impacts that will result from the zoning system, so that schools are able to prepare solutions and manage these impacts with the help of the government	Equitable distribution of educational facilities and infrastructure as well as improving the quality of teaching staff are given more attention and are taken into account

The impact of the implementation of the zoning system felt by several parties such as students, teachers, schools and also the community depends on the state of the environment around the school. Urban areas have different characteristics, characteristics, or conditions to those of the periphery or coast, so the impact will also be different (Trifuljesko, 2019) [6]. In general, the zoning system policy has been able to minimize the gap between favorite and non-favorite schools (Gamoran & An, 2016) [7], provide challenges to improve teacher quality (Poder *et al.*, 2017), serta mampu mencukupi input siswa berdasarkaan kuota yang dibutuhkan (Mahyani *et al.*, 2019) [8]. Giving a 30% quota for achievement paths makes students who obtain geographical expertise from previous schools, can utilize their expertise in learning at the next level of school based on the zoning system. This makes some teachers in rural areas feel an increase in the average student grade. The positive impact was also felt by the people of Serengan Sub-District of Surakarta who stated that PPDB with the zoning system was considered quite successful. That is because the distribution of socialization has spread in various villages, parents understand the implementation (Habiby & Saroh, 2019) [9].

Other conditions are also felt by teachers as a negative impact of the implementation of the zoning system. Problems arising in learning become a major point in the implementation of the zoning system, both perceived by schools in the suburbs, cities or the coast (Widayati, 2020) [10]. Heterogeneous student input in terms of attitudes or abilities, makes it difficult for teachers to present learning that can be achieved by all the existing characteristics (Hoerudin, 2019a) [11]. The implementation of the zoning system can affect the quality of a school because it cannot choose students who have a

high level of ability (Sularto *et al*., 2018) [12]. Students with high achievement scores will have lower motivation to develop quality schools in their zones and tend to feel inferior for failing to enroll in the school they want (Hapsari & Budiraharjo, 2019) [13] Not only that, a paradigm emerged that students felt they did not need to study seriously because exam scores were not used in entering new school levels (Ismabela, 2019) [14]. If all students who enter have such thoughts it will clearly reduce the quality of the school. Circumstances caused by the negative impact of the zoning system can be overcome by creating innovation, because if there is no innovation there will be no change in schools.

The teacher plays an important role in creating innovation in the learning process (Walekar & Shinde, 2018) [15]. Innovative learning, such as cooperative, interactive and technology-based can increase student participation and activities (Elmahdi, 2018) [16]. he application of innovation must refer to a curriculum that contains learning outcomes with regard to global change. The more important a learning on a global scale, the greater the innovation that must be created by the teacher. One of the useful lessons in the modern world, especially in the face of the industry 4.0 era is learning geography.

Geography learning enables students to prepare themselves for work competition, especially work that requires spatial ability, navigation and social analysis (Hill *et al.*, 2018) [17]. When combined with Mathematics and Science, Geography learning is able to learn more about the problem of climate change and rising sea levels that occur in the world (Oldakowski & Johnson, 2018) [18]. Furthermore, the demands of industry 4.0 in the 21st century learning world require teachers to be able to interact and be familiar with the use of technology to its full potential (Barak, 2017) [19]. In addition, we need to realize that besides teachers, students are also required to master technology in the learning process. Students who experience difficulties in using technology will certainly affect the teacher's perception and greatly affect the success of learning (Henderson *et al.*, 2015) [20] (Table 3).

Table 3. The effect of student-admission-policy based zonation system on technology-based Geography learning process

Observed Aspect	Sub-urban area	Central city and Business area	Coastal area
Teacher's response to the Zoning system	Lack of equal distribution of socialization or facility allowances so that some agencies in the periphery are prone to technological stuttering or difficulties in implementing online zoning system acceptance	Easy accessibility makes information and facility allowances delivered properly, but there are gaps in student input with a variety of cognitive, psychomotor, affective and attitude abilities that are felt to hinder learning achievement	It is quite beneficial because the gap of favorite schools has been minimized, so the quota of incoming students is fulfilled.
Learning support facilities	Inadequate,	Adequate,	Inadequate,
	Geography and other social science subjects are considered still less popular than science subjects so that supporting facilities such as laboratories or practice rooms both indoors and outdoors are eliminated. The school considers that geography does not require much practice, compared to science subjects such as biology, physics and chemistry and languages.		
Application of classical learning	Continue to run interspersed with several innovations from the teacher one of them the use of online learning media and evaluation.	Technology-based learning such as the use of internet access and modern infrastructure has been done but is still interspersed with classical methods	Terus berjalan diselingi beberapa inovasi dari guru menggunakan *smartphone*
Teacher innovation in learning	-Use of the surrounding environment as a learning medium -Game methods such as role playing or puzzle map	- Utilization of various applications supporting the learning of geography with the facilities provided Field practice uses supporting tools for geographic material	-Utilization of the surrounding environment as a learning medium -Making clippings with newspapers

Teacher's knowledge of the development of the Industrial Age 4.0 in the education system	Some have understood that the Development of the Industrial Era 4.0 as an age is associated with the mastery of technology	Have understood the meaning of the development of the Industrial Age 4.0, but some have not yet applied it to learning	Some of them do not yet understand about the industrial era 4.0 and its implementation is still hampered by Human Resources (HR) and educational facilities
Standard models of geography learning in Industrial Era 4.0	*Face to face system*	-*Technologi based learning* -High order thingking skill (HOTS) based learning process -*Inquiry based learning* -*Blended learning* -Modelpembelajaran keterampilan berfikir kritis dalam literasi (KENIKIR)	*Face to face system*
Utilization of technology in learning geography	Utilization is limited to finding information using smartphones that are not yet fully owned by students or using computers that are available at school. The use of projector LCD is not evenly distributed there is in every class	Internet-based applications either via smartphone or computer -Gamer Information software	Utilization is limited to finding information using smartphones that are not yet fully owned by students. The use of projector LCD is not evenly distributed there is in every class
Technology based learning innovation	The use of offline-based information software such as LocusMap so that internet access constraints are slightly overcome	-*Augmented Reality* in geomorphology topic -Use of information applications or software such as Arcgis for learning related to spatial analysis	Use of information applications or software such as Arcgis for learning related to spatial analysis

Mastery about the environment, spatial, and territorial globally in geography requires the creation of great quality innovation. What's more there is a stigma that states geography as a boring subject (Apriyanto *et al.*, 2018) [21] and less important than science subjects and Matematic (Wahyuni, 2017) [22]. This has implications for the provision of teaching hours which are only 6 hours a week meeting, so that learning objectives are often not achieved. In fact, in learning geography there is an intellectual and practical content that must be balanced. These big demands, if harmonized with the principles of 21st century learning in the industrial era 4.0, then Technology Based Learning (TBL) is the right choice to be applied in geography. Minimum completeness criteria in learning geography can be achieved with Technology Based Learning innovation (Farisi, 2016) [23]. This can be proven based Turan *et al.* (2018) [24] in his research which states that the use of Augmented Reality (AR) technology in geography learning improves student learning and cognitive outcomes. Besides AR, there are various other technological innovations needed in geography such as Geographic Information Systems (GIS) or GIS where their use requires internet access. Preparations such as qualified human resources or facilities that meet the indispensable in the application of technology-based learning innovations to avoid various problems.

The reality in the field, both students' attitudes and intellectual abilities, are the biggest problems felt by geography teachers after the implementation of the zoning system. The variation of zoning in the acceptance of students raises many new things that must be faced by the school, especially in the learning process. Based on the data obtained, the zoning system raises many variations in attitudes and also the level of student knowledge. Similar to the geography teacher in the city of Semarang who

complained about the decline in the standard of student input at his school due to the zoning system. This makes geography teachers find it difficult to determine learning strategies that will be applied in teaching and learning activities. Moreover cognitive and psychomotor abilities are needed in carrying out technology-based geography learning. Students who previously came from underperforming schools and have low grades will be quite difficult to compensate for the ability of students who enter through the zoning path of achievement. Students with low grades were also stated by the teacher, having minimal self-confidence because they felt unable to compete with high-value friends.

Both schools in urban, suburb or coastal areas experience such problems, but other problems are experienced by schools in suburban and coastal areas. These problems concern the availability of infrastructure and accessibility that support learning activities (Table 4).

Table 4. Supporting facility of geography learning in school

Observed activity	**Sub-urban area**	**Central city and Business area**	**Coastal area**
Learning props	Infrastructure limitations, namely the lack of media and supporting tools for understanding the practical material	Modern and adequate	Limited
Supporting organization	Accessibility impedes access to government assistance	Support running smoothly	Accessibility impedes access to government assistance

Unlike schools in urban areas that have good internet access, modern infrastructure that supports, as well as good quality teaching staff, these two schools outside urban areas feel lacking. Student input from rural areas does not yet fully have technology such as smartphones or laptops, coupled with inadequate availability of facilities in schools making it difficult for teachers to make technology-based geography learning strategies. While the teacher's knowledge of the development of the industrial era 4.0 based on the results of the interview is also still limited. This situation has resulted in several standard learning models in the industrial era 4.0 such as HOTS-based, inquiry-based learning, blended learning, or technology-based learning that have not been able to be applied optimally to students with zoning systems. (Saradifa & Yulita, 2019) [25].

Therefore, the government should first improve the quality and quality of schools both in urban, peripheral, or coastal areas by generalizing facilities or the quality of educators. The effort is expected to be able to give the community the opportunity to choose a school that is close to their residence, but the problem of school quality is no longer in doubt. Furthermore, the availability of the number of public schools with the number of graduates in an area must also be leveled to overcome the existence of blank spot areas or are not touched by school zoning. If the zoning system has been implemented, then learning in heterogeneous class compositions can be a challenge for teachers.Siswa berprestasi membutuhkan pengayaan sehingga mereka akan tetap motivated to continuously improve their talents. While underachievement students need teachers who help them understand lessons better. Efforts to collaborate or cooperate with other agencies that have better facilities are also able to be a solution to the unequal availability of facilities. Public awareness, including teachers, parents, schools, and students must also be increased. The implementation of this zoning system policy will not be an instant and perfect transformation, so there needs to be an annual review.

4. Conclution

Zoning system policies lead to variations in the level of knowledge and attitudes of students so as to be able to inhibit the development of technology-based geography learning processes. The availability of facilities and the low quality of educators is also a problem faced by schools in rural and coastal areas. In the end, the geography learning process is more dominant using conventional learning and applying technology only as an opening and formative evaluation activity. It takes improvement in the quality and quality of schools in terms of leveling facilities in each school, urban, suburban or coastal. Intensive guidance to students in terms of academics, attitudes, or motivations as well as cooperation with other institutions is needed to balance the variation of student input..

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