

Title: Research and resources on homework in grades K–12

Date: November 2013

Question: >> I am looking for recent research on the topic of homework in grades K–12. Specifically, I am looking for research that discusses best practices, time limits, and family and child stress.

Response:

REL West staff searched selected databases for relevant resources (see “Methods” section below), and compiled the following list of citations, which were published no earlier than 2008. They are organized into the following categories:

1. Current research and policy on homework in grades K–12
2. Homework and students’ self-efficacy and self-regulation
3. Parental involvement in students’ homework
4. Homework and students’ stress

Citations are accompanied by an abstract, excerpt, or summary written by the author or publisher of the article. Citations include a link to a free online version when available. We have not evaluated the methodological rigor of these resources, and provide this list for information only.

1. Current Research and Policies on Homework in Grades K–12

Dettmers, S., Trautwein, U., Lüdtke, O., Kunter, M., & Baumert, J. (2010). Homework works if homework quality is high: Using multilevel modeling to predict the development of achievement in mathematics. *Journal of Educational Psychology, 102*(2), 467–482.

Abstract: The present study examined the associations of two indicators of homework quality (homework selection and homework challenge) with homework motivation, homework behavior, and mathematics achievement. Multilevel modeling was used to analyze longitudinal data from a representative national sample of 3,483 students in Grades 9 and 10; homework effects were analyzed at the student and the class level simultaneously. Students who perceived their homework assignments to be well selected reported higher homework motivation, and homework behavior at both the student and the class level predicted later achievement at the class level. Homework assignments perceived to be cognitively challenging were differentially associated with achievement at the student and the class level. Students who perceived their homework to be challenging (student level) showed relatively poor performance, but homework challenge was positively related to achievement at the class level.

Maltese, A. V., Tai, R. H., & Fan, X. (2012). When is homework worth the time? Evaluating the association between homework and achievement in high school science and math. *High School Journal*, 96(1), 52–72. Retrieved on October 30, 2013, from http://muse.jhu.edu/journals/high_school_journal/v096/96.1.maltese.html

Abstract: Even with the history of debate over the merits of homework, there are significant gaps in the research record regarding its benefit to students. The focus of this study is on the association between time spent on homework and academic performance in science and math by assessing survey and transcript data from two nationally representative samples of high school students collected in 1990 and 2002. Using multiple linear regressions and controlling for students' background, motivation, and prior achievement, we investigated how much variance in science and math course grades and achievement test scores could be explained by time spent on homework in those classes. The results indicate that there is no consistent significant relationship between time spent on homework and grades, but a consistently positive significant relationship between homework and performance on standardized exams.

Protheroe, N. (2009). Good homework policy = Good teaching. *Principal*, 89(1), 42–45. Retrieved on October 29, 2013, from

http://www.naesp.org/resources/2/Principal/2009/S-O_p.42.pdf

Abstract: Homework is often a hot-button issue for schools. Even with a school homework policy, the homework practices of teachers vary in quality, with some teachers applying best practice standards, while others assign homework too difficult for some students, or collect homework without providing feedback to students. In addition, families in which parents work and children participate in an array of after-school activities provide an environment where homework time and parental assistance is often scarce. Thus, principals need to address parents' concerns about excessive homework—or teachers' concerns when too many students fail to complete it. Principals and teachers can use research about homework to address two important questions: Does homework support higher levels of student learning? What are characteristics of effective homework practices? This brief overview of the current research and practices related to homework highlights the complexity of the issue. For homework to be effective, it should be carefully planned to support specific educational goals, take into account the specific abilities and needs of students, and strengthen the link between home and school.

Vatterott, C. (2010). Five hallmarks of good homework. *Educational Leadership*, 68(1), 10–15. Retrieved on October 29, 2013, from

<http://www.ascd.org/publications/educational-leadership/sept10/vol68/num01/Five-Hallmarks-of-Good-Homework.aspx>

Abstract: The best homework tasks exhibit five characteristics. First, the task has a clear academic purpose, such as practice, checking for understanding, or applying knowledge or skills. Second, the task efficiently demonstrates student learning. Third, the task promotes ownership by offering choices and being personally relevant. Fourth, the task instills a sense of competence—the student can successfully complete it without help. Last, the task is aesthetically pleasing—it appears enjoyable and interesting.

Xu, J. (2009). School location, student achievement, and homework management reported by middle school students. *School Community Journal*, 19 (2), 27–44. Retrieved on October 29, 2013, from <http://www.adi.org/journal/fw09/XuFall2009.pdf>

Abstract: The aim of this study was to examine whether student achievement and school location may influence a range of homework management strategies. The participants were 633 rural and urban students in Grade 8. These homework management strategies include: (a) setting an appropriate work environment, (b) managing time, (c) handling distraction, (d) monitoring motivation, and (e) controlling negative emotion. Compared with low-achieving students, high-achieving students reported more frequently working to manage their workspace, budget time, handle distraction, monitor motivation, and control emotion while doing homework. Urban middle school students, compared with their rural counterparts, reported being more self-motivated during homework.

Xu, J. (2011). Homework completion at the secondary school level: A multilevel analysis. *Journal of Educational Research*, 104(3), 171–182.

Abstract: The author aimed to test empirical models of variables posited to predict homework completion at the secondary school level. Student- and class-level predictors of homework completion were analyzed in a survey of 1,046 8th-grade students from 63 classes and of 849 11th-grade students from 48 classes. Most of the variance in homework completion occurred at the student level, with parent education and teacher feedback being two significant predictors at the class level. At the student level, the variation in homework completion was positively associated with teacher feedback, self-reported grade, learning-oriented reasons for doing homework, homework interest, and homework management. Girls reported statistically significant higher scores in homework completion than did boys.

2. Homework and Students' Self-Efficacy and Self-Regulation

Bembenutty, H. (2011c). Meaningful and maladaptive homework practices: The role of self-efficacy and self-regulation. *Journal of Advanced Academics*, 22(3), 448–473.

Abstract: To be successful in homework completion, learners need to be self-regulated by setting homework goals, selecting appropriate learning strategies, maintaining motivation, monitoring progress, and evaluating homework outcomes. This article examines the role of self-regulation of learning on assigned homework. The findings reveal positive relationships between homework activities and self-efficacy, responsibility for learning, and delay of gratification. A positive relationship between homework and a range of self-regulation skills exists that facilitates academic achievement and performance. Homework assignments can enhance the development of self-regulation processes and self-efficacy beliefs, as well as goal setting, time management, managing the environment, and maintaining attention. Some educational programs may be inadequately attuned to the self-regulatory needs of learners that are vital for effective learning. Students engage in multiple maladaptive homework behaviors to cope with homework demands. Those maladaptive behaviors call for more self-regulatory learning training for students and educators. In addition, the author demonstrated how we can use research to transform the public view of homework, which will result in a more positive disposition of learners. This article provides a starting point from which to launch renewed efforts to continue examining the strengths and limitations of current homework practices.

Ramdass, D., & Zimmerman, B. J. (2011). Developing self-regulation skills: The important role of homework. *Journal of Advanced Academics*, 22(2), 194–218. Retrieved on October, 29, 2013, from http://www.davidsongifted.org/db/Articles_id_10702.aspx

Abstract: The article evaluates the relationship between homework and self-regulation from the elementary grades to college. It reveals that quality measures of homework such as managing distractions, self-efficacy and perceived responsibility for learning, setting goals, self-reflection, managing time, and setting a place for homework completion are more effective than only measuring the amount of time spent on homework. During homework completion, students engage in self-regulation by motivating themselves, inhibiting distractions, using strategies to complete homework, managing time, setting goals, self-reflecting on their performance, and delaying gratification. As a result, self-regulation and homework are related and the findings show that from elementary grades to college, skilled learners engaged in the above self-regulatory behaviors during homework activities. Self-regulatory behaviors develop gradually over time with repeated practice. Evidence from experimental studies shows that students can be trained to develop self-regulation skills during homework activities. It is important to continue with training studies at all grade levels so that students can become aware of the relationship between homework activities and these self-regulation processes such as goals, self-efficacy, self-reflection, time management, and delay of gratification. Evidence from correlational studies showed that students' self-regulation skills and motivational beliefs correlate positively with homework activities. Homework assignments that are adequately challenging and interesting help struggling and at-risk students develop motivation and self-regulation skills and achieve success. Teachers can help students develop these behaviors by using homework logs. Data from the logs can help teachers show students their strengths and help them overcome their weaknesses.

Schmitz, B., & Perels, F. (2011). Self-monitoring of self-regulation during math homework behavior using standardized diaries. *Metacognition & Learning*, 6(3), 255–273.

Abstract: This study aims at enhancing math learning and general self-regulation by supporting daily self-regulated learning during math homework. The authors use standardized diaries as a self-monitoring tool to support self-regulatory behavior. Following the theory of self-monitoring, frequent self-monitoring of self-regulation will lead to an enhancement of self-regulated learning. Complete data stem from a sample of 195 8th grade students. 95 students from the experimental group answer questions in diaries for a period of 49 days and participate in the pre-post measurement whereas the control group only works on the pre- and posttests. The diary consists of questions regarding main components of self-regulation. The time-series analyses of the diary variables show a positive linear trend for self-regulation. The results of the analyses of variance for the pre-post experimental-control group comparison yielded time by group interactions for self-regulation and the math test.

3. Parental Involvement in Students' Homework

Bennett-Conroy, W. (2012). Engaging parents of eighth grade students in parent-teacher bidirectional communication. *School Community Journal*, 22(2), 87-110. Retrieved on October 29, 2013, from <http://files.eric.ed.gov/fulltext/EJ1001614.pdf>

Abstract: This article describes the development and evaluation of a classroom-based, low-cost intervention to increase parents' involvement in their children's education. In Phase 1 of the study, 17 parents of 8th grade students in a low-income, high immigrant and minority school district were interviewed to conduct a qualitative assessment of factors related to at-home and at-school parent involvement and to assess the feasibility and acceptability of the planned intervention. In Phase 2 of the study, 192 students in nine 8th grade English classes were given weekly homework for seven weeks that required parent-child interaction to complete the assignment. Three of these classes were randomly selected to receive teacher outreach to initiate parent-teacher bidirectional communication with students' parents. The main hypothesis was that teachers would have bidirectional conversations of at least five minutes duration with a greater proportion of intervention class parents than with control class parents. Additional hypotheses were that intervention class students would submit more homework assignments and have higher homework grades than control class students. These hypotheses were confirmed by chi-square analysis, $p < .001$. The study demonstrated that a low-cost intervention to improve parent involvement at home and at school among 8th grade students' parents is feasible, acceptable to all stakeholders, and effective.

Dumont, H., Trautwein, U., Ludtke, O., Neumann, M., Niggli, A., & Schnyder, I. (2012). Does parental homework involvement mediate the relationship between family background and educational outcomes? *Contemporary Educational Psychology*, 37(1), 55-69. Retrieved on October 29, 2013, from <http://www.sciencedirect.com/science/article/pii/S0361476X11000439>

Abstract: This research examines whether parental homework involvement mediates the relationship between family background and educational outcomes such as academic achievement and academic self-concept. Data from two studies in which grade 8 students ($N = 1274$ and $N = 1911$) described their parents' involvement in the homework process were reanalyzed via structural equation modeling. Perceived parental homework interference and perceived homework-related conflict were negatively related to students' academic development, whereas perceived parental support and perceived parental competence to help with homework were positively related to academic outcomes. Although there were small associations between some aspects of parental homework involvement and family background variables, parental homework involvement did not mediate the relationship between family background and educational outcomes. Findings highlight the need for differentiated conceptualizations of parental homework involvement as well as detailed analyses of the processes underlying the association between family background and educational outcomes.

Van Voorhis, F. L. (2011). Costs and benefits of family involvement in homework. *Journal of Advanced Academics*, 22(2), 220–249. Retrieved on October, 29, 2013, from http://www.davidsongifted.org/db/Articles_id_10703.aspx

Abstract: Homework represents one research-based instructional strategy linked to student achievement. However, challenges abound with its current practice. This paper presents the results of three 2-year longitudinal interventions of the Teachers Involve Parents in Schoolwork (TIPS) homework program in elementary mathematics, middle school language arts, and middle school science. Each weekly standards-related TIPS assignment included specific instructions for students to involve a family partner in a discussion, interview, experiment, or other interaction. Depending on subject and grade level, TIPS students returned between 72% and 91% of TIPS activities, and families signed between 55% and 83% of TIPS assignments. TIPS students and families responded significantly more positively than controls to questions about their emotions and attitudes about the homework experience, and TIPS families and students reported higher levels of family involvement in the TIPS subject. No differences emerged in the amount of time students spent on subject homework across the homework groups, but students using TIPS for 2 years earned significantly higher standardized test scores than did controls. The findings suggest that the benefits of TIPS intervention in terms of emotion and achievement outweigh its associated costs.

4. Homework and Students' Stress

Brown, S. L., Nobiling, B. D., Teufel, J., & Birch, D. A. (2011). Are kids too busy? Early adolescents' perceptions of discretionary activities, overscheduling, and stress. *Journal of School Health*, 81(9), 574–580.

Abstract: The activity patterns of children, especially after-school patterns, are receiving more professional attention. However, evidence regarding the value of various activities in children's lives is contradictory. The purpose of this study was to assess perceptions of discretionary activities, overscheduling, and levels of stress from adolescents' perspective. A sample of 882 children, ages 9 to 13, recruited at 9 health education centers in the United States was selected for this study. Children answered questionnaires using remote, handheld devices. Data were analyzed using descriptive statistics and multivariate logistic regression. The outcomes of interest were activity-based stress and desire for more free time. The primary predictor for the desire for more free time was hours of screen time (television, computer, video games): those who reported 3 or more hours were nearly 3 times more likely to desire more free time. Further, children who chose their own activities experienced more activity-related stress than those who shared decisions with parents. The single greatest predictor of activity-related stress was the reported number of hours spent on homework. Students who averaged at least 2 hours on homework per night were nearly twice as likely to report frequent activity-related stress. Parents of school-aged children should assess activity-related stress and the degree to which children perceive they are busy. Teachers, school counselors, and school administrators should be aware of these perceptions as they are making decisions regarding school schedules and should teach personal skills such as time management and stress control.

Kackar, H. Z., Shumow, L., Schmidt, J. A., & Grzetich, J. (2011). Age and gender differences in adolescents' homework experiences. *Journal of Applied Developmental Psychology*, 32(2), 70–77. Retrieved on October 30, 2013, from <http://www.sciencedirect.com/science/article/pii/S0193397310001346>

Abstract: Extant data collected through the Experience Sampling Method were analyzed to describe adolescents' subjective experiences of homework. Analyses explored age and gender differences in the time adolescents spend doing homework, and the situational variations (location and companions) in adolescents' reported concentration, effort, interest, positive affect and stress while doing homework. Regarding age differences, middle school students reported more positive experiences when homework was done with companions and in locations other than home, whereas high school students reported more positive experiences when homework was done alone and at home. Regarding gender differences, girls, regardless of age, reported greater stress than boys when doing homework alone, and lower stress when doing homework with friends. High school girls reported lower interest than middle school boys when doing homework alone. Findings provide an understanding of age and gender differences in adolescents' perceptions of homework, which might help educators and parents structure engaging homework environments.

Methods

Keywords and Search Strings Used in the Search

("Policies" OR "stress" OR "time limits" OR "parental involvement") AND "homework" AND "k-12"

Databases That Were Searched

ERIC, EBSCO, JSTOR, ProQuest, PsycINFO, PsycArticles, Google, and Google Scholar

Criteria for Inclusion

When REL West staff review resources, they consider—among other things—four factors:

- **Date of the Publication:** The most current information is included, except in the case of nationally known seminal resources.
- **Source and Funder of the Report/Study/Brief/Article:** Priority is given to IES, nationally funded, and certain other vetted sources known for strict attention to research protocols.
- **Methodology:** Sources include randomized controlled trial studies, surveys, self-assessments, literature reviews, and policy briefs. Priority for inclusion generally is given to randomized controlled trial study findings, but the reader should note at least the following factors when basing decisions on these resources: numbers of participants (Just a few? Thousands?); selection (Did the participants volunteer for the study or were they chosen?); representation (Were findings generalized from a homogeneous or a diverse pool of participants? Was the study sample representative of the population as a whole?).
- **Existing Knowledge Base:** Although we strive to include vetted resources, there are times when the research base is limited or nonexistent. In these cases, we have included the best resources we could find, which may include newspaper articles, interviews with content specialists, organization websites, and other sources.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by educators and policymakers in the Western region (Arizona, California, Nevada, Utah), which is served by the Regional Educational Laboratory West (REL West) at WestEd. This memorandum was prepared by REL West under a contract with the U.S. Department of Education's Institute of Education Sciences (IES), Contract ED-IES-12-C-0002, administered by WestEd. Its content does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.