



Homework- A White Paper on Best Practice from the Research

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Dr. Eian Harm, Research/Career and College Success Coordinator
Don Nesbitt, Assistant Superintendent of Teaching and Learning

Introduction:

Homework is an instructional practice that can provide students with opportunities to deepen understanding and skills. Teachers, students, and parents know *what* homework is, but in order to ensure it is used correctly as a learning tool the most important questions to ask are:

- a. What is the purpose of homework?
- b. What knowledge, skills, and behaviors are being reinforced through the homework?
- c. How much homework is “right” for a particular grade level?
- d. What supports are necessary for students to successfully complete homework?
- e. What roadblocks are there to students attempting or completing homework?

Fisher, Frey, and Hattie (2016) have shown that that, *overall*, homework has little impact on student learning. Homework’s overall effect size (*d*) of 0.29 places it in the 94th position in the “best practice” rankings. This does not mean that teachers should *never* give homework, but rather that educators should understand the best practices based on the research and implement them. A 2006 Gallup Poll showed that even with the numbers on homework in conflict, the overwhelming majority of parents think students do not work hard enough in school or on homework (Rose and Gallup, 2006). With this understanding, it is imperative that we are clear in our messaging regarding homework and its use in order to avoid developing misunderstandings.

Structure of Homework:

Marzano, Pickering, and Pollock (2001) state that “not all homework is the same.” They highlight that there are two common purposes for homework, which are 1) practice and 2) preparation or elaboration. When used for *practice*, homework should involve materials that are *highly familiar to students*. Working with knowledge or skills that students are unfamiliar with is not only inefficient and frustrating, but could also lead to the development of misunderstandings that may persist beyond the particular assignment (O’Connor, 2011). The second purpose of homework as defined by Marzano et al. (2001) is either to prepare students for new materials or have them elaborate on what has already been introduced. In these cases, students should explain their understandings and should be provided access to ample and clear resources for them to find correct information. Examples of these types of homework could be opinion pieces prior to introducing a subject or reflection following a subject. In either case, feedback and the ability for students to revise the homework is an essential element of increasing achievement as seen in the following table:



Effect Sizes of Homework Practices

Homework Practice	Explanation	Effect Size*
Homework assigned	Homework assigned and collected.	0.28
Homework collected with feedback given	Homework collected and feedback given from teacher to student.	0.78
Homework collected, feedback given from teacher to student AND student to teacher, revision allowed.	Homework assigned, scored, and feedback from teacher to student (what should be improved) and student to teacher (what is not understood).	0.83

**** Effect size values are based on students completing the assigned homework. Students who did not complete the homework would not receive any impact (effect).***

This feedback and revision loop has been shown to increase the effect size of homework. Combine this with the notion of *mastery learning* ($d=0.58$; 0.96 for low ability students), students being able to revise assignments to proficiency or mastery, and the outcomes are well over a 30 percentile point gain (Fisher, Frey, & Hattie, 2016; Marzano et al., 2001). This is highlighted by Marzano et al.'s (2001) example that:

Whereas American second graders may spend thirty minutes on two or three pages of addition and subtraction equations, the Japanese are reported to be more likely at this level to use the same amount of time examining two or three problems in depth, focusing on the reasoning processes necessary to solve them (pg. 69).

Purpose of Homework:

Ken O'Connor (2002) reveals that "many teachers inappropriately include homework as a specific part of grades" (pg. 118). As homework is truly a formative piece of evidence for teachers to gather regarding student performance, O'Conner states that it must be a "risk-free chance to experiment with new skills...and should require students to apply what they have learned so they find out what they *really do* understand...and can ask questions about what was not understood" (pg. 118). For homework to be "risk-free" it has to be ungraded. This makes homework an opportunity for practice involving knowledge or a skill. Both Hattie (2009) and Vatterott (2009) highlight that "feedback" from teacher to student (what is understood/ what needs to be improved) *as well as* student to teacher (what is known, where they make errors, misconceptions) is associated with the greatest student achievement outcomes. Thomas Guskey (2003) tells us that:

Grades are not necessary for learning to take place. In fact, research indicates that grades tend to interfere with learning. Grades on homework often get in the way of learning, demotivate students, and create power struggles between students and teachers and between students and parents. Grading is viewed as evaluative by students—the teacher is perceived as a judge. Checking (providing feedback) is diagnostic- the teacher is working



*as an advocate for the student. Should all homework be graded?
No. Should all homework receive feedback? Yes.*

As cited by Vatterott (2009) pg. 112

Several studies indicate that student homework must be tailored to individual student needs while having a very clear purpose. This work must target areas of weakness that students clearly know they must work through in order to improve. Busywork, “shallow”, and in-authentic (non-relevant) homework has been shown to “undermine, rather than support interest in schooling” and is “counterproductive from an intrinsic motivational perspective” (Warton, 2001). Warton also continues by stating that it is “impossible to examine [homework] without a discussion of the likely goals held by students, especially high school students.”

Homework and Grade level

A broad range of research indicates that there is a difference in the effectiveness of homework between grade levels (elementary, middle, high). Research by “homework expert” Harris Cooper (2009) correlated homework variables such as time, amount of problems, and homework actually completed with mathematics achievement and found no association between the variables in elementary schools. Marzano et al. (2001) show that homework’s effectiveness *increases* as students move through grade levels indicated by effect sizes of .15 in Elementary, to .31 in middle, to .64 in high school. Homework seems to be most effective in students’ senior year as they must be prepared for the transition to a post-secondary environment (Conley, 2010, Conley 2014). Marzano et al. (2001) show that though there is little correlation between homework for elementary students and *achievement*, it is recommended that *some* homework is given in grades 2 and beyond “to develop good study habits, foster positive attitudes toward school, and communicate to students the idea that learning takes work at home as well as at school” (p. 62). Marzano et al. uses the following table to provide guidelines:

Recommended TOTAL Daily Homework Amounts by Level (all subjects combined)

Grade Level	Range of Homework Minutes Per Day
Primary	10-30
Upper Elementary	30-90
Middle School/Jr. High School	50-120
High School	60-120

**** Values indicate the range of minutes from several studies and are total homework amounts per day summed across all subject areas.***

Marzano et al. conclude that “though there is certainly a practical and ethical limit to the amount of homework assigned at the high school level, the more homework students *do*, the better their achievement.” That is, the most important factor is the homework that students complete- not the amount of time spent or the amount of homework given. Kitsantas, Cheema, and Ware (2011), summarizing work done by Cooper, show that it is the amount of work *completed and the feedback and revision process given* rather than how much work was assigned or whether the student turned it in on time, that correlates with achievement. An emphasis must be placed on students *doing* the work--



regardless of the behaviors associated (time management, engagement, etc.). In short, as Kitsantas et al. state “time spent completing homework *in school* had a relatively large effect on student achievement whereas time spent completing homework outside of school had an insignificant effect on such achievement” (pg. 313). In fact, time spent on homework out of school has been shown to widen the knowledge gap between high and low-achievers, minority race groups, as well as students who lack intrinsic motivation or involved parents.

Separating Academics from Behaviors

In O’Connor’s book *A Repair Kit for Grading* (2011) the “#1 fix” for grading is to separate student behaviors (effort, participation, adherence to class rules) from grades—to include only achievement. With this context in mind, the notion of lowering student “grades” as a result of missing homework—or worse yet, not getting homework correct, goes against this rule. Since homework should be considered formative, it should not be part of students’ grades. Additionally, many teachers use the homework “grade” as, in reality, a method of assessing behavior—ie. did the student follow instructions? Did they manage their time effectively? Are they motivated? The challenge educators face in including behaviors in the academic grades is that teachers, especially in high school, have no other way to communicate separately behaviors they think are important. Standards-based grading with separate desirable behavior ratings helps alleviate this concern. This rating would have to be a part of the course or class completion requirements, however for students, parents, and teachers to take it seriously.

Homework and different student groups

The outcomes on student achievement due to homework are shown to vary among different groups of students. Differences are found among high vs. low-achieving students as well as socio-economic status. Much research indicates that students perceive most homework they are given as routine and mundane (Cushman, 2010; Reeves, Jung, and O’Connor, 2017). As a result, the following statement by Bempechat, Li, Neier, Gillis, and Holloway (2011) becomes applicable-- that high achievers tend to be bored and low achievers (not understanding the material) are bored, uninterested, or even humiliated. In several studies, the high achievers did their homework despite acknowledging that they were not learning from it. Lower achievers, in contrast, revealed a pattern of inconsistent compliance with homework demands, a desire to avoid homework altogether, and a less developed sense of their academic obligations. In short- “these students seemed undeterred by...the lower grades that they knew resulted from leaving homework unfinished” (Bempechat, et al., pg. 268). Again, it is the amount of homework *completed correctly*, through the revision process, which results in higher achievement-- not the amount assigned or attempted. Policies should be set up to promote the completion of homework, the revision and improvement of homework, and the targeted practice of skills, rather than the assignment of homework.



Having a Homework Policy

In order to provide consistency, a clear homework policy should be established at a level that affects as many students as is possible, but is still realistic and effective. Whether this policy is set at the district, school, or classroom level, it should establish guidelines to communicate clearly with both students and parents. This should articulate items such as: purposes of homework, the amount of homework that will be assigned, consequences for not completing the homework, a description of the types of parental involvement that are acceptable, and where students will access resources and materials to complete the homework” (Marzano et al., 2001). This is especially important at the secondary level in order to prevent each teacher (which could be up to eight (8) for any particular student depending on scheduling) from developing their own particular location, website, and format that students and parents have to navigate and decipher in order to be successful. Resources to aid in homework should be readily available through a consistent location and format. Though parental involvement in homework should be kept to a minimum, the clear policies such as those described will help students and parents remain confident in the purposes and value of the homework through less confusion and negative feelings regarding its completion. West Ada School District is currently working collaboratively with schools to develop a district policy for homework.

Conclusion

Homework, though a “staple” of American education, is really a tool that is used to extend learning. Recent research reveals best practices in terms of homework and its use. This research reveals that homework should align with the following:

1. Have a clear purpose and be aligned with students’ particular learning needs (individualized).
2. Should either utilize information and concepts that are highly familiar to students (practice); or be used to explain understandings and possibly enable students to “go deeper” in their learning.
3. Resources must be clear and locatable for student access.
4. Must be a “risk-free” chance to experiment and practice. In most cases it should not be entered into the gradebook (graded) in a summative manner, rather the teacher should use it to provide feedback to students (scored).
5. Academics (knowledge and skills) should be reported separately from behaviors—assignments typically should not be penalized or not accepted for lateness etc.
6. Homework’s effectiveness increases as a student progresses through grade levels.
7. Homework revised and completed to mastery is the most impactful.
8. Homework completed *in school* is a valid substitute for work being done outside of school.
9. Clearly defined guidelines should be set at the highest level of impact possible to provide consistency and to ensure understanding by students and parents.

****See Appendix A for Examples and Non-Examples of practice aligned with the 9 Guidelines.***

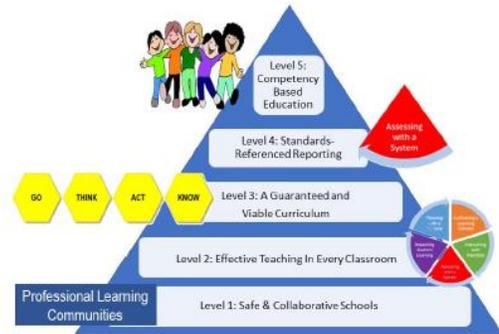
As the West Ada School District moves to align its work with the Career and College Success Model (shown below), focused on the four quadrants (THINK, ACT, KNOW, GO), and implementing Marzano’s High Reliability Schools Framework, the use of work outside of the classroom (homework) will help



extend learning opportunities. The implementation of standards-based grading will separate academics from behavior from a reporting standpoint and student mastery of “standards” will be reported. To meet these academic goals it is essential that students put in effort. It is therefore vital that homework be used effectively as a tool to extend learning, provide practice, and help maintain student motivation if we are to ensure that *all* students develop the Career and College Success skills necessary for their future.

Career & College Success Model

“The West Ada Way”



CCSM Measured by HRS

4/24/2018



APPENDIX A- HOMEWORK GUIDELINE EXAMPLES AND NON-EXAMPLES

Homework Guideline	Example (best-practice)	Non-Example
<p>#1 Has a clear purpose and is aligned with students' particular learning needs (individualized).</p>	<p>Leveled readers to practice at home, online practice using formative assessment results, eBook/audio book options for reading, use of proficiency scales with homework to ensure students understand what needs to be practiced.</p>	<p>Busy work to "fill" a gradebook, giving homework without feedback, assigning <i>all</i> students 35 problems, nightly writing of words 3x each/sentence creation for <i>all</i> students in a classroom.</p>
<p>#2 Should either utilize information and concepts that are highly familiar to students (practice); or be used to explain understandings and possibly enable students to "go deeper" in their learning.</p>	<p>Reading every night with students. Rereading a poem that was practiced in class. Students identifying objects at home that start with a certain letter. Revising a paper based on feedback given in class.</p>	<p>Assigning untaught material because time ran out in class. Graded homework on a new concept. Homework that has little relation to what was taught or is in notes and counted as part of grade.</p>
<p>#3 Resources must be clear and locatable for student access.</p>	<p>Teacher websites, online links for helpful hints, printed resources for students without access to computers/internet, parents provided access or information beforehand, rubrics for clarity and exemplars provided.</p>	<p>HW assignment is complicated and/or student is dependent on an adult to access needed information in order to complete the work successfully. Many newly introduced problems without support, required use of resources that are not available or difficult to find.</p>
<p>#4 Must be a "risk-free" chance to experiment and practice. In most cases it should not be entered into the gradebook (graded) in a summative manner, rather the teacher should use it to provide feedback to students (scored).</p>	<p>Opportunity to practice skills using games (online/hands on). Re-assessment occurring until end of grading period. Recording assignments in gradebook for students/parents to view progress- but not counted in students' grade. Providing students/parents feedback on homework- to ensure accountability acknowledges effort and helps parents see the relationship between the work/practice and final grade.</p>	<p>Practice assignments that count towards students' final grade without an opportunity for students to reach proficiency with the content (grading practice). Averaging of multiple homework grades that are included in the final class grade.</p>



<p>#5 Academics (knowledge and skills) should be reported separately from behaviors— assignments typically should not be penalized or not accepted for lateness etc.</p>	<p>Including notes on late or missing work in PowerSchool while reporting formative “scores” to communicate student understanding.</p>	<p>Including non-academic items such as behavior, preparedness, tardiness in an academic grade (penalizing for behavior). Not accepting late work, deducting points or percentages for work being late.</p>
<p>#6 Homework effectiveness on achievement increases as a student progresses through grade levels (K-12).</p>	<p>Building routines at home to have meaningful, repeated practice (individualized to student needs). Elementary study skills and habits. High school assignments to mimic college in 11th and 12th grade.</p>	<p>Weekly packets being sent for all students, tying completion of homework to school privileges (Fun Friday/recess) and punishment (grade loss/detention). Inauthentic, rote, too easy or too difficult assignments in high school.</p>
<p>#7 Homework revised and completed to mastery is the most impactful.</p>	<p>Completing 5 problems correctly without error is more effective than 30 with multiple mistakes. Having students continue to revise and relearn homework in small groups until they master the content.</p>	<p>Homework assigned and not “scored”. Giving points for “completion”. Not providing an opportunity to revise/fix missed problems or work. Thinking <i>quantity</i> equates to <i>rigor</i>.</p>
<p>#8 Homework completed in school is a valid substitute for work being done outside of school.</p>	<p>Homework completed in class with students revising and re-learning. Homework intervention time built into the school day, daily work time built into class instructional time - collaborative groups, independent practice.</p>	<p>When a student is pulled from enrichment opportunities to complete homework (i.e. Art time, electives). Keeping students from recess because they did not complete homework. Using homework as an “intervention” without educating parents.</p>
<p>#9 Clearly defined guidelines should be set the highest level of impact possible (school or district) to provide consistency and to ensure understanding by students and parents.</p>	<p>Consistent district or school guidelines communicating with students and parents on expectations around amount of homework expected, location of resources, explanation of learning consequences for not doing homework. Professional Learning Communities to align homework practice within school and/or team.</p>	<p>Individual classrooms having their own expectations, processes, and resource locations. No collaboration or discussion about homework practices and expectations.</p>



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