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**Android-Learned Media Learning Media With Health Material For Students of  
Class X**

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**Abstract**

Seeing the potential of untapped learning media. Creativity of teachers to create learning media not only for solving problems, but also exploit the potential that exists. Therefore the author tries to design an Android-based program to improve learning experience of Physical Education, Sport and Health to be more interesting. Using Pre test and Post test method in trial scale. The results showed that, (1) the results of media expert and health expert validation showed 80.475% in the "excellent" category and small-scale trials showed an average of 54.114 results in pre test and 79.2 in the post test. (2) The results of data analysis on large-scale trials in 3 schools showed 52,867 results in the test and increased to 75.2754 in the post test. (3) The students' assessment on the product was 77.091% or in the "good" category and the assessment of the learning expert was 89, 5% in the category of "very good." Learning media product of Physical Education, Health and Sport in Android-based named APPJOK with focused on subject types of foods and beverages that are beneficial to the health of growth and development can be practiced to the subject of the trial.

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## INTRODUCTION

The development of technology today makes the human work easier, in recent years technology is growing in various aspects of human life. One of the most rapid technological advances in the development of communication technology.

Information and Communication Technology is part of Science and Technology (IPTEK) in general all technologies related to the collection, collection (acquisition), processing, storage, dissemination, presentation of information (Darmawan, 2011). In various fields, the development of various technologies creates constraints in the space of time and place can also be bypassed by the existence of ICT, the emergence of various jargon e, ranging from e-book, e-learning, e-laboratory, e-education, e-library where e interpreted electronics aka digital electronic technology.

People now almost all have mobile phones, the distance that used to be a barrier for someone to communicate now is not something that is difficult, this long distance communication tool is very helpful to the community communication process is not limited in space, time and place to the technology in a phone grasp progressively. Mobile phones are no longer just a means to communicate remotely or send messages, in the mobile phone there are various features or applications that can make a mobile phone like a personal assistant which then we call the smartphone a complete device as a medium of communication, social as well as entertainment.

For the development of mobile phone technology there is a platform that developed into the most widely used platform to date android. Android as the most widely used smartphone OS platform with nearly 80% of users in Indonesia and around 60% worldwide (Stat Counter Global Stats, 2016) has an important role to present oriented applications that help people to improve their performance in life. Recognized or not the penetration of this mobile device is very fast, more than the PC. These devices are in the case of easier operation than the PC.

In the scope of e-learning, learning is done using electronic media that can be replaced by m-learning where the flexibility of the user to use the use of mobile learning devices generally in Indonesia where mobile device users are very much even the type of smartphone especially among students.

This can actually be used for learning, especially learning Physical Education Sports and Health. According to Law Number 20 of 2003 the national educational system has the goal to

educate the life of the Indonesian nation and develop a complete Indonesian man who is a believer and devoted to God Almighty and virtuous noble character, possessing knowledge and skills, physical and spiritual moment, berkepribadian steady and independent and a sense of community responsibility and life.

Based on the field survey conducted by the author In 2 SMA in Semarang district that is SMA Negeri 1 Ungaran and SMA Negeri 1 Ambarawa prove that the majority of high school students have gadgets such as smartphones. Regarding the regulations at school in two high schools is allowed the use of communication tools as long as its use does not disturb teaching and learning activities, and even allowed when the use of gadgets to support learning better or interesting. But from both high school learning PJOK not yet take advantage of the potential existence of smartphones that have been owned by students, especially in learning PJOK learning media most often used only video or book media, and indeed the applications available in smartphone devices especially based on android support the current teaching and learning activities are still rarely developed.

Learning media development by utilizing cell phones prove very effective. Empowers teachers and students to be more up-to-date and innovative media available. And can direct students to optimize the use of the gadgets in the world of education. Learning media development by utilizing cell phones is making designs from existing Android application, intended for all cell phones berplatform Android. With reason, because the operating system Android is transformed into a system that is most widely used on Smartphones (Indrianto, 2017). Research development that departs from the potential will have more added value, when compared with the departed from the problem. Research that departs from the problem tends to solve the problem, but research that departs from the potential will develop the potential that there will be added value (Sugiyono, 2015). Therefore, the author tries to design android based programs to improve learning PJOK to be more interesting.

The author's decision is based on field observation where the potential of smartphone users among high school students has not been utilized to support teaching and learning activities let alone for learning PJOK. While the selection of android-based smartphone based smartphone android is the most popular operating system today besides the students are also more interested in using the gadget rather than reading books and

the nature of android easy developed by third parties facilitate various parties to develop this android-based applications.

The author tries to solve the problems that exist in the research of how the concept of learning when using the application, the concept of the application itself and the impact of the use of the application to students.

**METHODS**

According Sugiyono (2015) research and development methods can be interpreted as a scientific way to research, design, produce, and test the validity of products that have been produced. And based on the above understanding Sugiyono mengaris that 4 most important things in research development, i.e., research, design, production, and testing.

As has been exposed, methodologically. Research development has four difficulty levels: researching without testing (not making and not testing the product), testing without researching (testing the validity of existing products), researching and testing in an effort to develop existing products, and researching and testing in creating products new.

The subjects of this research are high school students of Class X located in Semarang Regency. Schools that became the product test site of SMA Negeri 1 Ungaran, SMA Negeri 1 Ambawara and SMA Islam Sudirman. The implementation of the Small Scale Test is in SMA Negeri 1 Ungaran while the Large Scale Test covers all the schools involved in the research.

Before stepping into the field test the author has done product validation. Furthermore, each test phase of the scale there are pre test and post test and assessment.

The results of the pre test and post test and overall assessment of the experts taken and obtained the final product.

**RESULTS AND DISCUSSION**

Small scale trial aims to find out and identify varPrior to the small-scale testing of the authors to validate products to health experts and media experts.

Validation is useful to know the product that the author made decent or not to advanced kethap next is the small-scale test and large-scale test, and **table 1** following the results of the validation.

**Table 1.** Result of validation

Expert	Score	Notes
Health Expert	78,6 %	Better or if possible given problem more hone student's analysis power
Media Expert	82,35 %	Considered the use of other names for apps to appear to sell when uploaded to playstore
Number of	80,475 %	Eligible for field test

The results of validation of media experts and health experts

Small-scale test conducted by the author on 20 and 27 April 2017 in the class X MIPA 4 SMA Negeri 1 Ungaran in the results of pre-test and post test compared to whether the progress of student learning outcomes after treatment with the product.

Class X MIPA 4 consists of 36 students consisting of 11 students and 25 female students at the time of pre test conducted there is 1 student who can't follow the pre test because it is following the race.

Of the 35 students who pre-tested the highest score was achieved a student named Intan with a score of 70 and the lowest value obtained by Revian Farhan with a value of 42. The result of the class X of MIPA 4 is also not too good ie 54.48 or closer to the lowest value compared the highest score.

**Table 2.** Results of pre test class X MIPA 4

Category	Value
The highest score	70
Lowest Value	42
Average value	54,48

The results of this post test are compared with the pre test results and see whether there is progress of the results after treatment with the product

**Table 3.** Post result of class X test of MIPA 4

Category	Value
Highest Value	100
Lowest Value	56
Average Value	79,2

Pre Test conducted in 3 classes in 3 schools in the interview before pre test learning healthy lifestyle has not been done by 2 schools namely SMA Negeri 1 Ungaran and SMA Islam Sudirman while SMA Negeri 1 Ambarawa has been giving health lesson but with material of Drug and HIV / AIDS and from Pre Test obtained results as follows.

**Table 4.** Comparison of Pre Test Results In 3 Schools

Name of School	Value Lowest	Value Lowest	Average Value
SMA Negeri 1 Ungaran	45,5	70	58,516
SMA Negeri 1 Ambarawa	45,5	78	58,806
SMA Islam Sudirman	17,5	61	41,279
Average			52,867

After done Pre test and treatment to student writer do post test where in post test writer will get final result which will known how progress obtained by student after get learning using APPJOK application product.

**Table 5.** Post test results in 3 schools

Name of School	Value Lowest	Value Lowest	Average Value
SMA Negeri 1 Ungaran	58	100	83,9354
SMA Negeri 1 Ambarawa	56	100	74,766
SMA Islam Sudirman	52,5	96,5	67,125
Average			75,2754

**Table 6.** Comparison of pre test and post test results

School Name	Cat-egory	Pre test	Post test	Pro-gress Student
SMA Negeri 1 Ungaran	Lowest Value	45,5	58	Yes
	Highest value	70	100	Yes
	Average	58,516	83,9354	Yes

SMA Negeri 1 Ambarawa	Lowest Value	45,5	56	Yes
	Highest value	78	100	Yes
	Average	58,806	74,766	Yes
SMA Islam Sudri-man	Lowest Value	17,5	52	Yes
	Highest value	61	96,5	Yes
	Average	41,279	67,125	Yes

After the students do post test, students assess the product with 12 aspects in it. And following the results of students' assessment of the product.

**Table 7.** Results of product assessment of students in 3 schools

School Name	Average Score	Percentage	Category
SMA Negeri 1 Ungaran	46,9	78,275%	good
SMA Negeri 1 Ambarawa	44	74%	good
SMA Islam Sudirman	47	79%	good
Average		77,091 %	good

The student's response to the product showed good result where the students in SMA Islam Sudirman showed interest in the product followed by SMA Negeri 1 Ungaran and SMA Negeri 1 Ambarawa. With a total percentage of 77.091% then the products in the student ratings are included in the good category.

The product assessment is done by the learning expert in this case the teacher from 3 schools namely Wahyu Supriyanto from SMA Negeri 1 Ungaran, Yurisa Novita from SMA Islam Sudirman and Purwanto from SMA Negeri 1 Ambarawa with the result.

**Table 8.** The results of the product assessment by the teacher

Teacher name	Total Score	Percentage	Category
Wahyu Supri-yanto, S.Pd	62	82,6%	VERY GOOD

Purwanto	69	95,8%	VERY GOOD
Yurisa Novita P. S.Pd	65	90,2%	VERY GOOD
Average		89,5%	VERY GOOD

**Prototipe Produk**

**Table 9.** Prototipe Produk

Information	Visual
Opening	APPJOK Logo
Tittle	APPJOK
Main Menu	Program Menu:  Material (Healthy Lifestyle, Nutrition / Nutrition, Disease due to Nutrition imbalance, and Balanced Nutrition, calorie table)  Problem Exercises  Nutrition Calculator  About the Program
Sub-menu Material About Healthy Lifestyle	Description and description of what is a true healthy lifestyle
Sub-menu of Material Nutrition	Description of what it means of nutrition and its benefits
Sub-menu of Material Balanced nutrition	The description of what is meant is balanced nutrition. In daily practice.
Sub-Menu Due to Nutrition Imbalance	Description of the result of nutritional imbalance from excess nutrient to malnutrition
Problem training menu	Various exercise questions accompanied by results that can be seen directly
Nutrition Calculator	Users can input and view ideal weight results of the current weight category up to daily caloric needs.
About	Application Instructions for apps

**Table 10.** Story board of APPJOK products

APPJOK display when first opened.

Menu view in APPJOK

Display the exercise menu problem

Nutrition menu display

Nutrition consultation menu view

APPJOK products are application products created using Android Studio, Adobe Illustrator, and Adobe Photoshop programs. Runs in android system with specifications:

1. Android: Ice Cream Sandwich and above
2. Memory: has more than 15 MB free space

The product has limitations and advantages ie Disadvantages: APPJOK only runs in android smartphone and offline system, the material in APPJOK is only for health materials that is the type of food that is useful for the growth of health and development.

Pros: APPJOK runs in offline system so it

does not require internet connection, APPJOK can be opened wherever and whenever without depending on server or internet connection, APPJOK has nutrition calculator feature which can calculate ideal weight, current weight category, and caloric requirement, APPJOK has practice questions that contain 5 random questions from a total of 20 questions and assessments can be seen immediately upon completion.

## CONCLUSION

Based on the results of research that has been implemented and has been listed on the results of the discussion in this thesis, it can be concluded as follows:

APPJOK products may and may be appropriate for use in the learning process. It is based on data analysis on trial I and II test obtained from expert evaluation each get an average percentage of 80,475 for Health Expert and Media Expert and Learning Expert in this case teacher in 3 School get result 89,5% . The assessment of the students got an average of 77.091%.

Learning media products PJOK Android-based APPJOK with material types of foods and beverages that are beneficial to the Health of growth and development can already be practiced to the subject of trial. This is based on the results of data analysis obtained from experts and learning experts. Based on the results of research and discussion on this thesis, it can be concluded

as follows:

Learning media PJOK Android-based APPJOK with food and beverage type materials that are beneficial to the Health of growth and development, as a new innovation in learning PJOK as well as participate in technological developments today where high school students have an average smartphone device that became one of the resources has not been fully utilized as a medium of learning by teachers.

On learning PJOK using APPJOK Android app students are enthusiastic because although students often use smartphones but the android apps used by teachers is a new medium for them.

## REFERENCES

- Darmawan, D. 2011. *Teknologi Pembelajaran*, Bandung: Remaja Rosdakarya.
- Indrianto, D., Setyawati, H., & Kusuma, D. W. Y. (2017). App Inventor2 Learning Basketball at Grade X Senior High School. *Journal of Physical Education, Health and Sport*, 4(1), 9-17.
- GS Stat Counter, Top 8 Mobile & Tablet System Operation(Indonesia/Worldwide) <http://gs.statcounter.com/#mobile+tablet-os-id-monthly-201305-201605> diakses pada 15 Juni 2016 pukul 11:00
- Sugiyono. 2015. *Metode Penelitian dan Pengembangan*, Bandung: Alfabeta Bandung.
- Undang-undang Republik Indonesia Nomor 20 Tahun 2003 Sistem Pendidikan Nasional. 08 Juli 2003.