

Application of Mobile Phone in Under Graduate Physics Laboratory



Physics
KEYWORDS :

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ABSTRACT

This paper gives an overview of use of mobile phones in Physics experiment at undergraduate study. The focus of this article is therefore on the 'mobile phone' as an experiment tool for documentation. The mobile phone can be used for documentation, scientific calculation, analyzing data and study different phenomena of sound as well as mechanics. This paper includes examples of Third Year B.Sc. Physics experiment within the framework of Gujarat University syllabus. The aims of the aspect of research are on the development of Physics experiment using mobile phones and provide 'Life Long Learning' to the learners.

Introduction:

This article gives an overview of use of mobile phone in Physics experiment for the documentation of observation tables, scientific calculation and analyzing data. Mobile phones can be used to search for experiment, exchange data, communicates lesson content, save and share experiment.

Traditional Physics laboratory uses manual methods for documentation such as writing observation tables, calculation and drawing graph on paper and obtaining result. This traditional method for approaching Physics laboratory experiment is more tedious and time consuming as it require manually documentation, analyzing data and getting record. Whereas today's mobile phone is configured with fast processor, high megapixel camera and ram, so that it can be included in Physics laboratory experiment for recording result, plotting graph and calculation saving time of student and gives sufficient time to perform experiment. As most of the mobile phones are with wi-fi, recorded results and experiment set-up and observation can be stored for the future learning.

The mobile phone as a mean of Documentation:

The different function of mobile phone can be used for documentation in Physics laboratory. For example, dictation function of mobile phone enables student to record measurement problem during the experiment which can later be integrated in the analysis of the experiment. The camera function of everyday mobile phone records the information written on the observation table during experiment in a time saving manner (FIGURE.1 & 3)



FIG.1 PHOTOGRAPH OF EXPERIMENT CIRCUIT

FIG.2 PHOTOGRAPH OF EXPERIMENT SET UP

FIG.3 PHOTOGRAPH OF OBSERVATION TABLE

Moreover photograph of experiment set-up can be captured for latter on learning at home. (FIGURE.2) This particular approach is very useful in signal laboratory experiment. More often in Physics laboratory experiment little time remain to record the observation.

The video function of mobile phone can be used to record procedure and method to conduct experiment to analyze experiment and preparation as much time. The recorded video stream can be analyzed using simulation software

(Tracker) to study the motion. The graph of observation can be easily plotted using mobile phone apps and result is derived using scientific calculator apps.

Summary:

With many negative effects of mobile phones on everyday life, mobile phone can be used to enhance Physics in college in many ways e.g. to obtain and record information, to document experiment, observation and set-up to analyze data and calculate result. In order to increase the use of mobile phone in Physics laboratory experiment, use of mobile phone in curriculum should be included for documentation of experiment. On the other end it is necessary to investigate the impact of mobile in Physics laboratory experiment.

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