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# QUALITY OVER QUANTITY

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Elements of Effective Homework

CHALLENGE  
**SUCCESS**

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## INTRODUCTION

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Educators often treat homework as a Goldilocks problem. Grounded in the belief that homework is fundamentally good for students, teachers aim to optimize how much they assign. If they don't assign enough homework, they worry their students will not learn the subject matter. If, on the other hand, teachers assign too much, students may be unduly overloaded and stressed. The goal, for many educators, is to provide students the just-right homework load.

Much of the research on homework from the past several decades uses the variable of time to understand the effects of homework. How does the amount of time students spend on homework, researchers have asked, relate to their achievement in school? Do students with more homework earn higher grades? Do they get higher scores on standardized tests? Is there an amount of time spent after which students no longer reap any benefits from completing their homework?

In our own research, students frequently cite the amount of assigned homework as a primary driver of their stress. In fact, of the 50,000 high school students from predominantly middle to upper middle

class communities that we surveyed since 2018, 67% reported homework as a primary source of stress, with 57% of students stating they had too much homework (Challenge Success, 2020).

But it's not just the *amount* of homework that may provoke student stress; it's also the type of homework assigned. When students perceive homework to be tedious or boring, for example, or they find it too advanced or confusing, they are likely to be more stressed and less engaged, regardless of how long the assignment takes. Conversely, as some studies suggest, when students find their work purposeful, meaningful, or interesting, they may derive more benefits from completing it.

In this paper, we aim to broaden the conversation around homework beyond the narrow focus on time spent. Drawing from decades of research, we explore the features of homework that may benefit students and consider those that may be associated with negative results. At the end of the paper, we provide educators and parents with a set of guiding questions that we hope will inform more effective homework policies and practices.

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### ABOUT CHALLENGE SUCCESS

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*Challenge Success is a non-profit organization affiliated with the Stanford University Graduate School of Education. We partner with schools, families, and communities to embrace a broad definition of success and to implement research-based strategies that promote student well-being and engagement with learning.*

[www.challengesuccess.org](http://www.challengesuccess.org)

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## METHODOLOGY

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We started this process by revisiting the white paper we wrote on homework in 2012 (Challenge Success, 2012) and searching for more recent literature, since much can change in eight years. For studies supported or refuted by more recent literature, we added citations and changed portions of the paper accordingly. We also conducted new searches using academic search engines for recent research on homework in K-12 schools using keywords related to homework such as “assignments,” “studying,” and “workload.” We include studies that are well-designed and implemented, build on prior research concerning homework quantity and quality, utilize datasets that are sufficiently large and representative of the population, address the limitations of the data gathered, and describe the assumptions made in the study. (See our annotated bibliography at the end of this paper to learn more about the studies we included that we did not summarize herein.) We also reviewed more than 20 other rigorous studies that are not included here due to redundancy. When we cite research included in our 2012 paper, it is because new research on the topic could not be found or the author(s) and research remain seminal.

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## POSITIVE AND NEGATIVE EFFECTS OF TIME SPENT ON HOMEWORK

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### *Does more time spent on homework lead to higher achievement?*

A common assumption among educators is that when students spend more time on homework, they achieve more academically. If the argument goes, homework provides an opportunity to reinforce learning from class, to practice skills and review content, then students who do more homework should have a better grasp of the material and, in turn, should earn higher grades and scores on standardized tests.

This belief, however, is not borne out by research. Harris Cooper (1989, 2007; Cooper & Valentine, 2001), considered a leading researcher on the subject, reviewed hundreds of homework studies in an effort to understand the relationship between time spent on homework and academic achievement. For elementary school students, Cooper found no correlation between time spent on homework and achievement; that is, students who completed more homework were no more likely than their peers to earn higher grades and scores in school. The data on middle school and high school students told a different story, though. For these students, the researchers found an increase in academic performance when middle school students did up to an hour of homework and high school students did up to two hours daily. But, significantly, these effects began to fade as students did more work. In other words, middle school students that regularly completed two hours of homework did not perform better in school than those that averaged only one hour. More time

spent on homework did not necessarily equate to higher academic achievement.

Other studies have further challenged the assumption that more time spent doing homework leads to higher achievement. Kitsantas and colleagues (2011) investigated whether time spent on math homework in particular would lead to higher scores on a standardized math achievement test (PISA). In their study of nearly 5,000 15 year-old students, the researchers found that, after controlling for prior math achievement, students who did more math homework on average earned worse scores on the standardized test. More time spent on homework in this case correlated with *lower* achievement.

Using different methodological approaches, some researchers have found more mixed results, with moderate gains in achievement correlating with time spent on homework (see Fan et al., 2017; Fernández-

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*More time on homework did not necessarily equate to higher academic achievement.*  
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Alonso, Álvarez-Díaz, Suárez-Álvarez & Muñiz, 2017; Maltese, Tai, & Fan, 2012). But in none of these cases was a causal relationship determined; no study that we reviewed suggested that more homework would lead to students performing better in school. Instead, researchers attributed any gains they observed to other

factors, including parent involvement, student effort and motivation, and the type of homework assigned.

### ***What other costs might be associated with students spending more time on homework?***

Though we could not find evidence of a clear causal relationship between homework load and academic achievement, we wondered what researchers had to say about potentially negative effects of spending more time on homework. For instance, does doing too much homework lead to any unintended consequences for student health or well-being? Are there other opportunity costs associated with spending more time on homework?

As noted above, when asked about major sources of stress, 67% of the 50,000 high school students that completed the Challenge Success Student Survey cited their homework load. Among those students doing 3 hours or more of homework, that percentage spiked to 80%. Middle school and high school students who self-reported higher workloads in school tended to also report more symptoms of exhaustion and lower rates of sleep (Galloway, Conner, & Pope, 2013; Galloway & Pope, 2007; Conner, Pope, & Galloway, 2009). Middle school students who averaged 3 or more hours of nightly weekday homework reported sleeping 60

fewer minutes each night than their peers. For high school students, those averaging more than 3 hours of homework lost an extra 30 minutes of sleep.<sup>1</sup> Our studies, however, did not investigate whether or not a causal relationship existed between hours spent on homework and student health; that is, did doing more homework lead to higher rates of exhaustion and sleep deprivation or were there other factors at play? Given the link between sleep deprivation and student mental and physical health (Kalak et al., 2014; Vernon, Modecki, & Barber, 2017), we believe this is an area ripe for further research studies.

In addition to sleep, there may be other opportunity costs that result from higher homework loads that warrant further research. Students who spend several hours each night on homework may not have time for other activities known to confer benefits, such as spending time with family, doing chores (Bennett & Kalish, 2006; Kravolec & Buell, 2000; Offer, 2013; Skeer & Ballard, 2013), and reading for pleasure – which has been shown to correlate with higher standardized test scores for students of all ages (Jerrim & Moss, 2018; Sullivan & Brown, 2015). In addition, Barker et al. (2014) found that young students who spent more time in less-structured, child-initiated activities outside of school, such as reading, playing outside, playing games, and listening to music with others or alone, had higher self-directed executive functioning skills such as

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<sup>1</sup> To be sure, students may not be wholly focused when attending to their homework. Of the students we surveyed, 18% of middle school students and 37% of high school students reported using social media while doing homework, and 24% and 29% respectively reported watching Netflix, YouTube, etc. While multitasking in this way is neither an efficient nor an effective strategy, many students report having sparse downtime and social time in their day. As a result, students often explain that the only time left in the day to connect with friends or relax with their devices is when they're also doing their homework.

establishing their own goals and carrying out tasks to reach those goals, as compared to when they spent time in structured activities such as doing homework and adult-initiated activities.

In addition to opportunity costs associated with student well-being and lack of time for important developmental tasks, we found some studies that considered the effect that a high homework load may have in widening achievement gaps between students. One might assume that for students that have fallen behind in school, regardless of socio-economic background, more time spent on homework would prove beneficial, by providing opportunities for extra practice and remediation. In a study of elementary school students in the Netherlands, however, Marte Rønning (2008) found that time spent on homework actually *exacerbated* existing achievement gaps. Students from higher income backgrounds were more likely to benefit academically from doing homework than those from lower income backgrounds, presumably, the author concludes, because these students received more help from their parents. Lack of access to a computer and internet may further tax students from lower-income families, especially as the homework load increases. A 2018 analysis of Census Bureau data in combination with research from authors from the Pew Research Center found that 1 in 5 teens cannot regularly complete their homework due to a lack of necessary technology. These students are disproportionately Black and Latinx (Anderson & Perrin, 2018).

In this section, we showed positive, negative, and mixed results from studies that focused specifically on how much time students spend on homework. If the metric of time isn't necessarily a useful predictor of the outcomes we desire, what other elements of homework, beyond time on task, might be related to positive outcomes?

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## ELEMENTS OF EFFECTIVE HOMEWORK

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A small but growing body of research has begun to explore the characteristics of homework assignments that lead to better outcomes. Among these studies, an underlying principle is that all homework is not created equal. Some assignments, even if they do not take students long to complete, may offer benefits, while

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*It is therefore insufficient to simply consider how much work students have without also considering the type and quality of those assignments.*

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others may not. It is therefore insufficient to simply consider how much work students have without also considering the type and quality of those assignments.

What, for example, is the effect when students perceive an assignment to be interesting, relevant to their lives, or valuable to their learning? In a socioeconomically and culturally diverse sample of eighth and eleventh graders, Xu (2011) found that the extent to which students perceived their homework to have value for their learning and was interesting to them was positively related to completing the homework, even after controlling for a range of student and classroom characteristics. Dettmers and colleagues (2010) determined similar results in their study of 3,000 German high school students. Using multilevel modeling, the researchers observed that when students found their homework interesting and perceived that it

had been carefully selected by their teacher, they were more engaged in the assignments, expended more effort in completing them, and ultimately performed better on standardized tests.

The conclusions these studies draw may seem obvious: when students find homework interesting, relevant, and valuable, they are more likely to engage in and complete it. Indeed, general studies on student engagement (not necessarily looking at homework) confirm that higher rates of engagement often correlate with higher achievement (Fredericks, Blumenfeld & Paris, 2004; Marks, 2000). Yet, it is worth noting that students often find their homework to be anything but interesting and valuable. On our own Challenge Success survey, we ask students to judge the homework they are assigned (e.g. “In how many of your classes does the assigned homework help you learn the material?” “How many of your classes assign meaningless homework (busywork)?”). Among the 50,000 high school students that completed the

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survey since 2018, only 33% say that most or all of their classes assign homework they deem to contribute to their learning. If our intention in assigning homework is that students engage with it, we should prioritize

assignments that they find interesting and meaningful.

Other studies looked more closely at the purpose of the homework assignments and if different types of assignments made a difference in terms of homework achievement. Should the homework provide students the opportunities to practice skills introduced in class? Or should it encourage students to transfer skills and content from class to new applications?

In an experimental study with more than 600 sixth grade students in Portugal, the researchers assigned students into one of three types of homework groups: “Extension Homework,” which asked students to extend the concepts taught in class to real world situations, “Practice Homework,” which asked students to practice or review skills taught in class, and “Preparation Homework,” which asked students to do work that would prepare them for the subsequent class (e.g. read the next chapter in the book). Using multilevel modeling, they found that extension math homework was more likely to be related to higher grades on a math test than practice or preparation homework, regardless of the amount of homework assigned (Rosário et al., 2015). Trautwein and colleagues (2009) drew similar conclusions in their study of about 1,300 eighth grade students. Relating the types of homework students were assigned in French class with their end of the year grade, the researchers found that “drill and practice” assignments corresponded with the lowest scores (see also Flunger et al., 2015).

There may still be a place in curricula for practice homework, and for that matter, preparation homework

as well. Reading a chapter for homework may enable rich, productive conversation in class - which may be a desired outcome in and of itself. Similarly, practicing some skills at home may help certain students, but should probably be used in moderation, especially given the lack of research to show that this kind of homework is effective in increasing student achievement. If teachers determine homework to be necessary for their learning objectives, the research to date shows that they should prioritize assignments that promote the transfer of concepts to new contexts.

How homework is supervised and evaluated also seems to make a difference for student outcomes. In the same study referenced earlier, Trautwein and colleagues (2009) found that when teachers approached homework with a more controlling style - one that championed homework monitoring and grading - students expended less effort on their homework and experienced more negative emotions while working on it than did students whose teachers promoted autonomy and student responsibility (also see Bempechat, 2019; Bempechat et al., 2011). The effect seems to hold for parents as well. A review of studies conducted by Boonk and colleagues (2018) found that when parents exert excessive control

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*For students to reap any benefits from homework, they need to see its value and purpose.*  
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over their children’s homework, checking for accuracy and completion or providing help, children’s academic achievement suffers. On the other hand, when parents

offered support by providing comfortable spaces for children to work, supporting their independence and persistence and having high expectations for them academically, they were more likely to perform better in school (see also, Viljaranta et al., 2018).

Based on the research reviewed here, we urge educators to take a close look at their current homework practices and policies. For students to reap any benefits from homework, they need to see its value and purpose. Ideally, the assignments should be interesting and engaging, and should encourage students to apply their learning as opposed to practice rote skills. Similarly, parents and educators may want to promote student autonomy and independence when doing homework, and keep in mind other important developmental tasks such as playtime, reading for pleasure, family time, and downtime when considering the pros and cons of assigning work outside of school hours.

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## ESSENTIAL QUESTIONS TO IMPROVE HOMEWORK PRACTICE

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### *For Teachers*

**DO STUDENTS UNDERSTAND THE PURPOSE AND VALUE OF THE ASSIGNMENT?** When students perceive homework as busywork, meaningless, or of little value, they are less likely to complete it and may become less interested in learning and in school in general. Educators can increase engagement by clarifying the purpose of the work and allowing students to choose which problems to complete or which topics to research. Teachers can also allow students to opt out of the assignment or stop doing the homework once they believe they understand the concept.

**WILL ALL STUDENTS BE ABLE TO DO THE TASK INDEPENDENTLY?** It is challenging to design homework assignments that meet every child's academic and developmental needs, but students are more likely to disengage when an assignment feels either too hard or too easy. Teachers should strive for the "just-right" challenge for each student and ensure that homework can be done without help from parents or tutors - especially because not all students have equal access to outside help.

**IS THIS ASSIGNMENT BETTER DONE IN CLASS VERSUS AT HOME?** Some activities cannot be done effectively or efficiently in class, such as reading a book chapter to prepare for class discussion the next day or interviewing a community member for an oral history project. Skill practice might be more effective in class, where teachers can clarify misunderstandings and provide prompt feedback and coaching.

**HOW MUCH TIME SHOULD THIS ASSIGNMENT TAKE?** If you are going to assign homework, consider how much time the assignment should take and recommend an appropriate cut-off time for students without penalty. Having students start the assignment in class will help you estimate how long it may take different students to do and whether they need help. Remember that students may have homework from several classes each night, so try to coordinate large assignments and assessments with other teachers when possible, and offer lenient late policies or "homework passes" when workload or home obligations are especially heavy.

**WHAT KIND OF FEEDBACK SHOULD I PROVIDE ON THE HOMEWORK?** Grading homework is tricky. Some students who don't turn it in or do it incorrectly may have reasons beyond their control, such as organizational issues or not understanding the assignment, and others may have relied on outside help to correct the work. If you do choose to grade the homework, make sure you provide actionable and timely feedback on assignments and offer students opportunities to revise and resubmit

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## ESSENTIAL QUESTIONS TO IMPROVE HOMEWORK PRACTICE

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### *For Parents*

**WHAT SHOULD MY ROLE BE WITH MY CHILD'S HOMEWORK?** Consider the metaphor of youth sports: When it comes to homework, parents should cheer from the sideline but resist stepping onto the field. Let the child be the player and the teacher be the coach as well as the occasional referee. In practice, this means supporting your children by showing an active interest in the content they are learning and, if necessary, helping them organize their time, workspace, and/or prioritize assignments. Resist checking, editing, or doing the work for the student, though. Doing so may rob them of the opportunity to develop resilience, persistence, and problem-solving skills.

Remember also that a missed or poorly completed assignment likely will not impact your child in the long run. If a child regularly avoids homework or turns in sloppy work, it should be the teacher, not the parent, who intervenes.

**WHAT IF I AM CONCERNED ABOUT THE LOAD AND QUALITY OF MY CHILD'S HOMEWORK?** Initiate a respectful dialogue with the school to provide information about your child's experiences with homework, and partner with educators and administrators to create effective homework policies. Older students can advocate for themselves and start by communicating with teachers directly about homework challenges they are facing.

**HOW DO I HELP MY CHILD FIT HOMEWORK INTO THEIR DAILY ROUTINE?** Students who are overscheduled will start homework later at night, and those who are exhausted will be less efficient. Work with your child to determine a healthy schedule of activities that will allow time to complete homework, work on projects, and study for tests, while leaving adequate time for sleep, playtime, downtime, and family time.

## LIMITATIONS OF RESEARCH ON HOMEWORK

Doing research on homework is notoriously difficult. “How much homework do students do?” may seem like a relatively straightforward question, but dig in further and every bit of the question requires clarification. What counts as homework? Does homework time include time spent studying for tests? How do we account for breaks or distractions, especially when they are related to the homework itself, like the time spent calling a friend or emailing a teacher for help?

Similar questions arise around differences between and among students. For instance, how much time a student spends on homework may depend on whether or not that student finds the material easy to understand or the extent to which they love or dread the subject. Similarly, time on homework may vary greatly for students with learning differences (and especially those with information processing challenges like dyslexia) and English Language Learners (ELLs). We also cannot be sure if students are completing the work on their own or if parents, tutors, siblings, or friends are contributing as well.

This is all further complicated when we consider how researchers obtain the information on how much homework kids are doing. Do they ask students to self-report? Over what period of time – a day, week, month or semester – are they asked to estimate? Do they ask the students or parents to keep daily logs? All of these differences complicate the task of drawing reliable conclusions about just how much homework students are doing.

As for the second most common question – “Does homework lead to academic achievement?” – similar methodological problems abound. How do the researchers define academic achievement and how do they measure it? If studies rely on standardized tests, how do researchers determine whether the score on the test is due to the homework done outside of class or what the student has been learning in the classroom or even prior knowledge? Using student grades as a proxy for achievement is also problematic. Some studies look at overall GPA, while others look at individual course grades. Because teachers often include homework completion as part of a student’s course grade, the kids doing their homework in these courses are going to get higher grades, regardless of the quality of the homework itself (Kohn 2006a; 2006b). In addition, generalizing from studies, particularly studies done in varying contexts, such as different countries, can be especially challenging.

In short, measuring the amount of homework students do – much less the quality of those assignments, and students’ engagement with the work – is extremely complex. In this paper, we offer studies that met our criteria for sound methodology (see earlier section on methodology), while we acknowledge the many limitations that may hamper the research.

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## MORE ON THE HOMEWORK STUDIES WE REVIEWED

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**Barker, J.E., Semenov, A.D., Michaelson, L., Provan, L.S., Snyder, H.R. & Munakata, Y. (2014)** These authors find that children who spent more time in less-structured, child-initiated activities outside of school such as reading, playing outside, playing games and listening to music with others or alone had higher self-directed executive functioning skills such as establishing their own goals and carrying out tasks to reach those goals, as compared to when they spent time in structured activities such as doing homework and adult-initiated activities.

**Bempechat, J., Li, J., Neier, S.M., Gillis, C.A. & Holloway, S.D. (2011)** This study found that when homework is not seen as meaningful to the student or valuable to the teacher, it may turn students off from school and learning. In this qualitative study of low-income ninth and tenth graders, the researchers found that when students were given homework but had few consequences for not completing it, students showed an increase in disengagement from school. The study also found that, despite differences in achievement, the students they interviewed agreed that if they had to have homework, they would prefer homework that was more meaningful and relevant, and they wanted teachers to value the homework enough to monitor whether or not it was completed.

**Boonk, L., Gijsselaers, H.J.M., Ritzen, H., & Brand-Gruwel, S. (2018)** This review of studies found that the relationship between parental involvement in their children's schooling and academic achievement depends, in part, on the nature of the involvement. Parent expectations and aspirations, for instance, were most strongly related to achievement regardless of several student demographic factors. They also found that parental involvement positively correlates with academic achievement through the influence of children's motivations, attitudes, and learning strategies. Specifically, when parents exert excessive control over their children's homework, checking for accuracy and completion or providing help, children's academic achievement suffers. On the other hand, when parents offered support by providing comfortable spaces for children to work, supporting their independence and persistence and having high expectations for them academically, they were more likely to perform better in school.

**Cooper 1989, 2001, & 2007; Cooper & Valentine, 2001** The earlier studies made claims about the possible link between time spent on homework and academic achievement. More recently, in a meta-analysis of many studies, they found no correlation for students in elementary school between time spent on homework and achievement. In middle school, they found a moderate correlation, but after approximately one hour of homework, this association faded. Similarly, in high school the correlation faded after two hours spent on homework.

**Dettmers, S., Trautwein, U., Lüdtke, O., Kunter, M., Baumert, J. (2010)** The authors studied the relationship between homework quality, motivation, time spent on homework, and achievement (as measured by PISA scores) with more than 3,000 German high school students in mathematics. Using multilevel modeling, they were able to take

into account differences among schools and classrooms as well as differences between individual students in those schools and classrooms. They found that when homework assignments were thoughtfully selected and interesting to students, students were more engaged in the assignments, spent more time on the assignments, and performed better in math. However, when the assignments were too challenging or not interesting, students were more likely to be unmotivated, spend less time on homework, and put forth low effort on assignments, correlating with lower math performance scores.

**Fan, H., Xu, J., Zhihui, C., He, J., & Fan, X. (2017)** This study is a meta-analysis of studies published between 1986 and 2015, and the authors investigated the relationship between homework and students' math and science achievement in elementary, middle, and high schools across the United States, Europe, and Asia. Twelve studies met the authors' criteria concerning homework and math achievement; however, only one study investigating the link between science homework and science achievement in elementary school met their criteria. The authors of this single study found a small significant effect on math/science homework and math/science achievement in elementary school but that parent/guardian involvement may help explain this finding. Many of the studies the authors reviewed concerning homework in high schools found small positive relationships between math and science homework and math and science achievement; however, looking more deeply, the authors found that this was not true for all students in the studies and that it mattered how homework was defined. When "homework" was operationalized as homework completion, homework grade, or homework effort, the effects of homework on achievement were larger than when "homework" was operationalized simply as time spent doing homework or homework frequency (how often it was assigned).

**Fernández-Alonso, R., Álvarez-Díaz, M., Suárez-Álvarez, J., & Muñiz, J. (2017)** Using multilevel analysis, which allowed the researchers to look at differences at the individual student level as well as differences at the classroom and school levels, they found that schools that assigned more homework had greater differences in the time it took students to complete the homework. In a sample of about 30,000 8th graders in Spain, they found that, in schools that averaged 2 hours of homework per day per student, some students were doing around an hour of homework, while other students were doing about 3 hours per day. On the other hand, in schools that assigned an average of an hour of homework per night, the difference between the fastest (35 minutes per night) and slowest (85 minutes) student was much smaller. And students who spent more time on homework than the average time it took students in their class tended to do worse on tests, while those students who finished their homework more quickly, tended to do better. When looking just at the relationship between the average amount of homework assigned at a given school compared to another school, the authors found a positive relationship between the amount of homework and academic achievement, but at the individual student level, this relationship was negative. Students who needed to spend more time on their homework because of issues such as gaps in their learning or trouble concentrating were in effect being penalized.

**Flunger, B., Trautwein, U., Nagengast, Ludtke, O., B., Niggli, A., & Schnyder, I. (2015)** A longitudinal study of almost 1,900 eighth graders learning French as a second language in Switzerland distinguished the amount of time spent on homework from the effort put into homework (e.g. persistence and compliance). The authors used latent profile analysis to understand the intersection of the extent to which students value homework, with how much effort and time they put in and its relationship to achievement over time. The authors found that, when students put in a lot of time on homework but not a lot of effort, they tended to do less well academically (as measured by both standardized tests and course grades) than those who put in high effort, even when controlling for prior academic performance.

**Kitsantas, Cheema, & Ware, 2011** These researchers used the results from a standardized math achievement test (PISA) to measure whether the time spent on math homework influenced math achievement in a sample of about 5,000 15 year old students. After controlling for prior math achievement, these authors found that, on average, more time spent on math homework correlated with lower math achievement scores. They speculated that these results might be explained by inefficiency, disproportionate efforts, and/or decreased motivation over time when students struggle with the material.

**Maltese, A., Tai, R., & Fan, X. (2012)** The authors used two nationally representative samples of high school students, and after controlling for student demographic backgrounds, motivation, and prior achievement, found no relationship between student grades in STEM classes and homework; however, the researchers, did find a small positive correlation between homework and standardized test scores (these tests were the NELS and ELS, different from the PISA). In this study, the positive link between homework and these standardized test scores diminished significantly for younger students the more time they spent on homework.

**Rønning, M. (2008)** This study drew from a sample of elementary school students in the Netherlands and found that assigning homework may exacerbate existing achievement gaps. Elementary students from higher income backgrounds were more likely to benefit from doing homework than those from lower income backgrounds. This author found that students from low-income backgrounds tend to receive less help with homework than students from higher income backgrounds, suggesting that parents may play a role in helping students complete the homework.

**Rosário, P., Núñez, J.C., Vallejo, G., Cunha, J., Nuñez, T., Mourão, R., & Pinto, R. (2015)** In an experimental study with more than 600 sixth grade students in Portugal, the researchers assigned students into one of three types of homework groups: 1) “Extension Homework,” which asked students to extend the concepts taught in class to real world situations, 2) “Practice Homework,” which asked students to practice or review skills taught in class, and 3) “Preparation Homework,” which asked students to do work that would prepare them for the subsequent class (e.g. read the next chapter in the book). Using multilevel modeling, they found that extension math homework was more likely to be related to higher grades on a math test than practice or preparation homework, regardless of the amount of homework.

**Trautwein, U., Niggli, A., Schnyder, I., & Lüdtke, O. (2009)** These authors studied approximately 1,300 eighth grade students in Switzerland learning French as a second language. Relating the types of homework students were assigned in French class with their end of the year grade, the researchers found that “drill and practice” assignments corresponded with the lowest scores. Related to this, they found that, when teachers approached homework with a more controlling style – one that championed homework monitoring and grading – students expended less effort on their homework and experienced more negative emotions while working on it than did students whose teachers promoted autonomy and student responsibility.

**Viljaranta J., Silinskas, G., Lerkkanen, M., Hirvonen, R., Pakarinen, E., Poikkeus, A., & Nurmi, J. (2018)** In a longitudinal study, the authors found no relationship between doing homework and task persistence on math or reading assignments, but did find that how parents supported students in completing assignments – namely, supporting children’s autonomy and letting them struggle before intervening – was positively related to task persistence and, later, academic achievement.

**Xu, J. (2011)** In a socioeconomically and culturally diverse sample of eighth and eleventh graders, Xu found that the extent to which students perceived the homework to have value for their learning and was interesting to them was positively related to completing the homework, even after controlling for a range of student and classroom characteristics. The author also found that students who were more likely to manage their own homework process (e.g. find a quiet place to do the work, set priorities, reduce distractions), were also more likely to complete it.

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