The use of e-rubic to determine energy expenditure in physical activity

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Abstract. In this study discuss the role of google form applications on the internet in determining the amount of energy released by the body during physical activity. It can be calculated in various ways, one of the kinds is by filling out the IPAQ (International Physical Activity Questionnaire) on the google form application. This study aims to determine the amount of energy expenditure when doing physical activity for Physical Education students with uses descriptive research methods. The sample were students of Physical Education department with total 84 students with determination of the sample in this study is by purposive sampling technique. The results of using the google form application on the internet to measure energy expenditure during physical activity can provide a percentage presentation and effectively can help measuring things of the overall intensity categories found in physical activity.

1. Introduction
Physical activity that we carried out regularly is considered as an important component of a healthy lifestyle. There is a lot of scientific evidence linking physical activity regularly with a variety of physical and mental health benefits [1]. To promote a physically active lifestyle, especially among members of an inactive population, an effective intervention is needed. Evidence gathers that physical activity interventions are based on effective behaviour [2,3]. The health benefits of increasing physical activity depend on the level of initial activity. Inactive people are expected to get the most benefits from increasing their activity to the recommended level. People who have fulfilled basic recommendations also tend to gain some additional health and fitness benefits from being more physically active [4]. The measurement of physical activity that is valid and appropriate is a challenging task, because physical activity is a component that is very varied and consists of daily activities, sports and recreation, and work activities. In practice, standard questionnaires can be very helpful in documenting and analyzing physical activity levels. If someone wants to compare the level of individual activity with current recommendations on physical activity, the proposed questionnaire must ask about daily activities and formal training modes and also must allow estimates of energy expenditure [5]. Epidemiological studies have shown that maximum health benefits will be met when energy expenditure of 4–7 kcal/ kg/ d (30–50 kcal/ kg/ weight) is achieved through increased involvement in daily activities, recreational activities and sports [6].

In the era of this technological era to store data from the results of a test, it could use tools such as computers, gadgets, iPad etc. So far, we use the manual google spreadsheet technique to evaluate the number of sports players by calculating the level of energy expenditure, but this approach sometimes
results in individual errors in filling it out. Every time entering data requires a double touch on the iPad to activate cell editing capabilities, which is very boring. Now there is a google form application that is used to collect data on the results of physical activity and the user's energy expenditure. Forms made in a simple form, easy to use, require little or no instructions for completion, and require one touch rather than twice to enter data. Google forms is an easy-to-use and create system for collecting user data on a mobile device such as an iPad [7]. With the availability of the google form application, it will make it easy for someone to measure energy expenditure from their physical activities.

2. Method
This study uses a descriptive research method with a qualitative approach. The choice of this method is in accordance with the research conducted by the author that is to reveal how the picture of the results of energy expenditure in physical activity. The subjects of the study were physical education students who were contracting 84 physical science practicum subjects. The instruments in this study use the IPAQ (International Physical Activity Questionnaire) [8].

3. Results and discussion

3.1. Display

![Figure 1. Display sample.](https://goo.gl/forms/HYOt1H5Lu1WFhClF1)

The purpose of the sample study questionnaire is to see how someone describes his physical condition. On the following page the correspondent will be asked to think about him physically; for example, how
it looks, how strong, how good the correspondent is in sports, whether he is exercising regularly, whether he is physically coordinated, whether he experiences pain very often, and so on. until finally all questions are fulfilled and approved by the questionnaire fillers.

3.2. Result
The analysis results of the IPAQ (International Physical Activity Questionnaire) questionnaire data using google form and calculated with SPSS 20.

| PA_Categories | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------|-----------|---------|---------------|--------------------|
| Valid High    | 60        | 71.4    | 71.4          | 71.4               |
| Moderate      | 19        | 22.6    | 22.6          | 94.0               |
| Low           | 5         | 6.0     | 6.0           | 100.0              |
| Total         | 84        | 100.0   | 100.0         |                    |

Table 1 explain the general description of the percentage of energy expenditure when doing physical activities carried out by students within 1 week using the google form application and the results obtained are students who spend energy in physical activity with high intensity (high) as much 71.4%, students who spent energy in physical activity with moderate (moderate) intensity of 22.6% and students who spent energy in physical activity with a low intensity (low) as much as 6% of all students as many as 84 students who spent energy in physical activity in the period 1 week using the google form application.

3.3. Discussion
The main objective of this study is to describe the energy expenditure data in physical activity using the google form application within 1 week. The results obtained from the study stated that the percentage of students who spent energy in physical activity with high intensity was higher than students who released energy in activities with moderate intensity and low intensity. This can mean that the use of Google Form is very helpful for students in storing data from the energy expenditure of physical activity that has been done.

This is consistent with the results of other studies conducted, which states that google forms and google sheets have free, user-friendly, updated frequently, and robust benefits to being a viable solution for tracking library usage. Using these free programs, combined with a mobile device, has made gathering hourly gate counts a fruitful endowment yielding easily reportable statistics [9]. Found that mobile technology was easy to use and greatly simplified data collection. It confirmed the value of using mobile technology to conduct observations of study area usage, rather than relying only on statistical reports. The use of mobile devices with apps enabled by our users on a more personal, often spontaneous level [10].

From the results of the research above, all of them are very relevant and support the research that the author has done so that the opinion or research can be used as a strong support for the results of the research that the author did.

4. Conclusion
Google Form is an easy-to-use system created to collect data on the number of users on mobile devices such as the iPad. Everyone can use the google application to collect data for calculating energy expenditure in their activities. Google form has efficient data collection and manipulation, produces far fewer errors, and saves significant time, especially in evaluating results. The use of google form is not
only for storing energy expenditure data in physical activity but can also store data of all components of physical activity and various kinds of data.

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