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CURRICULUM INTEGRATION OF POPULATION MATERIALS IN SCIENCE SUBJECTS AT SENIOR HIGH SCHOOL

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Abstract

Various population issues become challenges in sustainable development in Indonesia. For this reason, synergy from various parties is needed to overcome and anticipate the problems caused by this population impact. One of them is by increasing the strategic role of teachers in instilling knowledge, attitudes, behaviors that are responsive and adaptive in dealing with population situations for headmaster, educators, education staff, and students. The effort that can be done is to integrate population material into the teaching and learning process according to the curriculum and local culture. The purpose of the study was to find out the implementation of the population material integration curriculum at High School. The results of this study are that the school curriculum can integrate population material with science subjects, but must be supported by teachers, students, headmaster. In conclusion, the school curriculum at the high school level can be integrated with population material with support from various parties.

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INTRODUCTION

Population projections are very much needed in development planning policies because the characteristics of the data are given regularly (Pitoyo, AJ et al., 2018). The policy direction of the RPJMN is to increase the knowledge and understanding of reproductive health for adolescents through education and outreach regarding the importance of 12-year compulsory education in order to mature marriage, and increase the intensity of family planning services for young couples to prevent births in adolescence (Bapenas, 2014). Indonesia is a large country seen from a population perspective. Based on the results of the 2010 population census, Indonesia ranked fourth in the world. The population was recorded at 237,556,363 inhabitants. With a growth rate of 1.49% per year, and will continue to grow to around 309 million by the year 2050. The size of the population affects the amount of energy, food, and water needs. The size of the population can be used as capital for the development of the country. The challenge is the large number of residents offset by the quality of the population. The phenomenon of population growth in large numbers with relatively short time is happening in our country (BKKBN, 2014).

The uncontrolled population addition, the need for knowledge and skills that are direct application in real life and become a pattern of action and mindset for handling more specific to the problems faced (Kadir, Abdul, 2013). Various population issues become challenges in sustainable development in Indonesia. In general there are three areas which are the focus of population policy in Indonesia. The first is controlling the quantity of the population. In this policy the most prominent policy is managing the quantity of population through regulation of pregnancy and birth (family planning programs) and decreasing mortality (health programs). Second is improving the quality of the population through health and education programs. Third is directing the mobility of the main population through transmigration and regional development programs. In addition, the improvement of the population information system has also become the focus of population policy in Indonesia. Population development which includes quantity regulation, quality development and direction of distribution and mobility is the development of human resources. With this understanding, the population is the central point of development. On the one hand the population must be built so that they are able to become actors or development resources.

Bonus Demography is one of the changes in demographic dynamics that occur due to changes in population structure according to age. (Yusmarni, 2016). Demographic bonuses are a valuable phenomenon for Indonesia (Agustina, Sari et al., 2018). Indonesia is expected to reach the peak of demographic bonuses in 2017 to 2019 for the first wave and 2020 until 2030 for the second wave of demographic bonuses. This means that the composition of the population with a productive age of 15-64 years reaches the maximum point when compared to non-productive age 0-14 years and 65 years and above. (Jati, Wasisto, 2015). Various population studies literature uses the term bonus demography to describe the economic benefits received by Andriani, Dian et al., 2018). (Demographic dividend) is interpreted as an economic benefit caused by the increasing amount of savings from productive residents. This can spur investment and economic growth. These conditions are also commonly known as windows of opportunity for a country to accelerate. economy by boosting the manufacturing industry, infrastructure, and business world because of the abundance of the workforce.Demographic bonuses can also turn into a wave of mass unemployment and increasingly add to the burden of the state budget.If the Indonesian people use fairly demographic bonuses, the government will adopt policies that support this utilization (Hayes, Adrean, 2015) Some of the policies contained in the main points of development are to create quality education, create a healthy life and create a prosperous and without poverty community (Hayati & Alfana, 2016).

Environmental education is realized by various parties is very important because

human behavior and actions on the environment are very influential on the future of humans and their environment (Hadi & Masruri, 2016). Planting awareness of crucial population issues must be carried out by various parties, including the world of education. Teachers carry out a strategic task to make the young generation aware of the population conditions in the future they will live in (BKKBN, 2014). The function of population education and reproductive health for adolescents is one of them as a provision for them to deal with problems in population and increase the standard of living with increasing health status (Titisari, 2018).

Synergy from various parties is needed to overcome and anticipate the problems caused by this population impact. With challenges and expectations in population dynamics, there needs to be awareness of the generation of students to be aware of population problems. Demographic variables play a direct and indirect role in the application of technology in learning (Aldowah, Hanan et al., 2017). For this reason, in the realm of formal school institutions must concoct so that population material can be conveyed well to students. One of them is by increasing the strategic role of teachers in instilling knowledge, attitudes, behaviors that are responsive and adaptive in dealing with population situations for educators, education staff and students. The effort that can be done is to integrate population material into the teaching and learning process according to the curriculum and local wisdom. A teacher is required to understand the importance of population education and is able to integrate population material into the 2013 curriculum. The purpose of the study is to determine the implementation of the population material integration curriculum at the high school level.

METHODS

The approach of this research is qualitative research. The research method used is descriptive qualitative. The data obtained were analyzed by a qualitative approach, the presentation was descriptive narrative. The procedure of this study begins with developing research instruments namely interview instruments, in-depth observation. The time of the study was conducted on 21-27 February 2019, the research subjects were principals, teachers, and students of SMA N 1 Banguntapan Bantul, Province of D.I. Yogyakarta. The object of this research is the integration of material curriculum Population in Science Subjects of SMA N 1 Banguntapan, Bantul Regency.

RESULTS AND DISCUSSION

The educational process is an interaction of six components consisting of teachers, curriculum, facilities and infrastructure, evaluation, learning technology, and students. The curriculum is one component of education that is quite influential on the success of the implementation of education. That The curriculum is said to be effective when the curriculum is able to prepare graduates in accordance with the public interest. This is important because the curriculum is the heart of educational activities and processes. The curriculum has three main dimensions, namely: the intended curriculum (intended curriculum) related to goals and plans; curriculum implemented (curriculum applied a) by relating to the learning process and institutional arrangements; and the curriculum is obtained (curriculum matters) where students gain educational experience (Dewi, WS et al., 2018).

Research on the Integration of Population Material Curriculum on Science subjects based on the integration variables of population material in the 2013 curriculum for high school, the step of integration of population issues, mapping of population issues with subject matter basic competencies, and supporting factors as well as the integration of population material integration.

A. Integration of Population Materials in the 2013 Curriculum

Development of an integrated curriculum (integrated Curriculum) starts from an entire or a whole. The curriculum is

structured by integrating the whole parts of the indicator into a curriculum frame to achieve a specific goal (Sitorus, 2017). 2013 curriculum development based on 21st Century Skills. In the 21st century framework, cognitive knowledge alone is not enough, but supporting skills are needed (H Widhy, Purwanti et al., 2013).

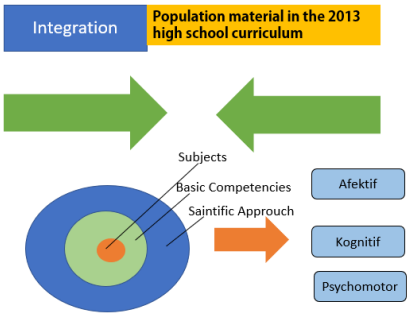


Figure 1. Integration of Population Materials in the 2013 Senior High School Curriculum

To achieve the target and learning press points in the 2013 curriculum, the learning process is carried out with integrated thematic models, scientific approaches, and authentic assessments. Integrated thematic models make the Basic Competencies in each subject content bound to each other. Learning becomes very flexible and reinforces more diverse activities or activities. The scientific approach is a major milestone in every learning. Students are invited to build their own knowledge through learning activities. The flow of the scientific approach includes: observing - asking questions - reasoning - trying - forming networks. Authentic assessment is a significant measurement of student learning outcomes. The types of authentic assessments include: performance, project, portfolio, and written assessments. The teacher as a learning designer has the freedom to choose, design, and process learning materials according to the needs and environment of students.

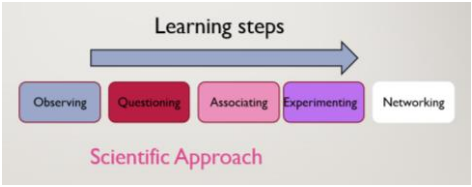


Figure 2. Learning Steps of the Scientific Approach

Integration of population issues with the 2013 curriculum will be realized on subjects that have appropriate competencies. The first task of the teacher is to study and choose which basic competencies can be used as a reference to be able to include the contents of population issues in classroom learning, then develop learning plans through the scientific approach. The flow of the scientific approach includes: observing - the question - reasoning - trying - forming the network (communicating). Observing methods are very beneficial fulfillment of curiosity of students. So that the learning process has a high meaning. Questioning is a learning process that involves students in real, in learning. Students are not only passive, but are always proactive in learning. Reasoning is the process of understanding students about a material obtained, then trying to associate that understanding with other things beyond the material they have understood. Try / experiment learning expects students to have process skills to develop knowledge about the environment, and be able to use scientific methods and be scientific to solve problems they face on a daily basis.

B. Steps for Integration of Population Issues, Map of Population Issues with Basic Subject Competencies

Integrating population issues into the 2013 curriculum can be carried out in the following steps:

1. Choosing Basic Competencies that are in accordance with the population content.

Integration of curriculum in certain materials has influence and knowledge attitude (Wahyuningrum, Tri, 2017). Before integrating the content of population issues into the 2013 curriculum the teacher must first find and find basic competencies to be selected from all

subjects in accordance with the content of population issues, because not all basic competencies contained in the 2013 curriculum are substance and automatic in accordance with the content issue population. There is no addition of new content, but it enriches and deepens the theme of population in achieving its goals. The purpose of the 2013 curriculum is to develop students' abilities in applying real life (Widiyatmoko & Shimizu, 2018).

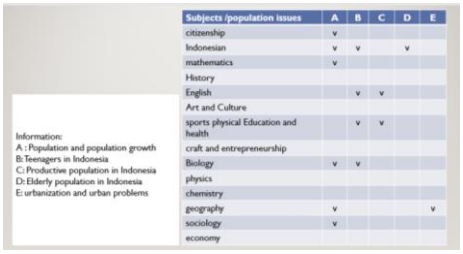
2. Arranging the Learning Implementation Plan (RPP)

Learning planning can also be interpreted as the process of preparing learning materials, namely the use of learning media, the use of approaches, the use of approaches or methods of pursuit, in one time allocation that will be implemented in the coming semester to achieve the specified goals (Susilo, Suryawan, 2018) . In preparing this lesson plan the teacher can develop learning that is in accordance with the content of population issues and harmonized with the characteristics of the subjects. Preparation of lesson plans is expected to describe the acquisition of students in the form of attitudes, knowledge and skills related to the content of population issues and subject matter taught.

3. Integrating Population Issues in Learning by Using a Scientific Approach.

The third step is to integrate the content of population issues in learning. The approach used is a scientific approach, which is based on scientific stages. Strengthening the learning process includes: a) using the scientific approach through observing, asking, trying, processing, presenting, reasoning, creating, and communicating while paying attention to the characteristics of students, b) using science as a driver of learning for all subjects, c) guiding students to find out, not to be told (discovery learning), and d) emphasize language skills as a means of communication, knowledge bearers and logical, systematic, and creative thinking (Kemendikbud, 2014).

C. Map of Population Issues with Subject Basic Competencies



Information:
A : Population and population growth
B: Teenagers in Indonesia
C: Productive population in Indonesia
D: Elderly population in Indonesia
E: urbanization and urban problems

Subjects /population issues	A	B	C	D	E
citizenship	v				
Indonesian	v	v		v	
mathematics	v				
History					
English		v	v		
Art and Culture					
sports physical Education and health		v	v		
craft and entrepreneurship					
Biology	v	v			
physics					
chemistry					
geography	v				v
sociology	v				
economy					

Figure 3. Mapping Population Issues in Subjects

Load of population issues that can be integrated with the 2013 curriculum consisting of 5 (five) issues population, namely:

A. Amount and population growth
B. Population adolescents in Indonesia
C. Productive population in Indonesia
D. Elderly population in Indonesia
E. Urbanization and urban development in Indonesia

Table 1. Mathematics Integration

Core Competence	**Basic competencies**
KI: Living and practicing honest behavior, discipline, responsibility, caring (mutual cooperation, cooperation, tolerance, peace), courtesy, responsiveness and pro-active and showing attitude as part of the solution to various problems in interacting effectively with the social and natural environment and in placing themselves as a reflection of the nation.	KD: 2.3 Demonstrate responsibility, curiosity, honesty and environmental care. Indicator: Care for the rate of population growth in Indonesia. There is a curiosity about the rate of population growth in Indonesia.
KI-3: Understand, apply, analyze factual, conceptual, procedural knowledge based on	KD: 3.20 Describe various data presentations in the form of tables or diagrams / plots that

their curiosity about science, technology, art, culture, and humanities with humanity, nationality, state and civilization insights related to the causes of phenomena and events, and apply procedural knowledge in specific fields of study according to their talents and interests to solve problems.	are suitable for communicating information from a data set through a comparative analysis of various variations of data presentation. Indicators: • Observe and read the diagram of the rate of population growth in a given period Identifies the value of the data displayed in tables and diagrams population growth.

Table 1. Biology Integration

Core Competence	Basic competencies
KI-3: Understanding, applying, analyzing knowledge factual, conceptual, procedural based on taste his curiosity about science knowledge, technology, art, culture, and humanities with insight into humanity, nationality, statehood, and civilization related to the causes of phenomena and events, and apply knowledge procedural in the field of study specific ones according to talent and his interest to solve problem.	KD: 3.13 Apply understanding of the principles of human reproduction for overcoming accretion residents through the program family planning (KB) and quality of life HR through breastfeeding exclusive. Indicator: Discuss relationships between health, reproduction, family planning programs and population. Dig up information to find the reason for the importance of the first ASI out for a baby.
KI-4: Processing, reasoning, and presenting in the concrete and abstract realms related to the development of what he learned in school independently, and being able to use methods according to scientific rules.	KD: 4.14 Solve population density problems by applying human reproductive principles. KD: 4.15 Plan and conduct a campaign on efforts to reduce population growth and improve the quality of human resources through the Family Planning (KB) program and exclusive breastfeeding in the form of posters and banners (BKKBN, 2014).

D. Supporting Factors and Obstacles to Integration of Population Materials

1. Supporting Factors
   a. The existence of human resources (HR) who want to contribute to the integration of population material
   b. The role of principals, education staff, teachers supports and facilitates the integration of population material
   c. Banguntapan 1 High School as one of the population alert schools (SSK) pilot schools.
   d. Active involvement of 15 students as population cadres
   e. There is a population corner as a means of communication media population

f. The principal and 10 selected teachers have participated in the workshop on making a Learning Implementation Plan (RPP) on population material.
g. Population material is also included in the Youth Red Cross extracurricular (PMR)

2. Inhibiting factors
   a. The teacher must make a Learning Implementation Plan (RPP) to include population material.
   b. Teachers need more time in preparing learning in population material.
   c. Teachers are required to be more creative in presenting material.

More supporting factors because in SMA N 1 Banguntapan synergize between principals, education staff, teachers, and students. Good collaboration makes integration of population material easier for students to accept.

CONCLUSION

Integration of population curriculum can be done on subjects in high school. In addition, population materials can be included in extracurricular activities at school. This can work well if supported by the principal, education staff (curriculum affairs), teachers, and students.

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