

# GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES

## EFFECT OF TYPE OF KNOWLEDGE AND OPPLICATION BASED HOMEWORK ON ACHIEVEMENT IN SCIENCE OF ELEMENTARY SCHOOL STUDENTS

Rajwinder Kaur\*

\*Assistant Professor, Khalsa College of Education, Amritsar

---

### ABSTRACT

The advancement of Science and technology has made our Social system more and more complex, under such circumstances, proper education must be provided to the students for higher achievement means the amount of the knowledge gamed by the students to work hard and Learn more, it helps the teacher to know whether their teaching methods are effective or not and help them in bringing improvement accordingly. Homework is a basic ingredient for high achievement the investigator conducted the present study on effect of type of knowledge and application based homework on achievement in science of elementary school students.

---

### I. INTRODUCTION

#### Achievement

Achievement refers to what a person has acquired or achieved after the specific training or instruction has been imparted. Generally, achievement refers to successful reaching of a goal, used particularly to refers to real life successes, when evaluating a person's life. Achievement mean knowledge attained and skilled developed in the school subject usually designated by test score or by marks assigned by teacher. An achievement is the accomplishment or acquired proficiency in the performance of an individual in a given skill or body of knowledge.

### II. HOME WORK

Home work is one such important factor which influences the academic achievement of the students. Home work is the work to be done at home out of school hours. Home work makes a useful contribution to child's Success.

Homework mean to increase the knowledge and improve the abilities and skill of the students. Home work may be designed to reinforce what student have already learned, prepare them for upcoming (complex or difficult) Lessons, extend what they know by applying it to new situation, or to integrate their abilities by applying different skills to a single task. Home work also provide an opportunity for parent to participate in their children education.

#### Knowledge Based Homework

This is the type of homework which is based on testing the knowledge aspect. It check the knowledge of the students.

#### Application based homework

This is the type of homework which is based on testing applicability aspects.

### III. REVIEW OF RELATED LITERATURE

Related studies are the basis on which the structure of further study is laid. Some of important studies consulted in Present research work are conducted by Cooper et al. (1948), Nelson et. al; (1998), Despande and Kumber (1984), Despande, S.(1986), Nelson, et.al., (1998), Jianzhong Corne J.X. (2006), Brebt T. M (2010),

Cooper and Valentine (2001), Bempechat (2004), Kenneth A.K. (2009), All these Study have provided useful guideline to the investigator in order to carry her research work in effective manner.

#### IV. JUSTIFICATION OF THE PROBLEM

Home work is an important part of the schoolwork and is a reinforcement of what the students have learned in school. This extra practice in the form of Homework is helpful for students for improving their achievement. When homework is not given to student they will not revise the concepts learnt in class and may result in forgetting of all the concepts learned in the class.

Homework help the students to revise the class work at home for having better understanding of the concept learnt in the class.

Present era is an era of Science & technology. So, Science subject has taken utmost important in the school curriculum to improve upon the achievement of students in science subject. So, teacher should give them homework. In the present study three types of homework based on knowledge, Application and skills are taken in consideration. All these type of homework will have different effect on the achievement of the student.

As homework is considered as an important aspect of school learning. Uptill now, no research work has been done to study the relationship between knowledge based and application based homework and achievement of students. So their is a need to work on this crucial area to know the effect of homework on student's achievement in science subject.

#### V. STATEMENT OF THE PROBLEM

Effect of knowledge based and application based homework on achievement in science of elementary school students.

#### VI. DEFINITIONS OF TERMS

##### **Home Work**

Home work is the school assignment to be completed out of regular school hours at the residence of pupils for the present research work, homework in science is divided into three types i.e. knowledge based homework, skill based homework, application based homework.

##### ***Knowledge based homework***

This is the type of homework which is based on testing the knowledge aspect. It checks the knowledge of the students.

##### ***Application based homework***

This is the type of homework which is based on testing applicability aspect. e.g. which type of mirror is used in vehicles and why.

#### VII. DELIMITATION ON THE PROBLEMS

The present study is delimited to the V<sup>th</sup> grade school students of Amritsar city and is further delimited to the student's achievement in the subject of Science only.

#### VIII. OBJECTIVES

1. To study the effect of knowledge based homework on achievement of students in science.
2. To study the effect of application based homework on achievement of students in science.
3. To study the conjoint effect of knowledge and application based homework on achievement of students in science.

**IX. HYPOTHESES**

1. There is no significant effect of knowledge based homework on achievement of students in science.
2. There is no significant effect of application based homework on achievement of students in science.
3. There is no significant conjoint effect of knowledge and application based homework on achievement of students in science.

**X. METHOD AND PROCEDURE**

The present study was conducted in three steps

1. **First stage (Equating the groups):** Involves the administration of following test.
  - General test of intelligence to equate both the groups
  - A pre-test based on two type of homework in science was conducted on both experimental and control group to equate both the groups before treatment. After this they were assigned experimental and control group randomly.
2. **Second stage (treatment stage):** Experimenter made schedule of teaching to teach both the groups. Experimental group was given three type of homework daily and controlled group was not given any home work.
3. **Third stage (post test stage):** After given treatment the post test based on two types of homework prepared by experimenter was conducted to know the difference between the achievement of experimental and control group.

**Research Design**

The present investigation falls in the domain of experimental research as it tend to study the effect of knowledge based and application based on achievement in science of elementary school students. Experimenter used parallel group procedure.

**Sample**

Sample was selected randomly. It consisted of 150 students of 5 grade of government school of Amritsar. Out of which 75 were boys and 75 were girls.

**Tools**

Following test will be used for the measurement of different constructs.

1. Raven's standard Progressive Matrices
2. Pre test- was prepared by experimenter to test the initial achievement of students in science (for 3 topics). The duration of the test was of 30 minutes.
3. Post test-Post test was prepared by the experimenter to know the achievement of experimental and control group after given treatment of three types of home work.

**Statistical Techniques To Be Used:-**

The following statistical techniques are employed to analyse the data obtain from the experiment in order to test the hypothesis

- (i) Descriptive Statistics techniques. Such as measure of central Tendency, Standard deviation
- (ii) Inferential Statistics
  - 't'-ratio were calculated to find out the:
    1. Significance of difference between mean achievement score of both the groups for different type of home work.
    2. Significance of difference between mean achievement score of the boys and girls for different type of home work.
    3. ANOVA 2x3 factorial design was used to study the effect of types of home work (Independent variable) on achievement oif students (dependent variable).
- (iii) Graphical representation are also used.

## XI. FINDINGS AND CONCLUSION

As the research worker comes to the conclusion of the experimentation, he should review carefully the evidence for and against each hypothesis. For this purpose the experimenter has tried to discuss the results of this study. Hypothesis wise discussion of the results has been undertaken to arrive at some conclusions.

## XII. HYPOTHESES WISE DISCUSSION OF FINDINGS

### HYPOTHESIS I

First hypothesis stated, “There is no significant effect of knowledge based homework on achievement of students in science.

From table 4.1 It is found that mean achievement scores of experimental and controlled group were 2.53 and 0.78 and standard deviation is .769 and .844 and standard error .119 and ‘t’ value i.e.  $t=14.705$  was found to be significant at 0.05 level.

From the above interpretation of results, It was found that the mean achievement of the experimental group were significantly higher than that of controlled group and significant difference exist between the means gain scores of experimental and controlled group.

Table 4.1 also revealed that mean gain scores were in favour of experimental group.

It means that the students who have the treatment of knowledge based homework showed better performance than the students given no homework.

Thus, hypothesis namely “There is no significant effect of knowledge based homework on achievement of students in science is not accepted.

Similar results have also been reported by Bempechat (2004) through his study in which he has also observed the effect of homework on the elementary school students.

### HYPOTHESIS-II

Second hypothesis stated, “There is no significant effect of application based homework on achievement of students in science.

From table 4.2 It is found that mean achievement scores of experimental and controlled group were 2.04 and 1.36 and standard deviation 1.470 and .914 and standard error .195 and ‘t’ value ( $t=3.487$ ) was found to be significant at .05 level.

From the above interpretation of results, It was found that the mean achievement of experimental group were significantly higher than that of controlled group and significant difference exist between the mean achievement scores of experimental and controlled group.

Table 4.1 also revealed that mean gain scores were in favour of experimental group. It mean that the students who have the treatment of application based homework showed better performance than the students given no homework.

Similar result have also been reported by Small, Haltan & Davis (1967) and Haven (1981).

### HYPOTHESIS-V

Fifth hypothesis stated that there is no significant effect of knowledge and application based homework on achievement of student in science.

From table 4.5 It is observed that F value for difference between the achievement of group A and B. is  $F = 19.448$  which is significant at 0.05 level and F value of different type homework is 56.748 which significant at .05 level and F-Value for interaction of group A X B is 14.623 which is also significant at .05 level. It revealed that knowledge based and application based had significant effect on Achievement of students of experimental group when they are treated with different type of homework.

Hence, hypothesis V namely “There is no significant effect of knowledge and application based homework on achievement of student in science was not accepted.

Similar results has been reported by cooper and valentine (2001)

### XIII. CONCLUSION

1. Knowledge based homework has positive effect on the achievement of students of Science of Elementary School .
2. Application based homework has positive effect on the achievement of students of Science of Elementary School.
3. Both two type of home type of Homework have positive effect on the achievement of students of Science of Elementary School.
4. The effect of Home-work is more on the achievement girl as compared to the achievement of the boys.

### XIV. LIMITATIONS OF THE STUDY

The present study was conducted under certain limitations such as:

1. The sample size need to be increased.
2. The present study was confined to government school of city. Perhaps more meaningful outcome could be achieved by including some more school of different boards.

### XV. SUGGESTIONS FOR FURTHER RESEARCH

1. This study may be carried out an large sample.
2. The present study undertook sample of 5<sup>th</sup> grade students. This study could be further extended to students of other grades.
3. This study may be carried out on the students of private and government school.

### REFERENCES

1. Allison & Gray (1971): “Study there was not significant relationship between homework and achievement journal of educational psychology, Vol.78, No.5.
2. *Asian journal of Psychology and Education (1980): Vol.6, No.1, Pg.35-38.*
3. *Asian journal of Psychology and Education (1982): Vol.9, No.3, pg. 11-17.*
4. Bal Amandeep (1998-99): A study of relationship homework and academic achievement (an experimental study) M.Ed. Dissertation, Khalsa College of Education, Amritsar.
5. Bharathi, V.V. and Padmaja, K., (1994): “Homework and Children,” *Asian Journal of Psychology and Education, Vol.27, No.78, pp.28-33.*
6. Brebt T. M. (2010): “The effect of homework compliance on treatment outcome,” *Great illustrated dictionary, Vol. I, Reader digest Association Limited London.*
7. Cooper and Valentine (2001): “Homework,” *Bloand’s Encyclopedia of Education. Blond Education Limited, London.*
8. Cooper H. (1998): *Dictionary of Education (second edition), McGraw Hill book company, New York.*
9. Cooper H., Lindsay I.I and Great house S. (1998): “Relationship among attitude about homework, amount of homework assigned and completed and students achievement,” *Journal of Educational Psychology, Vol.90, No.1, Public affairs (a) apa.org<mailto: Public affairs (a) apa.org.*

10. Corne J.X (2006): *New Webster's Dictionary of the English Language. The Delair Publishing and Company, Inc.*
11. Deshpand, Shashikala, (1989): "Relationship between homework and achievement," *Indian Educational Review: A Research Journal, Vol.24, No.3, Department of studies in Education, Karnataka University, Dharward.*
12. Deshpande and Kumber (1984): *A study of relationship between homework and academic achievement. An experimental study, M.Ed., Dissertation D.A.V College of Education, Amritsar.*
13. Doll (1947): *A study of Home assignment.*
14. Doll (1974): "Student prefer assignments that result from joint planning of parents and teacher," *Vol.32, No.8.*
15. Haven (1981): "Effectiveness of homework word in improving the academic achievement," *journal of education psychology, Vol.78, No.5.*
16. *International Encyclopedia of Education, "Homework as a neglected area of research," Research and Studies, Pergamon Press, Oxford, New York, Vol.4.*
17. **Kashyap Naveen (1980):** *A study of Merit students in Relation to Anxiety, in achievement, self perception and adjustment.*
18. Nelson et al., (1998): *Achievement effects of homework in sixth grades classrooms," Paper presented at the annual meeting of American Educational Research Association <http://www.pta.org>.*
19. **Psychological Abstracts (1998):** "Relationship among attitude about home work assigned and completed and students achievements," *Vol.85, No.4.*
20. Small, H. and Davis (1967): "Study the impact of correlation of homework on achievement," *Journal of Educational Research, Vol. IV.*
21. **Srivastava, C.N.P, S.S Srivastava (1980):** "A study in prediction of Academic Achievement through Personality traits." *Journal of Educational research, Vol. IV.*
22. **The Encyclopedia of Education (1971):** *Home work" Mac Millian Company and free Press U.S.A, Vol.19.*

#### WEBSITES

www.research on effect of type of homework on achievement.com.  
 www.studies on effect of type of homework on achievement.com  
[http:// www.google.com](http://www.google.com)  
[http:// tutor2u.net](http://tutor2u.net)  
[http:// www.informationworld.com](http://www.informationworld.com)