DESIGNING AN ANDROID-BASED QR-CODE FOR PLANT SPECIMEN AS A CONTRIBUTION TO INTEGRATED SCIENCE BIODIVERSITY MATERIALS TO IMPROVE THE SKILLS OF GRADE VII STUDENTS AT SMP NEGERI 8 PADANG

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ABSTRACT
The purpose of this community service activity is assistance in designing an Android-based QR-Code for specimens as a contribution to biodiversity material. The design of the QR-code can train students' skills in utilizing technology, especially android in studying the diversity of plants in the surrounding environment. This service team is a lecturer who teaches and is an expert in the field of plants and learning media. This is very helpful in solving partner problems. In addition, one of the results of the community service team's research is the design of an Android-based QR-code as a contribution to biodiversity material which can contribute to choosing the right learning media for biodiversity. Therefore, the training materials cover two things, namely 1) getting to know the QR-code application, 2) designing QR-codes for plant specimens. The method used in this activity is the lecture method, and demonstrations or joint practice in making Android-based QR-codes carried out by a team of lecturers at partner locations.

Keyword: QR-code, plant specimens, biodiversity.

INTRODUCTION

Teaching materials or learning materials in outline consist of knowledge, skills, and attitudes that students must learn in order to achieve predetermined competency standards. In terms of the teacher, the learning material must be taught or conveyed in learning activities. In terms of students, the teaching materials must be studied by students in order to achieve competency standards and basic competencies which will be assessed using assessment instruments arranged based on learning achievement indicators (Nurdin and Adriantoni, 2016).

Developments in the field of information and communication technology have a significant impact on improving the quality of human life. In the era of the industrial revolution 4.0 which demands efficiency, digitization and automation, it provides a golden opportunity for those who are able to apply information and communication technology in various fields. This development proves its existence as a medium for delivering messages of human hopes and desires in an effort to realize goals and overcome problems in various aspects of life without exception in the field of Education (Syahri, 2017). In the field of education, especially biology education, the potential for information technology has played an important role and is constantly undergoing modernization.This can be seen from the existence of broad access in terms of obtaining the required information easily.

Unfortunately the problems faced by lecturers in the era of globalization related to existing developments are implications for a paradigm shift regarding the education system. The new paradigm in learning in this era provides challenges that can be in the form of great opportunities or vice versa in carrying out their duties as educators according to their profession. The demand to increase professionalism in terms of mastery of knowledge and strategic management of its application became the beginning of the era we are currently facing.

Of course, as educators, we need to do our best to utilize various types of ICT-based media in optimizing the implementation of learning in class, especially learning foreign languages. One that is offered by researchers at this time is the use of QR-Code especially in foreign language learning. QR Code integration in several studies has been carried out. As has been done (Huah & Jarrett, 2014) on aspects of listening and speaking skills in Malaysia; (Mustakim, 2013) on the periodic aspects of elements at the high school level; and (Mousa & El-salam, 2016) as an alternative media for scanning learning resources at the kindergarten level. As for the use of QR Code media in the context of junior high schools in the city of Padang, especially biology learning on biodiversity material, it has not been carried out. Based on*gap* Therefore, we try to further explore the use of QR code media in biodiversity materials.

Based on the problems and evidence presented above, the servant has carried out community service (PPM) at SMP 8 Padang regarding 'Designing an Android-Based QR-Code for Plant Specimens as a Contribution to Integrated Natural Science Biodiversity Materials to Improve the Skills of Class VII Students in Middle School' Country 8 Padang'

METHODS

The method used in this activity is the lecture method and demonstrations conducted by a team of lecturers at SMP 8 Padang. There are several activities carried out, namely:

1. Planning
   a. Notification of plans for community service activities to the LPPM University PGRI West Sumatra unit and receiving assignment letters.
   b. Contact the Principal of SMP 8 Padang about plans for community service activities to be carried out by the teaching team.
   c. Dissemination of Service Activities to partner schools by inviting school principals, partner teachers and students.
   d. The preparation of the service program is based on the results of situation analysis, student analysis, material analysis and media analysis.

2. Implementation of service activities
   a. Formation and mentoring of groups of students who can overcome difficulties.b. Training on the use of Android-based QR-codes.
   c. Increase students' knowledge about the development of learning media, both IT media and alternative media.
   d. Demonstrate the use of QR-codes and Assistance in using QR-code

3. Observation and Evaluation
   Observation activities are carried out directly by the implementing team. Observations in the form of the work of participants (partner students) on the use of Android-based QR-codes. The evaluation process is carried out to find out the shortcomings and constraints in the implementation of service activities.

4. Reflection
   Reflection is carried out jointly between the team and participants (teachers and student partners). This is done to find out the entire process of implementing activities.

RESULTS AND DISCUSSION

Community service at Padang 8 Middle School was held with the support of LPPM PGRI University, West Sumatra. This service is carried out in accordance with the vision and mission of West Sumatra PGRI University. The implementation team for this community service activity provided direction or training to teachers and students in developing an Android-based QR-code at SMP 8 Padang. The following presents the findings and directions.

Table 1. Findings and Directions for Implementation of PPM

No.	Finding	Directions in Training
1.	Teachers and students have not Proficient in using technology in the manufacture of teaching materials	Provide information and training in using technology
2.	Teachers and students have not utilized the Android-based QR-code application	Provide training on usage android based QR code application
3.	Teachers and students have not mastered making Android-based QR-codes android based	Providing training on making Android-based QR-codes

Based on Table 1. it can be said that from the findings of the existing problems several steps have been taken as a solution. After the community service activities are held, it is hoped that they will be able to provide solutions and motivate teachers and students to be able to develop Android-based QR-codes. This community service produces several outcomes, including:

1. Articles published in journals
2. News articles in print media

CONCLUSION

The conclusion from the results of implementing community service activities is that it is important to provide information and training to teachers and students in utilizing technology in developing teaching materials.

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