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## Effect Of Social Media Enabled Learning In Enhancing Achievement In Physics At Higher Secondary Level

### Abstract

*The technology is advancing day-by-day. The advent of new millennia has brought tremendous changes in all the fields. The spread of COVID-19 has drastically affected human lives as well as the global economy. The after-effects of this deadly disease have reached the education sector too. Technical advancement urges for experimenting new technology in the field of learning and teaching pedagogy, to help overcome the present crisis. Social Media Enabled Learning (SMEL) provides a massive opportunity in the education sector. This study deals with the application of WhatsApp—a user friendly social media platform, as an educational tool, to provide learning experiences and assess the achievement of students in physics at the higher secondary level. Keywords: Social media, Social media enabled learning.*

### Introduction

The school curriculum was always subject to a change due to the developments occurring in the technological methods. Usual conventional strategies during this modern era is not completely enough in imparting the concepts of studies. Social media is one technological discovery in the last decade which has affected all aspects of human life. This can be attributed to user friendliness and ease of access of these social media technologies. The effect of social media is also evident in the education system. Researchers around the world are interested in exploring the promises and potentialities that these social media technologies can bring in the education system. Social media can be considered as an open source of information and knowledge sharing platform. The educators can leverage the potential of social media technologies to enhance the overall teaching-learning process.

This study focusses on social media enabled learning using WhatsApp, a platform that provides students access to useful

information and connects them with learning groups that make the overall learning process more interesting and engaging. It provides a social channel for collaborating, networking, sharing and generating knowledge and content, something which is of great value in the context of education.

### Definitions of keywords

#### SOCIAL MEDIA

These refer to the computer-mediated technologies that allow the creation and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks. Social media uses both web-based and mobile technologies on smartphones and tablet computers to create highly interactive platforms through which individuals, communities and organisations can share, co-create, discuss and modify user-generated content or pre-made content posted online.

### **Social Media Enabled Learning (Smel)**

This is an instructional strategy in which learner learns with the help of social media. It helps the learners to achieve the desired instructional objectives at their own pace and abilities. In the present study, social media enabled learning strategy for higher secondary education has been developed with self-instructional modules administered through WhatsApp.

### **Significance of the study**

With the advent of internet technology, social media has become an integral part of every student's life. With the help of social networks, it is easier and convenient to exchange information, communicate with each other and stay connected. The teachers and students are, thus, virtually connected with the help of the social media platform. This strategy is highly effective when students are not in a position to attend the schools regularly due to pandemic or disasters.

In this study, a platform is created for the students through WhatsApp groups which empower them with opportunities to improve their leaning process. This can make learning more interactive and inclusive. With the aid of Social Media Enabled Learning (SMEL), the achievement of students in physics at higher secondary level is assessed.

WhatsApp is a social media application that emerged among the technological platforms which is user friendly and provides transferring of media even low network coverage area. It paves way for a new age learning which is personalized and customized to suit the need of every learner, thereby improving collaboration and active learning.

### **Objectives**

1. To develop social media enabled learning strategies to enhance achievement in physics at the higher secondary level
2. To compare the effect of social media enabled learning and activity-based

learning in physics at the higher secondary level

### **Hypotheses**

1. There is no significant difference between mean pre-test achievement scores of the experimental and control groups in physics at the higher secondary level.
2. There is no significant difference between the mean post-test achievement scores of the experimental and control groups in physics at the higher secondary level.

### **Methodology**

The investigator administered an experimental study to. A pre-test post-test parallel group design is adopted for the study.

### **Population and sample**

As per the experimental design, two schools were selected from Kannur district of Kerala through a random sampling method. Each school had a control group and an experimental group consisting of 60 students each. The criteria of selection for both the control and experimental groups from both schools was done using the cluster sampling method. The sample of the research study thus is 240 students where 120 of them are from each school.

### **Tools used**

- A social media enabled learning module was developed and administered among the experimental groups under study. The students in the control group were taught by activity-based approach of learning.
- Achievement test (pre-test) in physics was conducted on both the control and experimental groups before the experiment.
- Achievement test (post-test) in physics was conducted on both the control and experimental groups after the experiment.

## Implementation of SMEL module

The investigator designed the study module in such a way that the concepts can be taught in an interesting environment and that students are able to retain the materials of study with much ease. The topic was finalised based on the conclusions obtained from the discussions with the higher secondary physics teachers as well as Class XI students not included in the sample to identify the difficulty level. The investigator selected WhatsApp as the platform to impart instruction of the contents. The selected two units have 24 hours of instruction considering that total hour of instruction of the two units have been divided into modules for a duration of 8 weeks.

The prerequisite in implementing SMEL is mainly a smartphone with adequate storage space for files, which is shared through the WhatsApp social media platform. An active internet connection is another important prerequisite to be considered when planning for the implementation of SMEL.

The modules are presented with self-made introduction videos, class videos, notes, texts, gifs, audios, simulations, links, examples, animations, model questions, problems, assignments, and other OER materials. In traditional training, the greatest effort is in the delivery of training sessions while in SMEL, it is in the design and development of structured materials which must be self-contained and able to be repeated multiple times without making ongoing adjustments.

A collaborative and combined teaching method was adopted for SMEL implementation where more than one teacher was involved in teaching. The learner can also contribute to the learning process then and there. There is a scope for discussion and clarification of doubts by teachers as well as a team of peers. This gives a learner the motivation to engage in the learning process. The content has been split into small modules and self-evaluation questions are provided at the end with immediate reinforcement. The backup of the content helped the learner to study at

their own pace. Each student can take their own time to study which is not practically possible in conventional learning.

The SMEL module can be used for effective classroom interaction and it is a constructivist tool to promote knowledge enrichment, self-study and skill development for students learning the science curriculum.

## Statistical techniques used

Mean, standard deviation and t-test were used to conduct this study.

## Analysis of Data

**Table 1:** Comparison of Pretest Scores of Achievement in Physics between Experimental and Control Groups

Pretest Scores	N	Mean	S.D.	t-Value	p-Value
Control group	120	34.70	6.62	0.010	Not significant
Experimental group	120	34.71	6.58		

**Table 2:** Comparison of Post-test Scores of Achievement in Physics between Experimental and Control Groups

Post-test Scores	N	Mean	S.D.	t-Value	p-Value
Control group	120	25.12	8.20	7.148*	0.01
Experimental group	120	33.50	9.89		

\*significant at 0.01 level

## Results and Discussion

The pre-test scores of the achievement in physics for the total sample were compared for differences between the experimental and control groups, as presented in Table

1. The average pre-test score of achievement in physics of the control and experimental groups are 34.70 and 34.71 with standard deviation 6.62 and 6.58 respectively. The calculated t-value is found to be 0.010, which is less than 1.96 at 0.05 levels of significance. This shows that there is no significant difference between the pre-test scores of students in the achievement in physics. It means that the two groups did not differ significantly in respect of the initial academic achievement of the students.

Hence, it can be concluded that the experimental group and control group are more or less equal with respect to the level of achievement in physics before the experiment. The students belonged to a homogeneous group based on the achievement scores of both the experimental and control groups.

Table 2 shows the post-test scores of the achievement in physics for both the control and experimental groups. The average post-test score of the control group was 25.12 and that of the experimental group was 33.50. Also, the standard deviation in the post-test scores of the control and experimental groups was 8.20 and 9.89 respectively. The calculated t-value is 7.148 which is greater than 2.58 at 0.01 level of significance. It shows that there is a significant difference between the mean post-test achievement scores of experimental and control groups in physics at the higher secondary level. Hence, second hypothesis is rejected. The results revealed that there is an enhanced achievement in physics in case of students taught using social media enabled learning than that of activity-based approach of learning.

### **Educational implications**

The present study can be concluded to state that SMEL is an effective tool in the development of scientific skills and learning concepts more interactively. It can be effectively used as a tool at the time of pandemic or in other situations of grave crisis when learners are forced to be kept

outside the campus. The instructional strategies used as part of SMEL should be included in the curriculum which thereby can enhance the learning capabilities of the students. SMEL strategies are equally good for teaching and learning of other subjects at the higher secondary level. The teachers should acquire necessary training in order to fully deliver the school curriculum with the aid of social media enabled learning strategies.

### **Delimitation of the study**

Though the researcher has made every attempt to make the study imperative and comprehensive, it has certain limitations. The study was confined to two higher secondary schools from the Kannur district. It was limited to a sample of 120 higher secondary XI students. As modules were developed in English, the study was confined to English medium students. However, subject to constraints, an attempt has been made by the researcher to make the study as reliable as possible.

### **Conclusion**

Educational methods have a positive impact due to random growth of technological advancements. Social media is the recent trend which has become the most common method and way of communication and exchange of ideas among the mass of people today. This new method trending among people have always put in discussion among researchers and their possibilities and impact in the field of education and learning. Social media enabled learning reframes the role of content in learning and refocuses the instructional design process away from the techno structure towards a focus on social interaction. The social media can be used as a tool for learning which inculcates a wide range of study interests among the students.

Social media enabled learning through WhatsApp create massive interconnection between students as well as teachers and create a virtual platform, for the exchange

of knowledge and interactive learning. The active participation of the students using student-centred teaching approach as well as collaborative method is the major highlight of WhatsApp learning. Teachers acting as an active moderator and instructor inside the WhatsApp groups can provide magnificent results in personalized

educational advancements. Social media involves the creation of digital habitats that will both define the focus on learning rather than content or technology. Thus integrating social media enabled learning with higher education can bring about fruitful changes in the learning curriculum.

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