



ROLE OF SELF - LEARNING MODULES IN CHEMISTRY AT THE SECONDARY LEVEL.

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ABSTRACT

Necessity is the mother of invention. Modern technology becomes a necessary tool for learning. Self-learning modules are a popular option for providing secondary education. Self-directed learning enables the teacher and the student to set their own learning style, and there's the added flexibility of setting a schedule that fits everyone's agenda. As a result, using Self-learning modules allows for better studies, so there's no need to give up any learning goals. The modern students prefer to use technology for effective learning. Thus in this study the researcher has taken a topic on "Role of self-learning modules in chemistry at the secondary level". The sample of the study was 40 students of ninth standard from Sri Ramakrishna Vivekananda Higher Secondary School, Thirupunavalasal. The reliability of the Achievement scale was calculated as 0.82. The results indicated that the learning chemistry through self-learning module at the secondary level is found to be effective.

KEY WORDS: Self-Learning Modules, Low Achievers, Chemistry, Secondary School.

INTRODUCTION

The concept of traditional education has changed radically within the last couple of years. Being physically present in a classroom isn't the only learning option anymore with the development of the internet and new technologies. Nowadays, students have the ability to access the quality education. We are now entering a new era - the revolution of Self learning. So we want to upgrade traditional learning methods to modern learning method. Self-learning module is one of the modern learning methods. Self learning will increase the achievement with the self paced learning. Achievement is an important index, which determines success in the life of adolescents. It is one of the most essential purposes of the educational process. Thus, Achievement of a child is assessed by the teachers in the educational progress with one's

intelligence, attainment, attitude and interest. In the words of Crow and Crow (1969) Achievement is an "extent to which learner profiting from instructions in a given area of learning".

NEED AND SIGNIFICANCE OF THE STUDY

Self directed learning is the greatest revolution which took place in the field of learning and teaching methods during the recent times. Although, traditional learning includes field illustrations and practical acquisition of knowledge, the cost of them is really very high. Traditional education is more limited when it comes to educational formats. The curriculum of the chemistry learning patterns makes learning restricted to students especially low achievers. Also the students are not really given a choice to study the chemistry. For these reasons, learning chemistry through self-learning module is a better way to students which offer them a wide variety of animations, picture and videos from which they could select and learn the subject they prefer.

The whole education system spins in and around students' achievement in their education at the school level. The learning of students at schools level is depending upon different psychological, physical, economic, cultural, social factors and socioeconomic status (Chandra and azimuddin 2013). Learning sciences becomes more important not only for the wellbeing of the individual but also for the society as a whole (Odubunmi 2006). Thus, learning achievement is a key element of the core curriculum of basic education. Teachers are required to be innovative and they need to improve their professional knowledge and fulfill the expected competencies among students, with special focus on chemistry subject.

OBJECTIVES OF THE STUDY

1. Determine the effectiveness of self-learning modules and achievement in chemistry at the secondary level.
2. Determine the significance of the difference between low achievers in the control group's pre-test and post-test mean achievement scores.
3. Determine whether there is any significant difference between low achievers in the experimental group's pre-test and post-test mean achievement scores.
4. Determine whether there is any significant difference between the pre-test and post-test mean scores of the experimental group's attitude toward learning chemistry at the secondary level via self-learning module.

TITLE OF THE STUDY

The title of the current study is "ROLE OF SELF-LEARNING MODULES IN CHEMISTRY AT THE SECONDARY LEVEL."

HYPOTHESES OF THE STUDY

1. Learning chemistry via self-learning module at the secondary level is ineffective.
2. There is no significant difference between low achievers in the Control group's pre and post test mean achievement scores.
3. There is no significant difference between low achievers in the experimental group's pre and post test mean achievement scores.
4. In the experimental group, there is no significant difference in the pre-test and post-test mean scores of the attitude toward learning chemistry at the secondary level via self learning module.

SAMPLE OF THE STUDY

The present study constructed by using use of a pre-test, post-test and control group design. Purposive sampling technique was used to select 40 ninth grade students from Sri Ramakrishna Vivekananda Higher Secondary School, Thirupunavasal, Pudukkottai district, Tamil Nadu, India.

RESEARCH TOOL

1. Achievement Scale developed and validated by the investigator.
2. Attitude towards self learning module scale developed and validated by the investigator.

ANALYSIS AND INTERPRETATION OF DATA

HYPOTHESIS-1

Learning chemistry via self learning module at the secondary level is ineffective.

Variables	Test	N	Mean	Mean Difference	SD
EG (Learning through SLM)	Pre-test	20	22.40	16.35	5.74
	Post-test	20	38.75		6.14
CG (Traditional Method)	Pre-test	20	21.35	2.95	5.51
	Post-test	20	24.30		6.53

The table clearly shows that the mean achievement score of the post-test given to the experimental group's learning through self learning module is 38.75, which is higher than the control group's 24.30 given to secondary school students using the traditional method. Furthermore, the mean difference between the pre-test and post-test for the experimental group is 16.35, whereas it is only 2.95

for the control group. So it is concluded that learning chemistry through self learning module and achievement at the secondary level is more effective when compared to Traditional method.

HYPOTHESIS-2

There is no significant difference between low achievers in the Control group's pre and post test mean achievement scores.

Test	No of students	Mean	S.D	Mean difference	't' value	Degrees of freedom	Level of significance (0.01 level)
CGPRT	20	15.45	1.52	2.29	1.59	10	Not significant
CGPOT	20	17.74	1.57				

The traditional method yields a mean of 15.45 with an SD of 1.52 for low achievers in the control group's pre-test scores. The traditional method yields a mean of 17.74 with an SD of 1.57 for low achievers in the post-test scores of the control group. At a 1% level of significance, the mean difference of 2.29 is found to be non-significant for the 't' value of 1.59 for 10 degrees of freedom. As a result, the hypothesis is accepted. So it is concluded that there is no significant difference between low achievers in pre test and post test mean achievement scores of the control group.

HYPOTHESIS-3

There is no significant difference between low achievers in the experimental group's pre and post test mean achievement scores.

Test	No. of students	Mean	S.D	Mean difference	't' value	Degrees of freedom	Level of significance (0.01 level)
EGPRT	20	14.25	1.9	17	13.68	10	Significant
EGPOT	20	31.25	2.95				

The traditional method yields a mean of 14.25 with an SD of 1.9 for low achievers in the experimental group's pre-test scores. The mean of low achievers in the post-test scores of the experimental group learning via self-learning module is 31.25, with a standard deviation of 2.95. At a 1% level of significance, the mean difference 17 is found to be significant for the 't' value 13.68 for 10 degrees of freedom. As a result, the hypothesis is rejected. So it is concluded that there is a significant difference between low achievers in pre test and post test mean achievement scores of the experimental group.

HYPOTHESIS-4

In the experimental group, there is no significant difference in the pre-test and post-test mean scores of the attitude toward learning chemistry at the secondary level via self-learning module.

Test	No. of students	Mean	S.D	Mean difference	't' value	Degrees of freedom	Level of significance (0.01 level)
PRT	20	65	10.25	14	3.90	37	Significant
POT	20	79	13.72				

The mean of the experimental group's attitude scores in the pre-test towards learning chemistry via self-learning module is 65, with an SD of 10.25. The mean of the attitude scores in the post-test of the experimental group learning via self-learning module is 79, with a standard deviation of 13.72. At a 1% level of significance, the mean difference 14 is found to be significant for the 't' value 3.90 for 37 degrees of freedom. As a result, the hypothesis is rejected. So it is concluded that there is a significant difference between the pre-test and post-test mean scores of the attitude towards learning chemistry at the secondary level through self-learning module in the experimental group.

CONCLUSION

The present study clearly reveals that the role of self-learning module and achievement in chemistry at the secondary level is good. This study implies that teachers and parents should pay special attention to encourage and motivate students to develop a good study habit and increase the adsorption of information received from modern learning methods. Consequently, it will improve their self-learning in chemistry.

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