

IMPACT OF POWER POINT PRESENTATION ON THE DEVELOPMENT OF COGNITIVE SKILLS IN PHYSICS

Research
Paper

ABSTRACT

This paper focuses on the impact of power point presentation in development of cognitive skills in Physics in terms of knowledge, comprehension and application among the selected tenth standard students. The results show that the power point presentation fared better in students' application skill development in the selected content in Physics.

INTRODUCTION

Power point is a part of Microsoft Office. It is a wonderful tool for learning. The teacher can include pictures, charts, graphs, animations and even music in their presentation. Physics is one of the natural sciences. It applies scientific methodology to understand the most fundamental principles of nature and how they interact. The new ideas in Physics often resonate with other sciences. Teaching Physics at the school level often offers not only the opportunity to work with the younger generation, but challenges as well. Many concepts in Physics can not be comprehended easily by the school students because of the complexity of the logical organization of the concepts included in the courses. The teacher has to explain the concepts effectively and develop the learners' cognitive skills which include those objectives that deal with recall or recognition of the learnt materials and the development of intellectual abilities and skills. A larger portion of the objectives of school education covers cognitive skills.

Nowadays, it is very difficult to develop cognitive skills in Physics through the lecture method in the overcrowded heterogeneous class room climate. The lecture method is not enough to cater to the needs of all the students sitting in the class. The average and below average students often find it difficult to understand the subject matter. In such an environment, it becomes necessary to emphasise certain innovative instructional strategies inside the classroom. Therefore, the present study was undertaken with a view to find out the impact of power point presentations in the development of cognitive skills in Physics. The investigator considered the skills such as Knowledge, Comprehension and Application as cognitive skills in the present study. Power point presentation was used as a supporting strategy along with the lecture method.

METHODOLOGY

The researcher adopted the Quasi Experimental Design in the present study. Lecture Method (LM) and Lecture Method with Power Point Presentation (LMPP) were used for the control group and the experimental group respectively. The investigator developed and used a power point presentation on "Refraction of Light" for the present study. It is a unit in the tenth standard Physics syllabus prescribed by the Directorate of Secondary Education, Tamilnadu. The Criterion Referenced Test (CRT) was developed in the selected content unit and was used for pre-test and post-test assessment.

OBJECTIVES

1. To assess the cognitive skills such as Knowledge, Comprehension and Application in Physics among the students of LM and LMPP groups at the entry level.
2. To find out the difference in gain in cognitive skills in Physics among the students in LM and LMPP groups.
3. To study the influence of intervening variable (sex) on development of cognitive skills in Physics among the students in LM and LMPP groups.

HYPOTHESES

1. There will be a significant mean score difference in cognitive skills in Physics between LM and LMPP group at the entry level.

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2. There will be a significant mean score difference in gain in cognitive skills in Physics between LM and LMPP groups.
3. There will be a significant mean score difference in gain in cognitive skills in Physics between boys and girls in LM and LMPP groups.

SAMPLE

The investigator undertook the experimental study on 160 tenth standard students of two state board schools in Salem district. The identified students were divided into two groups for experimentation.

RESULTS AND FINDINGS

The obtained data were analysed using t-test. The results are given below:

Table 1

ENTRY LEVEL OF COGNITIVE SKILLS BETWEEN LM AND LMPP GROUPS

Method	N	Mean Score	SD	t- value	Level of significance
LM	80	8.33	8.55	1.01	NS*
LMPP	80	9.81	9.96		

NS - Not Significant at 0.05 level

Table-1 indicates that there is no significant difference in cognitive skills in Physics at the entry level between two groups. The result proved that the students of the two groups are homogeneous at the entry level. The cognitive skills acquired earlier are the same among the students of two methods. So, the hypothesis No.1 is rejected.

Table-2 shows that there is a mean gain score difference in cognitive skills in Physics between LM and LMPP groups. The mean gain score difference in Knowledge and Comprehension between LM and LMPP group is not statistically significant at 0.05 level whereas it is statistically significant in Application. So, hypothesis no. 2 is partially rejected.

Table 2
DIFFERENCE IN GAIN IN COGNITIVE SKILLS IN PHYSICS BETWEEN LM AND LMPP GROUPS

Cognitive skills	Method	N	Mean gain score	Difference in mean gain score	SD	t-value	Level of significance
Knowledge	LM	80	2.15	0.35	2.74	0.76	NS
	LMPP	80	2.50		3.03		
Comprehension	LM	80	1.37	0.43	1.18	1.48	NS
	LMPP	80	1.80		2.29		
Application	LM	80	1.08	0.59	1.41	2.18	Significant (0.05 level)
	LMPP	80	1.67		1.95		

Table 3

DIFFERENCE IN GAIN IN COGNITIVE SKILLS IN PHYSICS BETWEEN BOYS AND GIRLS IN LM AND LMPP GROUPS

Method	Sex	N	Mean gain score	Difference in mean gain score	SD	t- value	Level of significance
LM	Boys	40	4.7	0.2	5.05	0.18	NS
	Girls	40	4.5		4.89		
LMPP	Boys	40	6.5	1.1	6.72	0.79	NS
	Girls	40	5.4		5.64		

From table 3, it is clear that the difference in gain in cognitive skills in Physics between the Boys and Girls of LM and LMPP groups is not statistically significant at 0.05 level. Hence hypothesis no.3 is rejected. It is indicated that the sex variable does not influence gain in cognitive skills in Physics.

CONCLUSION

1. It is concluded from the findings that the LMPP method helped the tenth standard students develop their application skills in Physics.
2. The power point presentation on the selected content unit in Physics motivated the students to develop their cognitive skills. So, it can be definitely employed as a supporting strategy in the teaching-learning process.
3. The present study recommends conducting training programme on power point presentation for school teachers. It is helpful for them to use power point presentations effectively.

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