

## **PROBLEM-BASED LEARNING AND OUTDOOR ACTIVITIES VISITING STUDENTS AT BOGOR REGIONAL PLANNING AND DEVELOPMENT AGENCY**

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**Abstract.** This article develops a learning model for the visiting students in Bogor Municipality Regional Planning and Development Agency (BAPPEDA). The proposed learning model is developed from a combined Problem-based Learning (PBL) and Outdoor Activity. Four students from a senior high school visited Bappeda from January 2nd 2023 until January 13th 2023. During their visit in Bappeda, students performed series of activities which include document analysis, discussion to decide study location, GIS (Geographic Information System) practice learning, field surveys, and final presentation. From these activities, a learning model was developed according to the PBL and outdoor learning principles. Three major outcomes are generated from this combined learning model namely, students are able to map the Kampung Lauk using GIS software, students can prepare a simple questionnaire to inquire Bappeda employees' perception about Kampung Lauk and distribute it, and students can identify problems relate to the development of Kampung Lauk and perform final presentation to offer recommendations.

**Keywords:** Problem-based learning; Outdoor activity; Visiting students; Learning model development

### **I. INTRODUCTION**

The Bogor Municipality Regional Planning and Development Planning Agency (Bappeda) as a supporting element carries out supporting functions in the field of regional planning, as well as in the field of research and development. Bappeda is a type A Municipality Agency according to Bogor Municipality Mayor Regulation (Perwali) Number 144 of 2021. Position, Organizational Structure, Duties and Functions, and Work Procedures of Municipality Apparatus. Bappeda regularly receives study visits from high school and equivalent students.

However, the placement of high school and equivalent students when conducting study visits or PKL (Practical Field Work) at the Bogor City Bappeda, has not yet found the right formulation between the placement location and the competencies a student wants to achieve. In fact, in Bappeda, according to Perwali 144/2021, there are four divisions and one secretariat. The four divisions are, (1) Regional Development Planning, Control and Evaluation, (2) Government and Human Development, (3) Natural Resources, Infrastructure, Regional Economics (Persik), and (4) Research and Development. Therefore, to be suitable to the characteristics of each field in the Bappeda, the placement of study visits and PKL for high school and equivalent students should be adjusted to the needs of the students and the needs of the Bappeda.

According to Minister of Education and Culture Regulation Number 50 of 2020 (Permendikbudristekdikti 50/2020) concerning PKL for Students, PKL is training for students at SMK/MAK, SMALB, and LKP which is carried out through work practices in the employer's office within a certain period of time in accordance with the curriculum and needs of the employer. It was further explained that PKL aims to (1) foster professional character and work culture in students, (2) increase students' competence according to the curriculum

and the needs of the employer, (3) prepare students' independence for work and/or entrepreneurship.

With the provisions of the Permendikbudristekdikti 50/2020, it would be an advantage for the Bappeda to have a curriculum or at least the work requirements needed for vocational school students' PKL activities or study visits for high school students and the equivalent. In this regard, it is necessary to have a learning model that can be prepared as a guide for Bappeda in designing learning activities for both PKL and study visits.

One of the learning methods is Problem-based Learning (PBL). According to [1], the PBL learning process relies on finding more than one answer to a problem question. In PBL, students in various groups actively work to explain problems that occur, research these problems, and formulate learning problems that will guide further study. Group members then learn independently by identifying learning sources that are relevant to practical and theoretical theory. Another learning model is outdoor learning, which according to [2] in developed countries attention to outdoor learning has been given even at the beginning, and in contrast in other countries learning traditions and curriculum design do not pay attention to learning outside of school and are only limited to extracurricular activities. According to [3], geographic education has a major role in connecting the physical environment, knowledge about space and location, and sustainable development. Learning about geographic issues such as climate change and developing geographic thinking in the external environment offers good opportunities for creativity that supports skills in solving environmental problems.

Interestingly, when geography is taught in classrooms by teachers with speeches, [4] observes that students feel passive and sleepy. On the contrary, students feel confidence to use their knowledge as well as use geospatial technologies when

they do outdoor activity in form of mapping their own neighborhood to increase spatial thinking [5]. Moreover, students feel interested for learning activities in outdoor activity as well as improve their meantal map [6]. In outdoor study, the surrounding environments are used as main learning sources for students [7]. Hence, from the benefits of PBL and Outdoor Activity mentioned in various research previously, this article aims to develop a learning model based on observed activities of 'visiting students' in Bappeda.

**II. METHODS**

The method used in this study is qualitative with interviews, observation, and document analysis. This method was used by [8] in researching class activities. Data sources include interviews and observations of students from a high school during PBL activities at Bappeda, and documents resulting from student work. Accoding to [9], observational data, interviews, and questionnaires that describe the learning process are included in qualitative aspects.

**A. Analysis and data collection**

Interviews with high school students and Bappeda's civil servants were performed to obtain the data needed to build a

learning model. In addition, observations of the activities of high school students during PBL and Outdoor Activities were conducted to complete the data requirements. Documents produced by students such as presentation slides and maps resulting from field surveys are used as material for preparing learning models.

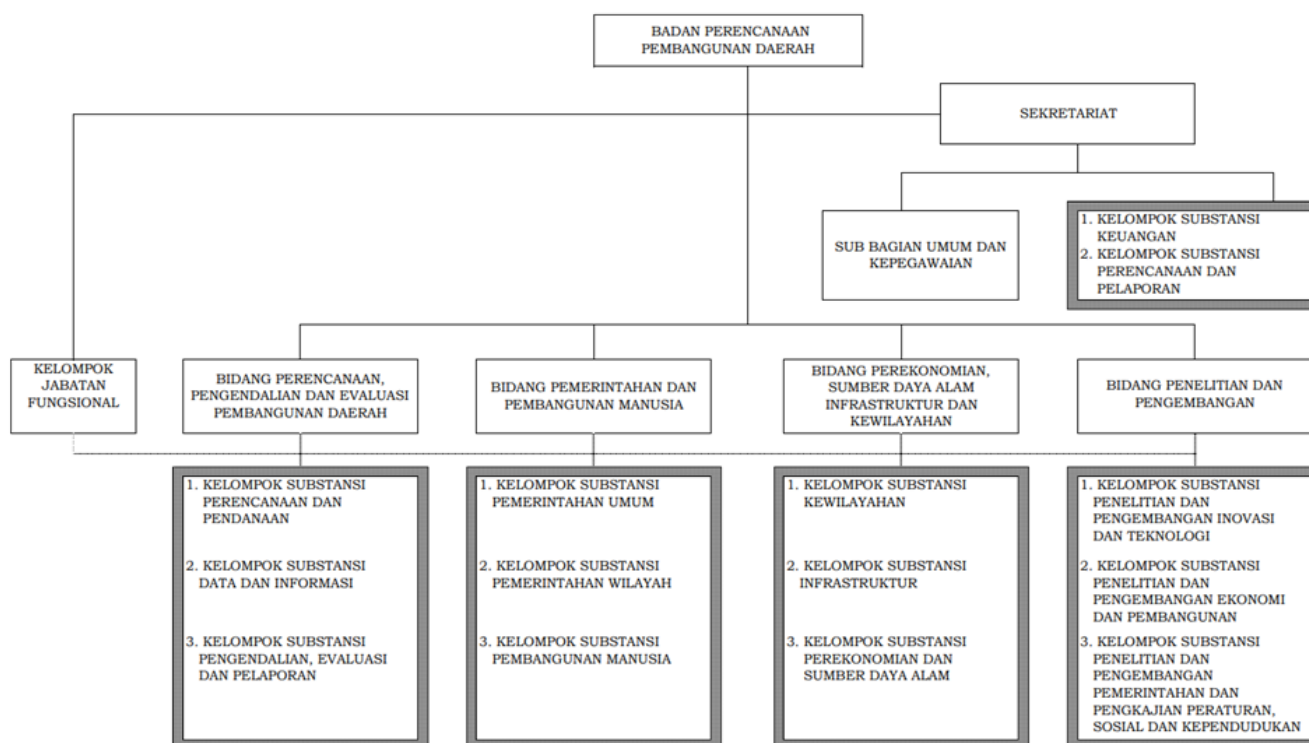
**III. RESULTS AND DISCUSSION**

XYZ Senior High School student activities at the Bappeda took place from January 2, 2023, to January 13, 2023. There were four students from XYZ Senior High School who participated as visiting students. Students' placement was in the Research and Development Division, where this division specifically handles research, development and innovation activities. The first day began with an introduction to the organizational structure of the Bappeda and exploring interests in areas of study.

On the second day, based on the results of the discussion, it was agreed between the students and the Bappeda that the field of study to be chosen for the PBL activity consisted of two fields of study:

1. Kampung Lauk program as a thematic village,
2. Geographic Information System (GIS) Program.

Figure 1. Organization of Bappeda



(Source: Perwali 144/2021)

For the Kampung Lauk Program, coaching for XYZ Senior High School Students was carried out by the Research and Development Division of Bappeda, while for the GIS practice learning was performed by the Persik Division.

Furthermore, based on Bogor Mayor Regulation Number 25 of 2022 about the Amendments of Perwali

144/2021 the Bappeda consists of four divisions and one secretariat. If we look at the work program of XYZ High School students, based on the main tasks and functions in Figure 1, it can be identified that the Kampung Lauk Program as a thematic village is managed by the Research and Development Sector, while the GIS Program is managed by the Persik Division.

Bogor Municipality Mayor Regulation Number 57 of 2022 about Amendments to Mayor Regulation Number 57 of 2019 concerning the Strategic Plan of the Regional Development Planning Agency for 2019-2024, states that the number of thematic villages/tourist villages is a key performance indicator of the Research and Development Program managed by the Research and Development Division. This confirms that the PBL activities for XYZ Senior High School students which focus on thematic village programs are indeed managed by the Research and Development Division.

Meanwhile, to perform the GIS program, XYZ Senior High School students were guided by a civil servant who had geospatial competence with Diploma-III (D-3) certificate. In the initial stage, students were asked to look for initial data related to the thematic village program in Bappeda. In this case, the staff of the Research and Development Division provided report books that had been produced by the Bappeda, namely:

1. Study Report on Selection of Priority Locations for Thematic Village Development in Bogor Municipality in 2021;
2. Study report on the preparation of the 2022 Thematic Village Landscape Design Document for Kampung Lauk.

On the third day, students explained the initial data on the thematic village program in Bogor Municipality which came

from documents in Bappeda and searched for information from the internet. The results of the students' presentations were then discussed with the Head of Research and Development Division and staff. Furthermore, it was agreed that the Kampung Lauk Program would be used as a study location.

#### **A. Field survey as Outdoor Activity implementation Analysis and data collection**

A field survey of the Kampung Lauk location was carried out on January 10, 2023, involving all staff from the Research and Development Division of the Bappeda. There are three main activities carried out by students in Kampung Lauk, namely:

1. Interviews with Kampung Lauk stakeholders, namely with representatives of Bubulak Village, West Bogor District, Head of RT 1 RW 11 Bubulak Village, members of youth groups and mothers participating in healthy exercise;
2. Determining polygon points using the Global Positioning System (GPS) to create a map of Kampung Lauk.

The results of Kampung Lauk mapping which were conducted by XYZ High School students and guided by Bappeda civil servant can be seen in Figure 2. The following are the results of the mapping of Kampung Lauk.



Figure 2. The map of Kampung Lauk as a product from the visiting students (Source: Authors)

On January 13 2023, a presentation by XYZ High School students was held which was attended by the Head of Bappeda as well as the Research and Development Division. In this activity, XYZ High School students presented the results of the activity in the form of slides made with Canva software. The results of the activities are uploaded to the Instagram page.

The result of distributed questionnaire by the students can be seen in Figure 3. Interestingly, 16.7% of Bappeda employees have not known yet about the Kampung Lauk program, while 83.3% of the Bappeda employees have known about the program. The prominent result of this questionnaire is that although 66.7% of the employees have not visited the Kampung Lauk location, but 100% of the

employees are interested to visit the Kampung Lauk. In addition, 86.7% of the employees consider that Kampung Lauk is interesting to see.



Figure 3. Results of distributed questionnaire

The presentation of activities by visiting students resulted in four recommendations for the Bappeda, namely:

1. Thematic villages should be promoted by visiting the Kampung Lauk location and helping develop the village into a Bogor icon;
2. Community potentials should be explored to make contributions plus encourage the formation of

institutions as well as various regional instruments to accelerate development, and encourage CSR (Corporate Social Responsibility) to contribute for Kampung Lauk development;

3. Development for policies and planning should be encouraged as well as empowering local communities



so that the development of Kampung Lauk as a tourist destination will be sustainable;

4. An integrated planning should be developed which connects all of Bogor Municipality agencies to assist the development of Kampung Lauk, and therefore Bappeda as the leading agency in planning can supervise and direct Bogor Municipality agencies.

### B. The learning model for the visiting students in Bappeda

The results of the visiting students from XYZ High School activities are very satisfying which can be seen during their presentation. Hence, a learning model can be formulated which combines PBL activities with Outdoor Learning for visiting students in the Bappeda. The flow chart of the learning model for visiting students in Bappeda can be seen in Figure 4.

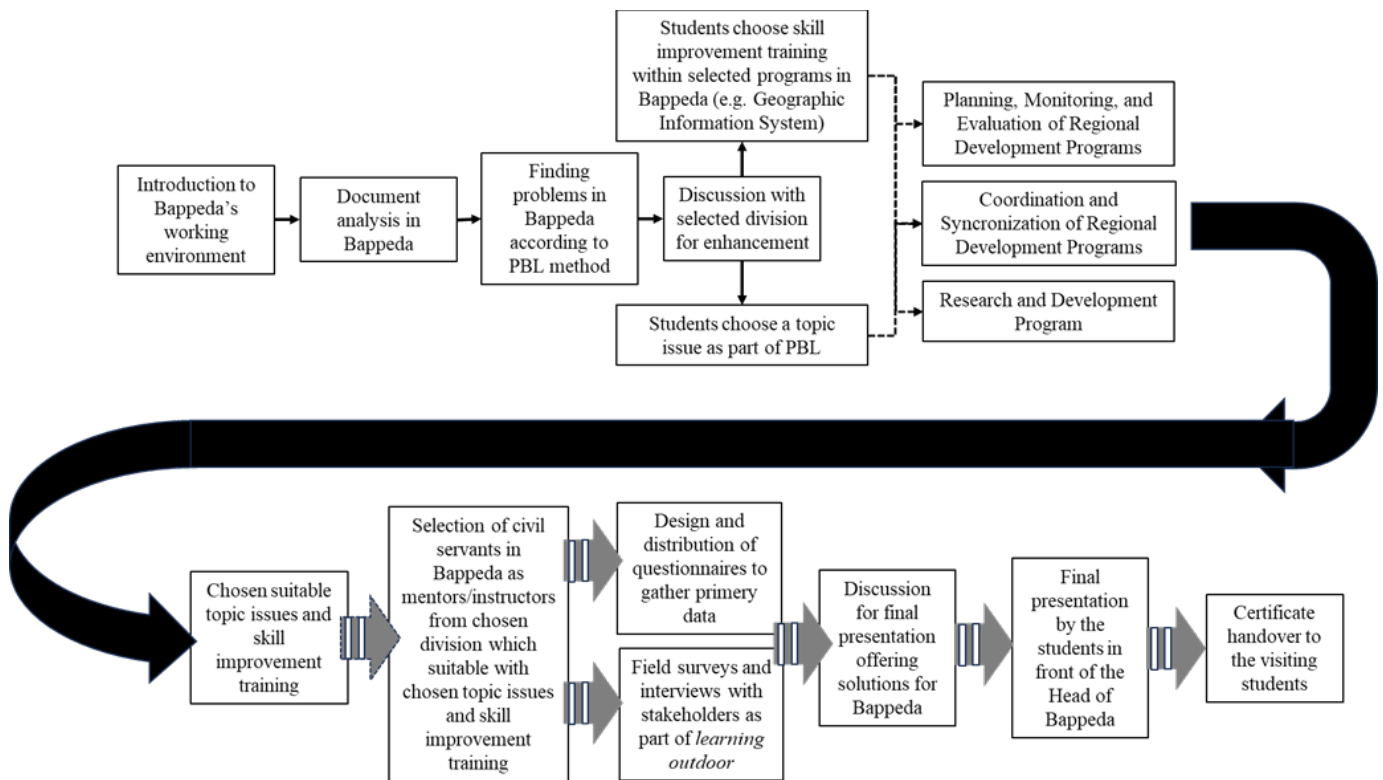


Figure 4. A learning model which combines PBL and outdoor activity for the visiting students in Bappeda (Source: Authors)

In this learning model, the PBL method is applied for students in searching the required documents at Bappeda. PBL means to learn independently by identifying learning sources that are relevant to practical and theoretical theory. Meanwhile, another application of the PBL method is the discussions on preparing the final presentation to offer the solution. One of the characteristics of PBL according to [1] is that there are groups guided by tutors. Consequently, in the proposed learning model as can be seen in Figure 8, there is a step for selecting civil servants as mentors/instructors from fields that suit the problem topics and skills training chosen by students. Another characteristic of PBL in this learning model within Bappeda, is that there are student presentations which offer various solutions.

The flow of learning model presented in Figure 4 in general follows the learning process in PBL which according to [10] is begun with problem analysis and finished in the reporting stage. Further, the added outdoor activity plus GIS practice learning in this learning model can be considered as improvement to increase the visiting

students' ability to have better geographic problem solving skills, where previous studies [11] have emphasized to better understanding for geographic problems. In addition, when the visiting students are introduced with project-based model i.e. Kampung Lauk case study, it is expected that the visiting students will have creative thinking skills as well as direct student involvement where in a previous study [12] has been discussed.

The successful use of GIS software to contribute students' achievement in learning has been empirically performed by [13]. In addition, GIS as part of geospatial technology can be used as learning material can improve students' spatial thinking [14]. The learning of GIS in Bappeda for the visiting students can be considered as alternative learning process for high school students. This because the GIS learning material in the textbooks have deficiencies and therefore create obstacles to learn GIS [15].

### IV. CONCLUSION

The combination of PBL and outdoor activity has been successfully implemented to develop a learning model for the visiting students in Bappeda. Three major outcomes are generated from this combined learning model namely, students are able to map the Kampung Lauk using GIS software, students can prepare a simple questionnaire to inquire Bappeda employees' perception about Kampung Lauk and distribute it, and students can identify problems relate to the development of Kampung Lauk and perform final presentation to offer recommendations. One of the advantages in this learning model with combined PBL and Outdoor is that students are able to operate GIS software which has been the excellent of Bappeda, which can be interpreted from mapping product i.e. Kampung Lauk Map.

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