

Homework: Is it Necessary?

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TE 855 Research Project

Introduction

The topic that I chose to investigate for this project is the value of homework and the effect it has on student understanding and growth. I believe that this topic is important because as educators our job is to teach our students the information from our subject and ensure students are understanding the material. Homework is one of the ways in which we allow students independent practice and we can allow them to build fluency. While that is the intent, I want to look more closely at what is an appropriate amount, if any, for homework.

Now halfway through my sixth year of teaching, I still struggle with what amount of homework is necessary to ensure student understanding and growth in their mathematical ability. I worked in four different districts and it seems that in each district there was a different policy for homework. Each of these districts are very different culturally which has led to some of the research that I have obtained to support my topic. My first school district was a private school in a rural area where 20-30 problems per night was ordinary and expected. My second school district was an all girls charter school in the heart of Indianapolis where 4-6 problems was the expected assignment length. The most recent school district, a school on the edge of Detroit, considered inner city, homework was not an expectation and was rarely, if ever, given. Now in my current school district, a rural public school outside of Ann Arbor, homework is completely in the hands of the teacher. I vary between 10-25 problems per night with 10-20 minutes in class to work on it. In four very different settings there are four very distinct homework practices. This raises the question, why are four districts practicing four very different homework practices? Is it because the teachers beliefs are different? Or is it because teachers recognize cultural and environmental influences and adapt accordingly?

Therefore based on the experiences that I have encountered with homework I chose to base my project off the effect of homework and determining what is a valuable amount of homework, if any, to reinforce and help build students understanding of the material. I will be presenting my findings from one

assessment where students were given homework on a regular basis versus an assessment where only classwork was given. I will also be discussing other educators thoughts and perceptions on homework and the practices they use within their own classroom.

Resources

The resources that I have found on this topic were compelling and had much to say about the great homework vs. no homework debate. Cooper and Colleagues (2006) argument was focused on teachers assigning appropriate homework that challenged the students understanding and built mathematical competency. Based off of data that was collected, "... the average student in a class in which appropriate homework was assigned would score 23 percentile points higher on tests of the knowledge addressed in that class than the average student in a class in which homework was not assigned."(Marzano & Pickering, 2007, p. 4) They compared their data with students who were given no homework, but were very clear in the fact that the homework that was given to the first group was appropriate and held meaning. I believe that homework should not be completely disregarded but rather when it is necessary and beneficial then it should be assigned and utilized to help teach students rather than assigned in a robotic manner. It seems logical, why else would you assign homework, but as I began to look at my own practices I began to see that I may be assigning problems that are unnecessary to obtain student mastery on a topic. Not intentionally of course, but assigning multiple problems with the same process may not be necessary.

Thomas (1992) states in her article, "The team's findings led to the conclusion that the amount of time (number of days and hours) spent on homework does not contribute significantly to a child's test scores or grades." Again this goes back to the idea of homework does not seem to be the issue but the homework that is assigned is what is impactful to student growth and understanding of the material. In almost all of the findings from the research obtained, homework was beneficial and produced growth

within students when it was determined to be appropriate and meaningful to the students overall understanding of the information.

There was extensive research done by Trautwein, Koller, Schmitz, and Baumert (2002) that addressed data that correlated to amount of homework, time it took to do homework, and frequency of homework. They concluded their findings stating, “In our study, frequent homework assignments correlated with higher achievement gains. This indicates that students may profit from regular homework, be it by catching up with newly acquired knowledge and procedures on a daily basis or by preparing for coming lessons and reviewing previous lessons.” (p. 13) In this research we can see that frequency of homework being assigned, that is meaningful, produces growth in students compared to students who were not assigned frequent homework.

Another important topic that was brought to the forefront of the homework debate was parental involvement. Thomas (1992, p.12), writes in her article, “The NELS data...suggest that "general parental involvement has a substantial effect on eighth graders' achievement test scores.” Data obtained from (Keith and others, 1992) In my experience teaching I would have to say that there is a lot of truth in this finding. In my previous teaching position the culture in my school was overall little to no parent involvement, which caused a strain on assigning homework because students simply would not do it. With little accountability they had no reason to complete out of class assignments. Eventually I moved all “homework” into being done during class time. The achievement test scores, in our case the NWEA, were at about a 4th/5th grade level for 80% of our 7th grade students. Whereas in my current teaching position we have 90% of students whose test scores are at or above grade level, 8th grade, and they are given homework on a daily basis with a 95 - 100% turn in rate. Parental involvement is well above the norm where I receive emails from parents asking about homework and how to support their students at home. Parental involvement is certainly one piece of the puzzle when it comes to homework practices and how teachers determine their methods of implementation.

Data collection & Results

For my project I conducted a survey about homework practices utilizing a survey from the article, Homework: a survey of teacher beliefs, written by Johnson and Pontius (1989). (Appendix A) I distributed this survey to the teachers in my building, regardless of subject, as well as the high school mathematics teachers. My reason for conducting the survey is to get an overall idea of what as a district the belief on homework is. I also wanted to see specifically how the mathematics department looked at homework in comparison to the other subjects. What I found from the survey is that all teachers within the district agree that homework is important (Appendix D). What was interesting is that every single teacher believes that homework should NOT be a daily practice, even in the math department (Appendix D). I found this especially interesting because we are generally teaching a new concept daily that requires practice. In looking at the other responses about homework that is assigned it appears that homework is assigned throughout the week 2 or more times, regardless of subject, (Appendix D), so there is not a complete lack of homework just not everyday. In Hartlep and Goszs' 2009, article they state, "...[r]egular practice is a significant factor in the development of fluency. Teachers need to help students at all grade levels understand that skills can be automatic if they practice them." obtained from" (Krudwig, 2003, p. 5). It appears that most teachers within the district believe in regular practice, defined as two or more days per week, as a beneficial implementation of homework. (Appendix D) With regular independent practice students are overall showing a mastery of skill in each of their classes.

I also changed the homework practices within my own classroom. In the beginning of the year I was taking all of the class time to teach the topic at hand and then students were given homework to complete outside of class time. Starting in November, I changed my approach to teaching half of the class time and allowing the second half of class time to complete "homework" which turned inevitably into classwork. This way students could still get the practice but in class with my support. I also would teach

some days for the whole class period and then the next day students would have the class period to complete an assignment that review multiple concepts rather than just one at a time. I alternated between both approaches. After making the switch I have had one assessment students have had to take. For my data collection I compared the percentage of students who received an 80% or higher on the first test we took before the change and the most recent test they have taken after the change. (Appendix B & C)

What I found from my data was a massive difference between when my students were given homework and when my students were given only classwork. I had 28.4% of students who passed the first assessment of the course with an 80% or higher, being given homework on a regular basis. Whereas I had .08% of students pass assessment two with an 80% or higher, being given only classwork and no homework. (Appendix B & C) It would appear that more students showed mastery when assigned homework on a regular basis. As an educator this would be what I would expect to be the correlation, given my experience, and now seeing the data that has been collected on the topic. Based off of the data that I collected from my class it is clear that my students specifically benefit from independent practice through homework. Based off of this data it will help me decided how to disburse independent practice in the future.

Constraints

While I would love to say my data is the end all be all, and proves the effectiveness of homework I do want to present some outside factors that could have caused a lower score on the second assessment. The first factor was students had Thanksgiving break between learning material and taking the exam, which could have caused a lower retention of the material when not given repeated practice over that holiday weekend. Also, chapter 1 was review of expressions and equations from the previous year with some new material added in. Chapter three on the other hand was brand new material that students had not yet experienced. One more factor that could have altered the data would be that students were in

charge of recognizing 19 vocabulary terms within their test and utilize them in their solutions. They had not had a test yet that was composed of vocabulary terms, so this was a new expectation for them.

Conclusion

I learned from this project that practice is important, especially in mathematics. Whether that practice takes place in class or at home, it is my own personal belief that both places of practice are important. What I believe makes a difference in student retention and comprehension is the value of the assignment the student is asked to complete. Ensuring that students have independent practice that can be supported in one way or another is what is vital. Students need to be able to practice the problems on their own and also have the added experience of having the responsibility to complete an assignment and turn it in. At the middle school level I believe there are multiple lessons that we are teaching students every day to prepare them for high school, college, and the real world. By giving them the responsibility to ask questions, complete work, and turn it in to be assessed is monumental to their development.

References

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Appendix A

SURVEY OF HOMEWORK BELIEFS AND PRACTICES

For each of the following questions, circle the letter that best expresses your opinion. The letters after each question represent the following:

SA = Strongly Agree A = Agree D = Disagree SD = Strongly Disagree
NO = No Opinion

BELIEFS ABOUT HOMEWORK

1. Homework improves student mastery of content.
SA A NO D SD
2. Graded homework is most beneficial.
SA A NO D SD
3. Homework requires a lot of the teacher's time.
SA A NO D SD
4. Most learning can take place in the classroom.
SA A NO D SD
5. Students derive little benefit from homework.
SA A NO D SD
6. Homework should be assigned on a daily basis.
SA A NO D SD
7. It is difficult to motivate students to do homework.
SA A NO D SD
8. Homework is unrelated to student responsibility.
SA A NO D SD
9. Parents expect students to have homework.
SA A NO D SD
10. Homework shows parents a school's philosophy and curriculum.
SA A NO D SD

HOMEWORK PRACTICES: CIRCLE THE RESPONSE THAT BEST REPRESENTS YOUR ANSWER

11. On a weekly basis, I usually assign homework:
Daily Twice or more Once Less than once
 12. On a weekly basis, I usually collect homework:
Daily Twice or more Once Less than once
 13. On a weekly basis, I usually grade homework:
Daily Twice or more Once Less than once
 14. How long should a student take to complete homework I assign?
Less than one hour One hour More than one hour
 15. The homework I assign most frequently is:
Practice Preparation Extension
 16. I would/would not assign more homework if it were easier to administer.
Would Would not
 17. Homework determines _____% of the student's grade.
 18. The department I teach in is _____.
 19. I have been teaching for _____ years.
- Please write any additional comments or questions on the back of this form. Thank you very much for your assistance with this questionnaire.

Figure 1 The instrument

Appendix B

21/74; 28.4% with 80% or higher when homework was assigned everyday.

Chapter 1 Test 10/5/2018 88.00	Chapter 1 Test 10/5/2018 88.00	Chapter 1 Test 10/5/2018 88.00	
51.70	58.09	49.82	
28.00	76.00	62.00	
78.00	58.00	38.00	
52.00	56.00	60.00	
26.00	62.00	48.00	
52.00	60.00	64.00	
74.00	70.00	64.00	
72.00	84.00	20.00	
42.00	64.00	62.00	
10.00	58.00	58.00	
74.00	74.00	32.00	
42.00	12.00	72.00	
72.00	78.00	76.00	10.00
78.00	60.00	26.00	22.00
68.00	44.00	14.00	64.00
24.00	50.00	58.00	66.00
88.00	46.00		62.00
36.00	70.00		72.00
X	28.00	86.00	46.00
54.00	56.00	34.00	70.00
0.00	72.00	72.00	26.00
64.00	20.00	54.00	72.00
	80.00	30.00	54.00
		50.00	

Appendix C

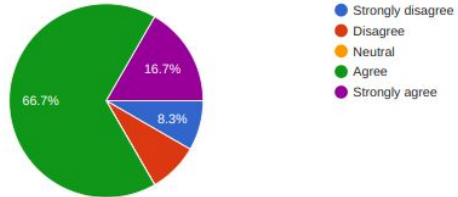
6/73; .08% scored 80% or better when only classwork and NO homework was assigned.



Appendix D

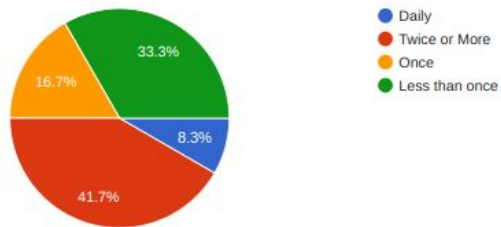
Homework Improves student mastery

12 responses



On a weekly basis I usually assign homework:

12 responses



Homework should assigned on a daily basis.

12 responses

