

The Effects of Assigning Homework on the Achievement of Students at the Primary School Level

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Abstract



Assigning homework to students make they are learning more effective and they comprehend the assigned task in depth by applying drill and practice activities. The current study examines the effects of assigning homework on the achievement of students at the primary level. The population of the study was 100 boys' primary schools. The sample respondents of the study were students of class 5th consist of a total of sixty students and each group such as experimental, comparison, and control group was twenty students. The experimental, comparison and control groups of the students were selected by the flipping of the coin as to which will be experimental, comparison, and the control group. The researcher adopted a simple random sampling technique. The data were collected through pre and post-standardized achievement tests based on mixed items (mix tests) developed by the researcher. The researcher developed fourteen lesson plans to teach the fourteen lessons. The pre and post standardized achievement tests were conducted, collected, and evaluated under the supervision of the researcher. Data were analyzed in the form of one-way ANOVA to find out the significant difference in *f*-value and *p*-value of the experimental, comparison, and control group regarding the 14 selected topics taught. The research concluded that there was no statistically significant difference in *p*-value and *f*-value in the achievement of the students in experimental, comparison, and control group from the lessons 1-6 due to repetition and diffusion in lessons and there was a statistically significant difference in *p*-value and *f*-value in experimental, comparison and control group from the lessons 7-14 taught. The data were presented in the form of tables.

Keywords: Assigning Homework, Lesson Plans, Flipping Coin, Pre and Post Standardized Achievement Tests, Experimental, Comparison and Control Group

Introduction

Homework is a very important task which is being done by students after the school regular timings. Cooper, Robinson, and Patall (2006) described that homework was started during the 20th century and at that time different nations thought about homework that is the process to polish the minds of students. The minds of students are like muscles and educators believing that practicing more with homework is vital for students' depth comprehension. The students try to use different sources to complete the assigned homework and in this way they can learn more effectively. So the homework assigned to students should be well designed, well planned, and effective to develop their learning. Vatterot (2007) stated that the need for homework is that it should be clear to all learners so that they can easily comprehend what they are expected to do. Through homework, many goals can be achieved as relating the previous experience with the new one. Brainstorming, individual creativeness, interacting with each other, taking an interest, striving to achieve the goal, and self-reliability are the main aims of homework (Vatterot, 2018). In this way, the students will gain confidence and management of time and resources. They will enable themselves to familiarize themselves with problem-solving techniques.

According to Trautwein, Koller, Schmitz, and Baumert (2002) argued that homework is one of the easily manipulated variables that society focused on to improve students' achievements in academic levels. The public perceptions about homework shifted change. Bains (2007) reported that currently there are mixed feelings of both parents and educators about the role of homework. The present discussions around education focused that the more time in schools, more homework, and more testing will enable the students to cope with the challenges of the 21st century. Epstein and Van

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Voorhis (2001) described that making assignments and homework a meaningful activity, it is very important to make them of high quality and standard. It is possible through the proper selection of questions for assignments. Teachers need to ensure the questions related to the students learning outcomes and thus make the time invested result-oriented (Xu & Cornot 2003).

Cooper et al (2006) stated that thoughts arousing are the main aim of homework. Further the preparing lessons and topics for future learning and understanding the instructions in complete spirit. Homework is the process in which three main roles involve students, teachers, and parents, and all they play a very important role in the effects of homework on the students' academic achievements (Trautwein, 2007). Teachers assume that students' homework is the source of understanding concepts and practicing it will help them to assist in comprehending any concept. So teachers give feedback to students' homework for bringing more effectiveness in their work. The students always try to improve homework in light of teachers' feedback and guidance (Miller, Duffy, & Zane, 1993). The educators should make a plan about the positive effects of homework assignments on students. So educators in this way will aware of the students' achievements and learning process The homework arouses motivation and metacognition in students working behavior (Cooper et al. (2006). So assigning homework is a healthy activity for the students as it can develop student's interest, motivation, and achievement. Different stakeholders such as students, teachers, headteachers, parents, and school managers can take an active part to achieve the learning targets of the students (Kyriakides et al, 2010). Therefore, the teachers need to assign homework considering the student's psychological, mental, and emotional needs. The current study will analyze the effects of assigning homework on the achievement of the students at the primary level.

Objectives of the study

The objective of the study was to examine the effects of assigning homework on students' achievement the fourteen following topics from the general science of class 5th on the pre and post standardized achievement tests based on mixed items (mix tests). The topics/ units were as following:

- 1) Classification and its importance
- 2) Vertebrates and invertebrates
- 3) Classification of invertebrates
- 4) Classification of Vertebrates
- 5) Classification of flowering and non-flowering plants
- 6) Dicot and Monocot
- 7) Virus, Bacteria, and Fungi
- 8) Disadvantages of Microorganisms
- 9) Sources and Kinds of pollution
- 10) Measure to reduce pollution
- 11) Biodegradable and Non-biodegradable
- 12) Impact of Non-Biodegradable Materials
- 13) Matter and its states
- 14) Effect of Heat on Matter.

Hypothesis of the study

The null hypotheses of the study were as follow:

Ho₁: there is no significant difference between the achievement of the control, comparison, and the experimental group by assigning homework on classification and its importance, vertebrates, and invertebrates, classification of invertebrates, classification of vertebrates, classification of flowering and non-flowering plants, a dicot, and monocot, virus, bacteria and fungi, disadvantages of microorganism, sources, and kinds of pollution, measures to reduce pollution, biodegradable and non-biodegradable, the impact of non-biodegradable materials, matter and its state and effect of heat on matter.

Literature review

Cooper (2006) clarifies that homework is the set of school activities assigned by teachers to students to complete the task after the school timings. Homework is also the school-oriented work that is being done by students after regular classes. The students are being guided by the class teachers on how to do the homework after the regular class timings. The students may also gain guidance if they are facing problems in solving the homework assigned to them (De Jong, Westerhof & Creemers, 2000). Eren and Henderson (2011) stated that at the end of the 19th century and early 20th century the world was against the assigning of homework to students but today the situation is quite different from that time and now it is considered as an important component of students' achievement. Over time, the homework importance and amount increased. Miller, Duffy, and Zane (1993) describe that in homework three main stakeholders are involved; teachers' students, and parents, and each of them play an important role in the completion of students' assigned work. The earlier research shows that teachers assign homework to develop the concepts and skills of the students and strengthen the learning level. The assigning of homework is based on the assumption that students will strengthen

their concepts with additional practice. This assumption may not be corrected every time but the teacher needs to give continuous feedback to students for their further improvement.

Vatterott (2009) described five important beliefs about homework that how the culture of homework developed over the last hundred years and these beliefs are based on traditions, faith, and moral judgments rather than on research. These five beliefs are as follows:

- The school's role for learning beyond the classroom.
- Homework as an intellectual and learning activity.
- Development of the sense of responsibilities.
- Homework is a symbol of curriculum activity.
- Good teachers assign homework and good students complete their work.

The culture of today about homework is the combination of old and new philosophies that teachers believe students are, who teachers want students to be, and how teachers think they can control students (Vatterott, 2009). According to Cooper (1989) and Cooper et al. (2006), there are so many important positive effects of homework on the students' achievements but four are the common positive effects of homework. These are as follows:

- Immediate achievement and development of learning.
- Academic benefits.
- Non-academic benefits.
- School, parental involvement, teachers' feedback, and appreciation.

Rosário et al (2015) stated the three types of instructional purposes of homework; practice, preparation, and extension, and the teacher may use these practices when assigning homework for the student's academic achievement and for strengthening the learning. The practice and preparation will strengthen students learning and are less time-consuming and practice is more used in spelling proficiency and fluency and for mathematics facts understanding. The preparation of homework based on the notion that it will prepare the students for the next lessons, interlink pre-learning, developing students thinking about the previous topics already discussed in the class, and prepare students for future topics. Extension homework focuses to shift previous learning to new tasks and require abstract thinking level. Teachers use this type of homework to students and develop collaboration with their peers to promote creative learning. The extension type of homework engages the students in promoting real-life and practical skills, promote problem-solving skills to improve the students' achievement.

Schimmer (2016) proposed some questions for teachers for ensuring homework is a productive learning experience. These questions are also related to Vatterott's (2010) five beliefs of good homework. These questions are as follows:

- Is the homework learning-centered? Homework should be interlinked with learning and learning standards. It should not be only busy students.
- Is homework necessary? Is the homework necessary to take time in homes for the completion of an assignment?
- Is the homework reasonable? Is it reasonable to expect the students to do their homework and complete it within due time? Is the homework amount and time given according to the age of students reasonable?
- Is the quality of homework high? Is the quality of tasks not in contrasting with family other activities?
- Are students ready for homework? Students should be ready for homework to do it independently and to make it productive.
- Were students involved in homework? Homework will be more productive when students have input.

Bryan and Sullivan Burstein (1998) argued three important strategies for the completion of homework. The one important strategy for the completion of homework is to help the students to connect the class activities being taught in the classroom with real-life activities and challenges outside the school. So homework should promote abstract and critical thinking skills to develop achieve the higher achievement levels of the students. The second strategy for the completion of the homework is the student planner. The student planner is a self-managed activity that will engage students and parents to complete their homework positively. Through the student planner, it will be

easy to communicate with their parents for the completion of homework. So in this way, the parents will view the study planner as a positive tool, and through this medium, the teachers will easily communicate with their parents for the completion of homework and their involvement. The third strategy for the completion of homework is the self-monitoring task to examine the self-completion of tasks. This strategy will provide the students with the opportunity of self-accountability for their effective academic achievements. The students will also feel self-pride and a sense of accomplishment.

Research Methodology

An experimental and quantitative research design was used to examine the effects of assigning homework on the achievement of the students in class 5th. The population of the study was 100 boys’ primary schools sector in the District. The sample respondents of the study were students of the 5th class consist of a total of sixty students and each group such as experimental, comparison, and control group were twenty students. The experimental, comparison and control groups of the students were selected by the flipping of the coin as to which will be experimental, comparison, and the control group. The researcher adopted a simple random sampling technique for the collection of the data. The data were collected through pre and post-standardized achievement tests based on mixed items (mix tests) developed by the researcher. The researcher developed fourteen lesson plans to teach the fourteen lessons. All three groups were taught simultaneously by the researcher but only the experimental group was assigned homework. The researcher checked the homework of the students the next day and provided feedback on the worksheet. The pre and post standardized achievement tests were conducted, collected, and evaluated under the supervision of the researcher. Data were analyzed in the form of one-way ANOVA to find out the significant difference in f-value and p-value of the experimental, comparison, and control group regarding the 14 selected topics taught. The research concluded that there was no statistically significant difference in the achievement of the students in the experimental, comparison, and control groups from lessons 1-6 due to repetition and diffusion. It was also concluded that there was a statistically significant difference in p-value and f-value in experimental, comparison, and control groups from the lessons (7-14). The data were presented in the form of tables.

Data analysis and interpretation

Table 1: Showing the significant difference in p-value and f- value of the experimental, comparison and control group from the lesson (1-6)

Comparison of mean score	Sum of square	Df	Mean square	F	sig
Between groups	47.534	2	23.767	4.185	.176
Within groups	318.043	56	5.679		
Total	365.576	58			
Between groups	10.156	2	5.078	.861	.428
Within groups	330.259	56	5.897		
Total	340.415	58			
Between groups	62.026	2	31.013	5.636	.122
Within groups	308.135	56	5.502		
Total	370.161	58			
Between groups	23.747	2	11.874	2.452	.095
Within groups	271.143	56	4.842		
Total	294.89	58			
Between groups	280.806	2	140.403	26.134	.180
Within groups	300.855	56	5.372		
Total	581.661	58			
Between groups	80.121	2	40.061	9.508	.188
Within groups	235.955	56	4.213		
Total	316.076	58			

Table 1 depicts that there was no statistically significant difference effect on the student’s achievement by assigning homework on classification and its importance, Vertebrates and invertebrates, classification of invertebrates, classification of vertebrates, classification of flowering and non-flowering plants, Dicot and Monocot. The reason for the insignificant result was diffusion and repetition of already covered topics of lessons (1-6). The significant effect on students’ achievement by assigning homework on classification and its importance (f-value= 4.185, p-value=

.176); Vertebrates and invertebrates (f-value= .861, p-value= .428); classification of invertebrates (f-value=5.636, p-value .122); classification of vertebrates (f-value=2.452, p-value=.095); classification of flowering and non-flowering plants (f-value=26.134, p-value=.180); Dicot and Monocot (f-value=9.508; p-value=.188).

Note: No significant difference $p > 0.05$ = not significant effect from lesson (1-6)

Table 2: Showing the significant difference in p-value and f-value of the experimental, comparison and control group from the lesson (7-14)

Comparison of mean score	Sum of square	Df	Mean square	F	sig
Between groups	30.487	2	15.244	10.156	.000
Within groups	84.055	56	1.501		
Total	114.542	58			
Between groups	42.123	2	21.061	15.066	.000
Within groups	78.284	56	1.398		
Total	120.407	58			
Between groups	81.415	2	40.707	29.726	.000
Within groups	76.687	56	1.369		
Total	158.102	58			
Between groups	28.450	2	14.225	11.404	.000
Within groups	69.855	56	1.247		
Total	98305	58			
Between groups	90.907	2	45.453	42.369	.000
Within groups	60.076	56	1.073		
Total	150.983	58			
Between groups	78.053	2	39.026	30.376	.000
Within groups	71.947	56	1.285		
Total	150.000	58			
Between groups	81.189	2	40.595	30.498	.000
Within groups	74.539	56	1.331		
Total	155.729	58			

Table 2 indicates that there was a statistically significant difference effect on the achievement of the students by assigning homework on virus, bacteria and fungi, disadvantages of microorganisms, sources and kinds of pollution, measure to reduce pollution, biodegradable and non-biodegradable, the impact of Non-biodegradable materials, the effect of heat on matter. The reason for the significant result was no diffusion and no repetition of topics of lessons (7-14). The significant effect on the achievement of the students by assigning homework on virus, bacteria and fungi (f-value=10.156, p value=.000); disadvantages of microorganisms (f-value=15.066, p-value=.000); sources and kinds of pollution (f-value=29.726, p-value= .000); measure to reduce pollution (f-value=11.404, p-value=.000); biodegradable and non-biodegradable (f-value= 42.369, p-value= .000); impact of Non-biodegradable materials (f-value= 30.376, p-value = ,000); effect of heat on matter (f-value= 30.498, p-value= .000).

Note: Significant difference $p < 0 .05$ = significant effect from lesson (7-14)

Discussion

Homework is an essential part of school activities today and it provides teachers and parents to engage the students in positive activities, develop their critical thinking skills, problem-solving, coping with real-life problems and examine their academic achievements and performance. Homework also ensures students review their present performance and plan their studies and tasks for future improvements. This research study examines the effects of assigning homework on the achievements of students at the primary level. The study examines the effects of assigning homework on the science subject of the 5th class. The findings of the research indicate that there was no significant difference in assigning homework from lessons (1-6) due to the diffusion and repetition of the lessons already taught by the class teacher earlier from the conduction of this research study. The teacher of the concern class also taught repeatedly the mentioned lessons due to pre and post-summer vacation and assigned homework as well. Therefore, it reflects that the mentioned lessons were taught by the class teacher two times and by the researcher to conduct the current study. The drill and practice activities strengthen the concepts of the students. So the research study reflected that there were no significant differences effects on the students’ achievement.

The findings of the research also depict that there was a statistically significant difference in the achievement of the students by assigning homework from lessons (7-14) taught by the researcher for the purpose to conduct the study. It reflects that assigning homework puts a positive impact on the comprehension of topics and lessons of the experimental, comparative group and their performance was better than the control group. It was also noted that it was occurred due to no repetition and diffusion, no-drill and practice activities during the class time, and also the time gap was less between the teaching-learning activities, assigning homework, and pre and post standardized achievement mixed test of the lessons from 7-14 of the fifth class general science.

Conclusions

The main objective of the current research study was to examine the effects of assigning homework on the students' achievement at the primary level. The researcher drew the following conclusions based on the research findings:

1. It was concluded based on the findings as to the f-value and p-value indicates that there was no statistically significant difference in the achievement of the students in experimental, comparison, and control group from the lessons (1-6) due to repetition and diffusion in lessons as the class teacher taught it pre and post-summer vacation, as well as the researcher, taught after the summer vacation.
2. The researcher concluded that assigning homework put positive effects on the students' achievements and there was a statistically significant difference in f-value and p-value in the experimental, comparison, and control groups due to no repetition and diffusion of the fifth class general science from lessons (7-14) taught.

Recommendations

The findings and conclusions of the study basis the following recommendations, which were:

1. It is recommended that drill and practice activities, repetition of teaching, and provision of guidance to the students are necessary to enhance their learning by assigning homework.
2. The teacher should also interestingly plan homework addressing the students' psychological needs, mental and chronological age.
3. There is a need for continuous allocation of homework, teacher feedback, and assessment of the assigned homework to produce better results regarding learning through homework tasks.

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