International Online Journal of Educational Sciences, 2016, 8 (2), 62-70

iojes
www.iojes.net

International Online Journal of Educational Sciences

ISSN: 1309-2707

The Impact of Collaborative Graded Home Assignments on the Performance of University Students

Kostas Karadimitriou[1]

[1] *Department of Education Sciences in Early Childhood, Democritus University of Thrace, Greece*

ARTICLE INFO

Article History:
Received 21.02.2016
Received in revised form 28.04.2016
Accepted 06.05.2016
Available online 20.05.2016

ABSTRACT

The purpose of this study is to examine the impact of a collaborative graded home assignment on undergraduate students` performance in the final examination semester test. Seventy one students of a department of education sciences in early childhood collaborated in groups of three to six and conducted an assignment for a course in preschool education. They presented their assignment in class during the semester in order to be graded and take feedback. The final examination test was divided in seven parts, relevant to their assignment topics. We examined if students` score in the part of the test which was relevant to their home assignment topic was higher compared to the other parts of the test and also if it was higher compared to the other students` score, who conducted assignments on different topics. The results showed that students performed very well on the part of the test which was relevant to their home assignment. They also scored higher mean marks on the same parts as well, in most of the cases (five to seven), compared to their colleagues, who conducted home assignments on different topics. However, very few statistically significant differences were found.

© 2016 IOJES. All rights reserved

Keywords:
graded home assignments, teaching methods, students' performance, students` collaboration, higher education

Introduction

Undoubtedly a major concern of professors in university is the performance of students in their courses. Graded and non - graded home assignments constitute a common teaching method for improving students' learning not only at the elementary and secondary education but also at higher education. Furthermore, research has shown that teachers, parents, students and college professors correlate homework[2] with academic growth (Cartledge & Sasser, 1981). In a recent study Letterman (2013) found that university students acknowledge significant value to homework assignments, provided that they are appropriate and meaningful. They also believe they contribute in understanding course material and that they should be counted in their course grade.

The potential positive effects of homework are, among others, the retention and understanding of the material, skills improvement, the notion that learning can take place also at home and the development of independence (Cooper, 1989; 2008). On the other hand working at home may promote cheating (e.g. by coping or by taking help from others more than the appropriate) (Cooper, 1989) or even may have a negative influence on attitudes towards school in some cases (Falch & Rønning, 2012). Marzano and Pickering (2007) also note that homework is beneficial only if it is used appropriately as inappropriate homework may even decrease students` achievement. However, it is general acknowledged that many problems complicate the

[2] By the term homework we mean in general "tasks assigned to students by school teachers that are meant to be carried out during non - school hours" (Cooper, 1989, p. 86).

[1] Corresponding author's address: *Department of Education Sciences in Early Childhood, Democritus University of Thrace, Nea Chili, Alexandroupolis, Greece*
Telephone: +00302551030114
e-mail: kkaradim@psed.duth.gr
DOI: http://dx.doi.org/10.15345/iojes.2016.02.006

© 2016 International Online Journal of Educational Sciences (IOJES) is a publication of Educational Researches and Publications Association (ERPA)

conduction of studies which examine the impact of homework on learning and achievement. For example ethical issues and restrictions that should always be counted on studies with students, sampling problems (Grove & Wasserman, 2006), omitted variables and measurement error, which bias the impact of homework time (Mc Mullen, 2007), lack of efficiency in controlling the total environment (Cartledge & Sasser, 1981) and at last but not least the vague nature of the concepts "learning" and "achievement".

In addition Kohn (2006) lists some limitations of the homework studies: first that most of them do not show a causal relationship but only an association between learning and homework, second that they confuse grades and test scores with learning and third that they are based only on the assumption that we can accurately measure the number and length of assignments. The effect of homework even seems to vary across different countries, probably because homework depends on educational institutions (Falch & Rønning, 2012) and this is also a limitation, mainly in the generalization of the results. Indicative of all the above are the numerous design flaws that have been found in an early meta - analysis of researches conducted on the issue by Cooper, Robinson and Patall (2006).

If we thoroughly examine the relevant literature we can also observe that there is no unanimity about the effects of homework on learning and achievement. Early research findings showed that homework is positively related to academic achievement with larger effects though at the secondary than the primary education (Cooper et al., 2006). In the same direction Cartledge and Sasser (1981, p. 12) also note that there is "a slight preponderance of evidence indicating that students who receive homework assignments achieve somewhat better academic results than do those who receive no homework assignments". Furthermore, Hayward (2010) suggests that well-planned, purposeful, and engaging homework can positively affect students` achievement and McMullen (2007) points out that assigning additional homework primarily improves the achievement of low performing students and the achievement of students in low performing schools. On the other hand, Kohn (2006) in a general critique of homework studies notices that: a) the longer the duration of a homework study, the less of an effect the homework is shown to have, b) there are small positive effects in many cases of studies, c) there is no overall positive correlation between homework and achievement for students before middle school and d) the results of national and international exams raise further doubts about homework's role.

The literature in particular scientific areas strengthens the above views in favor of home assignments. Ganiyu (2012) and Olufemi (2014) found respectively in two studies with secondary school students in Nigeria that home assignments contributed on their performance in mathematics. In addition Pelletier and Normore (2007) found that students' homework performance is a strong predictor of their academic success in mathematics.

Research with college and university students showed similar positive results with some specifications though, which indicate that graded home assignments do not have the same impact, in all cases. Cartledge and Sasser (1981) and Grove and Wasserman (2006) found that graded homework increased the exam performance of freshmen and Latif and Miles (2011) found a significant positive impact especially on males and international students. Grodner and Rupp (2013) found benefits especially for students who initially performed poorly in the course. Artés and Rahona (2013) similarly found that the use of graded problem sets through the semester increased students` performance and especially the performance of the weaker compared to better students. Finally, Emerson and Mencken (2011) found that graded homework through an automated homework system increased students' achievement. On the other hand, Geide - Stevenson (2009) found that graded homework assignments did not increase students` achievement. The above research outcomes concern economics courses with the exception of the study of Cartledge and Sasser (1981) which examines the effect of homework assignments on college students` mathematics achievement.

The purpose of this study is to examine the impact of a collaborative graded home assignment on students` performance in a university undergraduate course. Collaborative method was selected because of its benefits, educational and practical. Regarding the first, much research in different classroom structures comparing group with individual work of students suggests that collaboration is more effective on performance and learning (Lai, 2011). Furthermore, offers many other multiple benefits for students like intrinsic motivation, higher lever reasoning, the development of social skills etc. (see: Johnson, Johnson &

Stanne, 2000). As regards the second, it is much more convenient for the professor of a multitudinous course to interact with groups of students than with each one of them individually.

Grove and Wasserman (2006) note the importance of classroom natural experiments and the use of the data to test the efficacy of teaching methods and assignments. Artés and Rahona (2013) explain that contemporary literature on academic achievement focuses mainly on teaching methods whereas in the past the interest was on teachers` characteristics. This change was due to the recognition in theoretical models and empirical studies that students' incentives and efforts are the most important determinants of academic success and therefore emerged the need for the identification of adequate teaching methods and techniques to serve the above purpose (e.g. the creation of incentives).

In the Department of Early Childhood Education of the Democritus University of Thrace in Greece, where this study took place, graded group home assignments constitute a common teaching method and it is interesting to evaluate it empirically in its natural context. The outcomes of this study may be useful to the academic staff as no similar research has been conducted before in Greece and also in an Education Department. Therefore, there are no sufficient data to support the effectiveness of the above method in the university class as a practice that can enhance students` performance. No sufficient data also exist from the implementation of this teaching method in higher education in other countries too as the research on this issue is not extensive and it is mainly limited to economics courses.

Method

Problem Statement

This study aims to examine the impact of a home collaborative graded assignment on students` performance, in the topic of their assignment, in the final examination multiple choice test of an undergraduate course in preschool education. Students` scores in the seven parts of the above test will be compared in order to find:

a) If each students` score in the part of the test which is relevant to their assignment topic will be higher compared to the other parts of the test.

b) If each students` score in the part of the test which is relevant to their assignment topic will be higher compared to their colleagues, who conducted an assignment on a different topic.

Description of the Research

This research was designed and implemented in the context of the undergraduate obligatory course "Contemporary Programs of Preschool Education", which is taught in the first year of studies in the Department of Education Sciences in Early Childhood in the Democritus University of Thrace in Greece. Four years of studies are required for graduation from this Department. The design and the implementation of the research lasted for one semester.

One hundred and twenty students (all natives) were presented at the beginning of the semester the goals, the processes and the expected results of the course and the assignments. They were asked to form groups of three to six and choose a topic for an assignment among fifteen available topics, all relevant to the course to be taught. The purpose of each assignment was to analyze and present in the class, in a power point presentation, one chapter of the two course textbooks (see: Doliopoulou, 2000; 2001). In each chapter is analyzed one program or approach for preschool education (for example "The Reggio Emilia Approach", "The Project Method" etc.). Each topic could be chosen of more than one group of students. The recommended structure of the assignments and presentations was the following: a) review of the history of the Program/Approach, b) description of its content and its basic characteristics, c) description of the role of the educator, d) examples of activities in the class, e) the various arguments in favor of and against the implementation of each program/approach.

Students were encouraged to form teams by themselves since the free choice of partners may contribute to feel more comfortable and more motivated to work jointly (Barkley, Cross & Major, 2005). This is of particular value in our case, where students make one of their first attempts to work collaboratively in the university.

Students were also explained the following assessment criteria for their group assignment: quality of the obligatory presentation of their assignment in the class, deepening in the investigated concepts, extensions to the relevant literature and quality of their answers to questions from the audience in the class. All students knew also from the beginning that they could be randomly addressed questions by the professor during the presentation in the class and that they would also had to describe the way they collaborated, the difficulties they faced, the role of each member in the assignment and the recourses that each individual processed. Each student's final grade on the course would be calculated both from a common grade in the group assignment (30%) and their personal score on a final examination multiple choice test at the end of the semester (70%). The above procedures in their assessment would assure, in a degree, the individual accountability and the positive interdependence between team members (see: Jeffrey, 2010). In addition, grade was supposed to work as a motivation for students (Geide-Stevenson, 2009; Artés & Rahona, 2013). As Latif and Miles (2011) note about the logic of graded home assignments, where score counts in the final course grade, they motivate students to work on them and learn and consequently to have a better performance in the exams. Grade can also operate as feedback on their level of understanding (Artes & Rahona, 2013). We believe that ungraded assignments which offer no direct grade benefit or penalty (Grove & Wasserman, 2006) are not appropriate for this study because we do not know the incentives of our students for learning and we cannot base on their intrinsic motivation to accomplice their task.

Description of the Multiple Choice Test

The final examination multiple choice test consisted of 28 questions from seven of the fifteen programs and approaches, which are analyzed in the course textbooks. Each part of the test was examining one program or approach of the above and included four questions of similar difficulty. That means that the sample for this research would be limited to students who worked on assignments which were relevant to the seven programs and approaches – parts of the multiple choice test. That was seventy one students (seventy women and one man). The seven programs and approaches were the following: "The Reggio Emilia Approach", "An Approach for the Development of Emotions", "The High Scope Program", "The Montessori Program", "The Bank Street Approach", "Behaviorist Programs" and "The Project Method".

Students had two hours' time to answer the questions, which is sufficient time to complete the test without pressure. All students were also given the same directions and explanations during the examination.

Data Collection

Students were divided by the topic of their home assignment into seven groups and their scores in the multiple choice test were calculated (one mark for each right answer and no marks for wrong ones). SPSS 21 was used for processing data. Anova test was used in order to compare students` means in the seven parts of the test in relevance to their group. Post hoc multiple pair wise comparisons were made with the LSD method in order to identify mean differences.

Research Questions and Research Hypothesis

As already stated in the introduction part of this paper, most studies in higher education have shown positive results, with some specifications, in favor of graded home assignments on students` performance. In our case we assumed that the following two conditions should be met in order to accept that the collaborative home assignments that students conducted for the purpose of this study, contributed on their performance (in the topic of their assignment). The first is to score higher in the part of the course examination multiple choice test that is relevant to their home assignment topic, compared to the other parts of the test, and the second is to score higher to the same part of the test compared to their colleagues, who conducted assignments on different topics. From this point of view two research questions arose:

a) Will students perform (score) better in the part of the test that is relevant to their home assignment topic in comparison to the other parts of the test?
b) Will students perform (score) better in the part of the test that is relevant to their home assignment topic in comparison to the other students who conducted home assignments on different topics?

From the second research question arises the following null research hypothesis:

H_0: The mean marks of the seven groups of students` scores in the seven parts of the test will be not significant different, regardless their topic of home assignment.

Limitations of the Study

This study was carried out in a Department of Early Childhood Education in a province of Greece and almost all of the participants were female due to the high proportion of women in this Department (over 98%). Therefore the outcomes cannot be generalized to students of other Departments with potentially different demographic characteristics and a different curriculum.

Furthermore students had feedback during the presentation of their assignments and were able to correct their mistakes and their misconceptions. This is a recommended process for promoting learning and it is suggested by many researchers (e.g. Hayward, 2010; Olufemi, 2014). But the outcome of this process cannot be estimated for each individual student and therefore we assume that the effect was equally beneficial to all of them.

Results

In the following table (table 1) we present the mean mark of students` answers to the seven parts of the multiple choice test. The first column represents the seven groups of students divided by the topic of their home assignment. As we can see, in all cases students performed very well in the part of the test, which is relevant to their collaborative home assignment, with the exception of students who conducted a home assignment in Behaviorist Programs (N=13). Those students performed better in four other parts of the test.

More specifically in three cases students achieved the highest mean mark of the test in the part which is relevant to their collaborative home assignment (Montessori Program, Project Method and Reggio Emilia Approach). In other two cases they scored the highest mean mark in the part of the test which is relevant to their collaborative home assignment and to another part as well (High Scope Program and Approach for the Development of Emotions). At last, in one case they achieved the second higher mean mark in the part of the test which is relevant to their collaborative home assignment (Bank Street Approach).

Another view of the results is to see which students, divided by the topic of home assignment, performed better on each one of the seven parts of the test. This approach reveals that in almost all cases, students performed their highest mean mark of the test in the part which is relevant to their home assignment topic, with the exception of those who conducted an assignment in Behaviorist Programs and Montessori Program, where they scored the second highest mean mark though. This approach basically shows that the home collaborative graded assignment helped students to respond better to the level of difficulty of the relevant part of the test.

Table 1. Mean mark of students` answers for each one of the seven parts of the test. Students are divided by the topic of their home assignment

Groups of students by assignment topic * Parts of the Multiple Choice Test		(1)MP	(2)BP	(3)BSA	(4)HSP	(5)ADE	(6)PM	(7)REA
	Mean	,3125	,3750	,6250	,6250	,4375	,4375	,1875
HSP	N	4	4	4	4	4	4	4
	SD	,31458	,32275	,43301	,14434	,23936	,23936	,23936
	Mean	,6094	,3281	,5156	,3438	,5156	,4688	,1563
MP	N	16	16	16	16	16	16	16
	SD	,34118	,25362	,29536	,27195	,26566	,28687	,20156
	Mean	,4375	,3958	,7292	,3958	,5625	,7708	,2917
BSA	N	12	12	12	12	12	12	12
	SD	,33920	,29113	,22508	,27091	,24133	,22508	,29835
	Mean	,3594	,3438	,5469	,4063	,5781	,5781	,2344
ADE	N	16	16	16	16	16	16	16
	SD	,31582	,27195	,26171	,31458	,23662	,29887	,24948
	Mean	,5385	,4808	,5192	,3846	,5385	,6154	,4615
BP	N	13	13	13	13	13	13	13
	SD	,24677	,23852	,27879	,28165	,26705	,24185	,22468
PM	Mean	,6429	,4286	,6071	,4643	,5000	,7857	,3214

	N	7	7	7	7	7	7	7
	SD	,24398	,12199	,19670	,30375	,32275	,09449	,34503
	Mean	,2500	,5000	,6667	,5000	,4167	,6667	,7500
REA	N	3	3	3	3	3	3	3
	SD	,43301	,00000	,14434	,25000	,14434	,38188	,00000

Note. "The High Scope Program" (HSP), "The Montessori Program" (MP), "The Bank Street Approach" (BSA), "An Approach for the Development of Emotions" (ADE), "Behaviorist Programs"(BP), "The Project Method"(PM), "The Reggio Emilia Approach" (REA).

In table 2 we can see the results of the Anova test for significant differences in a 95% significance level between the scores of the seven groups of students (divided by the topic of home assignment) on each one of the seven parts of the test. Significant differences are found only in two cases. LSD multiple pair wise comparison revealed that students who conducted a collaborative home assignment on the "Reggio Emilia Approach", performed significantly better in the relevant part of the test comparatively to five other groups of students: those who conducted an assignment to the "Approach for the Development of Emotions", "The High Scope Program", "The Montessori Program", "The Bank Street Approach" and "The Project Method". Similarly students who conducted a collaborative home assignment on the "Project Method" performed significantly better in the relevant part of the test comparatively to students who conducted an assignment to "The High Scope Program". Consequently the null hypothesis is rejected as significant differences were found, though in only two cases and in a limited part of the test.

Table 2. Comparison between the mean marks of scores of the seven groups of students (divided by home assignment topic) on each one of the seven parts of the test (ANOVA table)

Seven groups of students by assignment topic * Parts of the Multiple Choice Test		Sum of Squares	Df	Mean Square	F	P
	Between Groups	1,023	6	,170	1,741	,126
MP	Within Groups	6,268	64	,098		
	Total	7,290	70			
	Between Groups	,251	6	,042	,653	,687
BP	Within Groups	4,091	64	,064		
	Total	4,342	70			
	Between Groups	,435	6	,072	,994	,437
BSA	Within Groups	4,662	64	,073		
	Total	5,097	70			
	Between Groups	,311	6	,052	,651	,689
HSP	Within Groups	5,094	64	,080		
	Total	5,405	70			
	Between Groups	,133	6	,022	,335	,916
ADE	Within Groups	4,233	64	,066		
	Total	4,366	70			
	Between Groups	,991	6	,165	2,430	,035*
PM	Within Groups	4,351	64	,068		
	Total	5,342	70			
	Between Groups	1,400	6	,233	3,719	,003*
REA	Within Groups	4,014	64	,063		
	Total	5,414	70			

*p< .05

Note. "The Montessori Program" (MP), "Behaviorist Programs" (BP), "The Bank Street Approach" (BSA), "The High Scope Program" (HSP), "An Approach for the Development of Emotions" (ADE), "The Project Method" (PM), "The Reggio Emilia Approach" (REA).

Discussion

The aim of this study is to examine whether collaborative home assignments have positive impact on university students` performance. The application of an experiment in an undergraduate course in preschool education was conducted in order to test the efficacy of this teaching method in higher education and more

specifically in an Education Department where group and individual home assignments constitute a common method for assessment and/or enhancement students` learning. The relevant literature generally supports the implementation of home assignments for school students, provided that they are used in an appropriate and balanced way, but the research outcomes for college and university students are limited and basically come from economics courses. Therefore the generalization of results is not safe for other disciplines, which means there is a need for the expansion of the research in other fields too. This is also suggested by researchers who conducted studies on the issue in economics courses (e.g. Grodner & Rupp, 2013; Artés & Rahona, 2013). Similarly the literature implies that there is the need for international studies as the effect of homework depends also on the educational institutions (Falch & Rønning, 2012).

The assumption that guided our research is that students should perform better in the final examination test of the course, in the part of the syllabus that is relevant to a topic that they have already been engaged by conducting a collaborative graded home assignment during the semester than to the other parts of it. To be exact, our teaching intervention was based on three elements that were supposed to work in tandem: collaborative work, grade and engagement. Collaboration with their colleagues was intended to create a pleasant and creative learning climate between them where one student would support and complement the other during their common work, grade was intended to operate as a motive and feedback before the final exam test and engagement was supposed to be achieved by the procedure which forced them to be active during the learning process (e.g. to collaborate, to search and edit literature, to create and present a power point presentation).

Actually, the results show a positive association between home assignments and the performance of students in the relevant part of the test, though no significant differences were found in most cases. Of course we cannot argue that our study reveals a causal relationship between learning and home assignments but we can indicate from our results that collaborative graded home assignments may enhance students` performance in university courses. Provided they are engaging, well planned and meaningful (Hayward, 2010) and they are used appropriately (Marzano & Pickering, 2007). We are also confident that larger samples of students would reveal greater differences and make the association stronger. In addition, in this study "performance" is measured only by students` score in a multiple choice test. A broader approach of the term in the context of a contemporary educational process would highlight aspects of learning and achievement, which are widely acknowledged though are not subject of this research (e.g. social interactions, elaboration of conceptual knowledge). Appropriate procedures that reveal the above aspects have been done to some extend during the presentation of assignments in the class by the students (see: Description of the Research) but the outcomes are inevitably limited to the topic of the assignment of each student. Therefore we preferred to use the multiple choice test that enabled us both to examine the entire syllabus and also to compare students` score between the seven parts of it in a quantitative way. Furthermore, such tests constitute a common assessment method in university courses. The limitations we describe in this paragraph are very common in homework studies according to Kohn (2006).

At last, previous studies with college and university students have examined multiple variables on the issue and imply that the impact of home assignments may dependent on their individual characteristics (e.g. the year of study and their sex). In our case, the sample is very homogeneous. It is characteristic that all of our students were female (with one exception), freshmen and natives and also attended the course for first time. This limitation strengthens the importance of this study for its natural context but on the other hand this fact prompts call for more similar research in different and more diverse contexts in order for the outcomes to be extended and generalized.

Conclusion

The outcomes of this study indicate that the implementation of a collaborative graded home assignment had positive impact on students` performance in a preschool education course in a university department, though no significant differences were found in most cases. The results are very encouraging in favor of this teaching method and give us the confidence that collaborative graded home assignments may constitute an alternative teaching method in university, supplementary to lecture, that may enhance students` incentives for learning and improve their performance. The benefits of collaboration, grading and

students` engagement can be combined and work in tandem in order to increase students` performance and make the course more manageable at the same time.

Although "homework literature" is extensive for the other educational levels, it is not the same for higher education too. Consequently, more research in a variety of courses and disciplines and also with larger samples of students and with different individual characteristics should follow. Stable research outcomes for the effectiveness of collaborative graded home assignments as a teaching method in higher education would be of great value both for educational and practical reasons.

Acknowledgments: The author would like to thank Dr. A. Markos (Laboratory of Mathematics and Informatics, Democritus University of Thrace, Greece) for his assistance with SPSS and the two anonymous reviewers for their helpful and constructive comments.

References

Artés, J., & Rahona, M. (2013). Experimental evidence on the effect of grading incentives on student learning in Spain. *The Journal of Economic Education*,*44*(1), 32-46. doi: 10.1080/00220485.2013.740387

Barkley, E. F., Cross, K. P., & Major, C. H. (2005). *Collaborative learning techniques: A handbook for college faculty*. San Francisco: John Wiley & Sons.

Cartledge, C. M., & Sasser, J. E. (1981). *The effect of homework assignments on the mathematics achievement of college students in freshman algebra.* Retrieved from ERIC database (Record No. 206495)

Cooper, H., Robinson, J. C., & Patall, E. A. (2006). Does homework improve academic achievement? A synthesis of research, 1987–2003. *Review of educational research*, *76*(1), 1-62.

Cooper, H. (2008). *Does homework improve academic achievement?: If so, How much is best?. SEDL Letter*, 20-21. Retrieved from http://www.sedl.org/pubs/sedl-letter/v20n02/homework.html

Doliopoulou E., (2000). *Contemporary programs for preschool children.* Athens: Tipothito- G.Dardanos. (In Greek)

Doliopoulou E., (2001). *Contemporary trends of preschool education.* Athens: Tipothito- G. Dardanos. (In Greek)

Emerson, T. L., & Mencken, K. D. (2011). Homework: To require or not? Online graded homework and student achievement. *Perspectives on Economic Education Research*, *7*(1), 20-42.

Falch, T., & Rønning, M. (2012). Homework assignment and student achievement in OECD countries. *Department of Economics/Norwegian University of Science and Technology, Oslo*. Retrieved from http://www.ssb.no

Ganiyu, A. A. (2012). The effect of take home assignments on students` performance in mathematics in Nigerian secondary schools. *Journal of Science and Science Education, 3(1),* 83 – 88. Retrieved from http://www.josseo.org

Geide-Stevenson, D. (2009). Does collecting and grading homework assignments impact student achievement in an introductory economics course? *Journal of Economics and Economic Education Research, 10*(3), 3-14.

Grodner, A., & Rupp, N. G. (2013). The role of homework in student learning outcomes: Evidence from a field experiment. *The Journal of Economic Education*, *44*(2), 93-109. doi: 10.1080/00220485.2013.770334

Grove, W.A., & Wasserman, T. (2006). Incentives and student learning: A natural experiment with economics problem sets. *American Economic Review 96*(2), 447-452.

Hayward, Jennifer, M. (2010). *The effects of homework on student achievement.* Unpublished masters thesis, State University of New York College at Brockport). Retrieved from http://digitalcommons.brockport.edu

Jeffrey, F. (2010). *Positive interdependence, individual accountability, promotive interaction: Three pillars of cooperative learning.* Retrieved from https://www.uwstout.edu

Johnson, D. W., Johnson, R. T., & Stanne, M. B. (2000). *Cooperative learning methods: A meta-analysis.* Retrieved from https://www.researchgate.net

Kohn, A. (2006). Does homework improve learning? Retrieved from http://www.alfiekohn.org

Lai, E. R. (2011). *Collaboration: A literature review, (Vol. 2).* Retrieved from Pearson Assessments: http://images.pearsonassessments.com/images/tmrs/Collaboration-Review.pdf

Latif, E., & Miles, S. (2011). The impact of assignments on academic performance. *Journal of Economics and Economic Education Research*, *12*(3), 1-12.

Letterman, D. (2013). Students' perception of homework assignments and what influences their ideas. *Journal of College Teaching & Learning (TLC)*, *10*(2), 113-122.

Marzano, R. J., & Pickering, D. J. (2007). Special topic: The case for and against homework. *Educational leadership*, *64*(6), 74-79.

McMullen, S. (2007). *The impact of homework time on academic achievement.* The University of North Carolina at Chapel Hill, Retrieved from http://citeseerx.ist.psu.edu

Olufemi, A. S. (2014). The effect of homework assignment on mathematics achievement of secondary school students in south west Nigeria. *Journal of Education and Practice*, *5*(28), 52-55. Retrieved from http://www.iiste.org

Pelletier, R., & Normore, A. H. (2007). The predictive power of homework assignments on student achievement in mathematics. In S. M. Nielsen & M. S. Plakhotnik (Eds.), *Proceedings of the sixth annual college of education research conference: Urban and international education section* (pp. 84-89). Miami: Florida International University.