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LOCAL WISDOMIN LEARNING AS AN EFFORT TO INCREASE CULTURAL KNOWLEDGE: STUDENTS' PERCEPTION AS PROSPECTIVE TEACHERS

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Abstract
Education not only teaches concepts but also the formation of attitudes and characters in preserving local culture. Knowledge of local wisdom is important because it is a means for students to better understand and love their culture.This study aims to determine the response of students and how the ability of prospective teachers to design local wisdom-based learning. A questionnaire and observation instrument were employed in this research. Students' perceptions of learning based on local wisdom were assessed. Besides, the ability of students in designing local wisdom-based learning activities was evaluated. This type of research is a qualitative descriptive study. The results of this research showed students' positive perception of learning based on local wisdom. The ability of students in designing learning activities gives good results. Local wisdom-based learning provides an opportunity for students to get to know their local culture and develop it into chemistry learning activities. The researcherof this study suggests the continuity of the implementation of local wisdom-based learning to preserve local wisdom values.

Keywords: a prospective teacher, designing learning activities, local wisdom

Introduction
Based on ministerial regulations on the basic framework and curriculum structure, learning in the 2013 curriculum requires students to be able to implement the learning outcomes obtained at school to the community, so that there is reciprocity between learning at school and the surrounding environment. Besides, the essence of the 2013 curriculum also provides students with skills and noble characters according to the Indonesian personality. According to the Law of the Republic of Indonesia No. 20 of 2003 concerning the national education system states that the curriculum used in the learning process must pay attention to regional potential, to preserve regional culture,one of which is through local wisdom.

Today, the discussion about local wisdom in supporting progress and building national character is getting more and more attention. In line with this statement, Ufie (2016) said that local wisdom is a characteristic of the nation that must be preserved from one generation to the next. The preservation of local wisdom is very effective through education and the learning process. Local wisdom-based education is education that teaches students to always be close to concrete situations and the phenomena around which

they face. Kongprasertamorn (2007) explains that local wisdom is all forms of knowledge, beliefs, understandings, and customs or ethics that demand human behavior in life in an ecological community. Local wisdom is indigenous knowledge or local genius of a society that comes from the noble values of cultural traditions to regulate the order of people's lives. Local wisdom can be in the form of local knowledge, local skills, local intelligence, local resources, local social processes, local ethics, and local customs (Gondwe & Longnecker, 2014)(Berkes, J, & Folke, 2000). Local wisdom becomes an alternative source that contains basic thoughts or ideas that can be used as a guide in everyday life. Life in the family and community provides cultural knowledge that is absorbed by students from an early age. This cultural knowledge needs to be embedded in learning in schools so that local wisdom values remain sustainable (Harsojo, 2013).

Science learning which includes biology, chemistry, and physics lessons can use local wisdom as a learning resource and can be directed towards contextual learning. According to Hernani, Muzakir, & Siti (2012), the development of local wisdom-based learning has a significant role in the learning process of students and teaching teachers.The values of local wisdom can be used as the basis for character education in schools. These values can be introduced to young people through the learning process at school (Istiawati, 2016). In addition to preservation, introduction, and cultivation of local wisdom values in schools can also motivate students to be more aware of the importance of learning chemistry because it is associated with the environment around students so that learning is more meaningful for students.

The values of local wisdom can be used as the basis for character education in schools. Character education includes very broad variables, some of which are character knowledge, problem-solving skills, communication skills, and attitudes towards teachers (Berkowitz, Battistich, & Bier, 2008). Character education is an effort to direct human attitudes and behavior towards noble life values.

Teachers as the spearhead of educational success are expected to be able to plan, design, or develop this local wisdom-based learning. Students who can preserve local culture and wisdom cannot be separated from the ability of teachers to manage learning activities. The challenge in preparing prospective science teachers is not only the ability to integrate between science concepts but the ability to design learning that can provide students to preserve culture in Indonesia. However, in reality, many teachers have not integrated local wisdom into learning so that the goals of education have not been fully achieved. According to Sudarmin & Pujiastuti (2015) in their research, it explains that community science knowledge is based on culture and local wisdom about something unique and distinctive, has not been widely researched, and developedand has never even been used as a learning resource in science learning.

Based on the background that has been stated above, the researcher is interested in knowing how the perceptions of prospective teacher students towards the integration of local wisdom in learning. This perception is needed to determine the extent of knowledge, interest, and motivation as well as the ability of students asprospective teachers in designing local wisdom-based learning.

Method

This research is a qualitative descriptive study conducted in the Chemistry Education Study Program, Sanata Dharma University, Yogyakarta. This research use open and closed questionnaires and observation sheet to answer the problem; students' perceptions and experience of local wisdom-based chemistry learning. The research was conducted during the fall semester of 2019 to 31 respondents from Innovation in Learning Chemistry based on the Local Wisdom Course. This course must be taken by second-year students. It provides students because as prospective teachers, students need to know chemistry

learning based on local wisdom by inserting local wisdom values into the learning process in schools as an effort to preserve the potential and culture of each region. In addition to the survey, discussion and observation were reviewed. The final report showed the results of the survey (closed-ended questions) and descriptive (open-ended questions) to the integration of local wisdom in learning.

Findings and Discussion

This lecture begins with an understanding of the concept of local wisdom in general, the functions, potentials, and values of local wisdom, then continues with the integration of local wisdom into a lesson. Students design chemistry learning activities based on local wisdom from their hometowns in groups. The types of learning produced are shown in Table 1.

Table 1. Types of Learning based on Local Wisdom

No	The Learning Activity Designs Developed by Students
1	Learning Chemical Element with "Karume" Games
2	Learning Chemical Bonding with "Kawin Mawin" Culture
3	Dakon's Game in Learning the Periodic System of the Elements
4	Electron Configuration "Gatheng" Game
5	"Ampar-Ampar Pisang"Song for Colloid
6	"Wayang" Show with the Play of Chemical Elements
7	"BITA" Game in Acid-Base Material
8	Making Natural Acid-Base Indicators from Telang and Kaca Piring Flower
9	Making Model of Molecular Orbital from Sago Flour

The researcher who also teaches this course makes observations of the learning process being carried out. The results of the observations show that the students have been able to plan, design, and implement chemistry learning based on local wisdom. Chemistry learning is designed by following under with the culture of the area where students come from, in the form of songs, games, cultural customs, art performances, and typical regional plants and regional specialties.

Apart from observation, the research data obtained were in the form of questionnaire data. The results of the questionnaire showed a positive response from students as respondents. Data obtained through questionnaires in the form of student responses to the integration of local wisdom in chemistry learning presented based on the observed aspects and descriptive qualitative disclosure based on the responses given. Based on the questionnaire data, the following information was obtained.

The data in Figure 1 shows that the respondents (54.8% agree) stated that the respondents know and understand the meaning of local wisdom in general. However, as many as 45.2% of respondents quite understand the meaning of local wisdom. This is because respondents do not know that local wisdom can be integrated into learning. Local wisdom according to Alfian (2013) is defined as a view of life, knowledge, life strategies that arise as activities carried out by local communities in fulfilling needs. This is supported by the responses of the following respondents:

> R02: "Before this lecture, I quite understood the meaning of local wisdom and it turns out that local wisdom can be integrated into learning. Very interesting!"
>
> R06: "I don't really understand the meaning of local wisdom, which I know is limited to the ancient culture that exists in society, but after receiving this lecture, I understand that local wisdom is close to daily life and can be

implemented in chemistry learning".

R29: "It was a very pleasant experience because I was able to show the Papua region, and it was very interesting.

The data from Figure 1 also shows that respondents (67.7% agree) state the need for integration of local wisdom in learning, but only 16.1% of respondents know what types of local wisdom can be integrated into learning. Education-based on local wisdom is education that utilizes local excellence and knowledge through the seven elements of culture, namely language, knowledge systems, religion, livelihood systems, arts, social organizations, and systems of living equipment or technology, which are beneficial for the development of students' abilities (Asmani, 2012)(Wardhani, 2016). This is supported by the results of an open questionnaire:

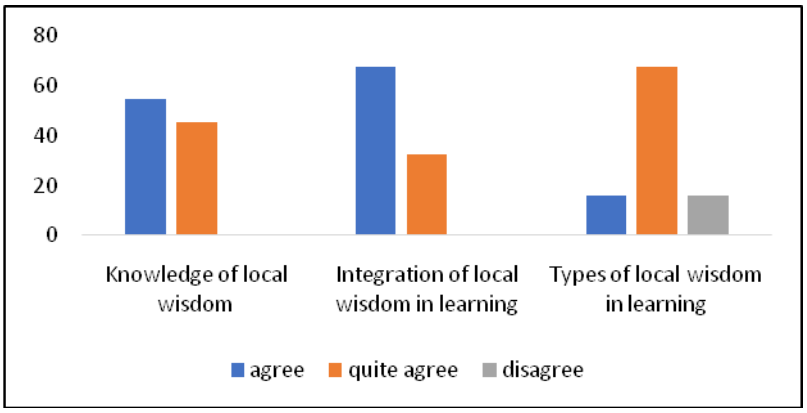


Figure 1. The results of a questionnaire in understanding the meaning of local wisdom

R10: "My experience while attending local wisdom lectures is interesting to me because I can use local wisdom in learning. I can also find out local wisdom from other areas and its relationship with chemistry studies."

R17: "While designing local wisdom-based learning, I feel confused about which type of local wisdom is suitable to be integrated into chemical materials. So that chemistry learning becomes directed and orderly".

Based on Figure 2, it can be seen that as many as more than 85% of the respondents felt happy and motivated in taking lectures on chemistry learning based on local wisdom. Respondents feel happy because it is something new to learn. Learning based on local wisdom will run smoothly if the teacher has the ability and knowledge of the sufficient values of local wisdom, so that it can develop meaningful learning for students and the objectives of education based on local wisdom are achieved (Wibowo & Gunawan, 2015). This is supported by the following response:

R13: "I am very happy because this is my first experience in finding and understanding what local wisdom is that can be integrated into the material in chemistry lessons. I became interested in applying local wisdom in lessons so that anyone who studies chemistry doesn't forget their culture."

R18: "My insight into local wisdom in Indonesia is increasing. It helped me to integrate it into chemistry studies. "

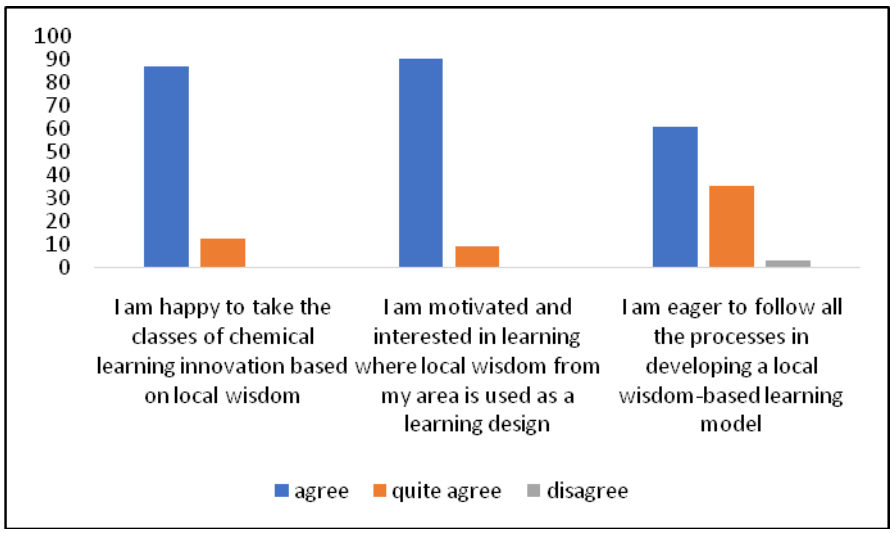


Figure 2. The results of a questionnaire about the Local Wisdom-Based Learning

The very important thing in the teaching and learning process is the expertise and ability of a teacher in managing the teaching and learning process to be more interesting, this is needed in order to increase student interest in learning (Siahaan, 2018). Meanwhile, according to research conducted by Sudiana & Surata (2010), it is revealed that aspects of local culture in learning can increase the effectiveness of the learning process and can increase student interest and motivation. Even the results of research by Febriani, Sudarmin, & Alimah (2020) reveal that the chemistry learning model based on local wisdom can improve cognitive, psychomotor, and affective abilities, as well as critical thinking. Based on the results of the questionnaire, respondents' interest in designing local wisdom-based learning was very high. This is supported by the following response:

> R02: “This course helps me to be dynamic with my friends from the region and explore the wealth in my area that can be used as material for studying Chemistry. Besides that, I could find out the regional wealth of other friends that could be integrated into chemistry lessons. This experience adds insight and builds awareness”.
>
> R11: "I am motivated to be even more active in exploring the culture in each region so that I can apply it in learning".
>
> R23: “I am interested in designing chemistry learning based on local wisdom because my insight into local wisdom in Indonesia is increasing. It helps me to integrate it into chemistry studies”.
>
> R24: “It requires creativity and knowledge of local wisdom to design this lesson. Therefore, I feel challenged to design a lesson”.
> R31: "I felt happy because the learning that is taking place is not too heavy, but it generates and increases my creativity in making a learning model based on more varied local wisdom."

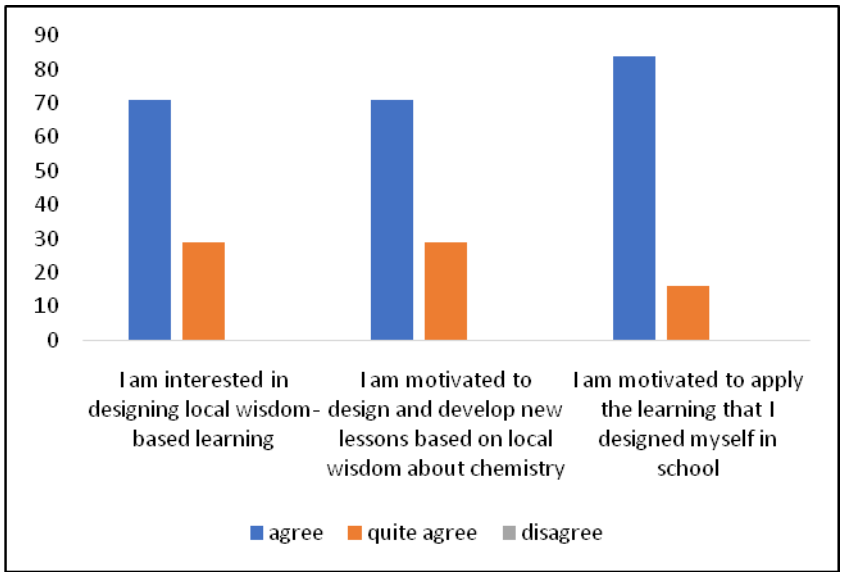


Figure 3. The results of a questionnaire about interest in designing learning

The results of the questionnaire for the aspects of designing local wisdom-based learning are shown in Figure 3. Figure 3 shows that 71% of respondents feel interested and motivated in designing local wisdom-based learning. As many as 83.9% of respondents agreed to implement the learning that had been designed by themselves when teaching in schools later. These results indicate that the respondents gave a positive response to preserving local wisdom. These results are in line with research by Ardan (2016). In his research, it shows that there is a change in the attitude of students to be more concerned about preserving local wisdom after learning to use learning tools that have been developed. Besides, student achievement has also improved significantly. The same thing was shown in the research of Pamungkas, Subali, & Lunuwih (2017).

The results showed that with the implementation of a learning model based on local wisdom, students had more opportunities to develop and hone their creative thinking. Student activeness increases with this learning. Learning based on local wisdom provides benefits, namely creating competent and dignified generations, reflecting cultural values, participating in shaping the character of the nation, contributing to creating a national identity, and preserving national culture (Subali, Sopyan, & Ellinawati, 2015).

However, some respondents experienced difficulties in designing local wisdom-based learning activities. This is because respondents are required to be able to explore local wisdom in their area, which they do not know so far. In addition, determining the type or value of local wisdom that is suitable for use on certain chemical materials is not easy. Students must be able to integrate chemical concepts with existing local wisdom values. This is supported by the following response:

> R08: “In my experience, it is rather difficult for me to find local wisdom that is suitable and suitable to be integrated into chemistry learning. Sometimes there is local wisdom which is really difficult to apply”.

In designing learning activities, I certainly faced many difficulties. I have to look for any local wisdom from several regions besides having to understand the existing chemical materials. My difficulty is determining the local wisdom that is most appropriate to be integrated into the chemical concepts I have chosen.

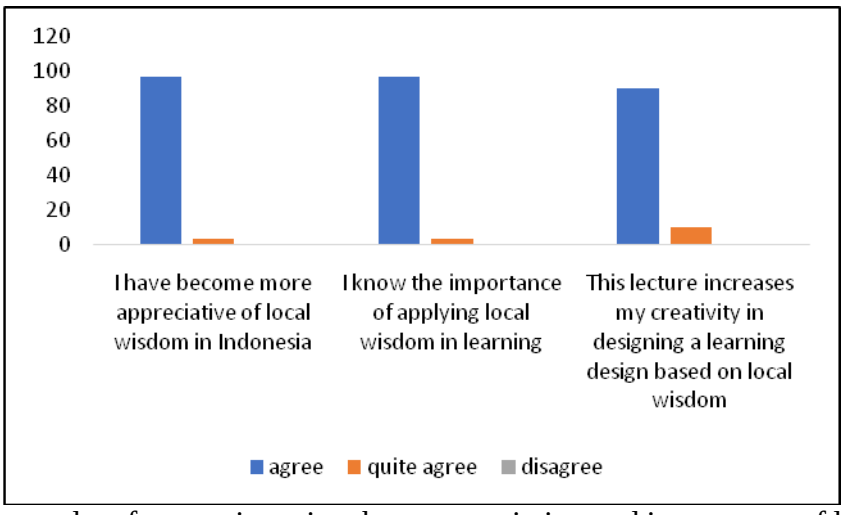


Figure 4. The results of a questionnaire about appreciation and importance of local wisdom

Based on the data shown in Figure 4, as many as 96.7% of respondents agreed with the existence of local wisdom-based learning, the respondents became increasingly appreciative of culture in Indonesia. Respondents also increasingly know how important it is to apply local wisdom in learning. This is in line with Meliono's statement (2011) that the application of education based on local wisdom is an important step that must be taken because the flow of globalization has been going very fast in the use of education, science, and technology.

Figure 5 shows that as many as 86.7% of respondents agree that learning based on local wisdom really provides them to teach at school later. The values of local wisdom that will be given will help students understand and learn every concept in chemistry so that the knowledge obtained by students is not only limited to the realm of knowledge but can also be implemented by students in the form of practice outside of school, namely in the community. The interesting thing from the data in Figure 5 is that 100% of respondents agree that the values of local wisdom really need to be introduced and instilled in students. Respondents agreed to introduce local wisdom values through learning. These results indicate that these prospective teachers have a high commitment to preserving local wisdom.

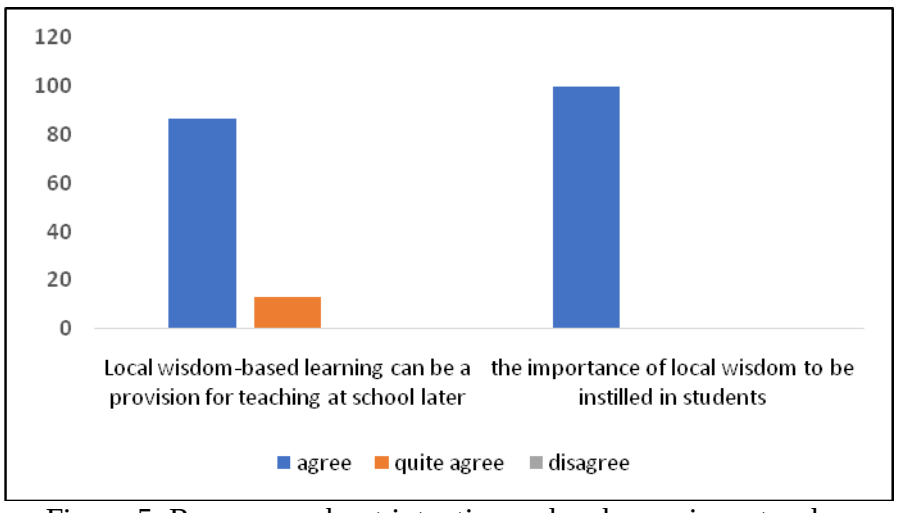


Figure 5. Responses about intentions when becoming a teacher

In addition to preserving, introducing, and cultivating local wisdom values in schools, local wisdom-based learning can also motivate students to be more aware of the importance of learning chemistry because it is linked to the environment around students so that learning is more meaningful for students. By placing wisdom in the learning process, educators, such as teachers, parents, school staff, and the community are expected to increasingly realize the importance of local wisdom-based learning as a means of culture. Teachers are expected to provide students not only with academic abilities but also to become people who love local culture and diversity.

Conclusion

Based on the results of the research described, it can be stated that a positive response from students illustrates the desire and commitment of these prospective teachers to implement local wisdom-based learning. This learning is very important to apply because it is useful for increasing knowledge and understanding as well as a medium for cultivating a sense of love for local wisdom in the region. This positive response is shown by an appreciation of their previously unknown local wisdom and the ability and creativity of students in designing local wisdom-based learning properly.

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