Research Roundup

Homework
Introduction

Through our Roundups, we strive to keep you connected to key research on a topic of interest as well as new high-quality resources and research to support classroom instruction.

- (1) April Research Topic: Homework
- (2) New Resources & Research
Table of Contents

- Homework Overview
- Homework Best Practices
- Key Research About Homework
- Homework Cautions
- From the Hub: New Resources & Research
THIS MONTH’S TOPIC: HOMEWORK
Homework Overview

Many districts are thinking about how to maximize all opportunities to improve student achievement, and homework has been shown as a tool to do just that. As you begin to look toward next school year review these homework best practices and considerations based on the leading research.
What the Research Says: Homework

Homework can be valuable and positively impact student achievement when done well. Research suggests **four key variables** to maximize the potential benefits of homework:

- Grade level differences
- Time spent on homework
- Homework feedback
- Frequency of homework
Research Takeaways on Homework Best Practices

<table>
<thead>
<tr>
<th>Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td>- Be intentional about the purpose of the assignment - is it to reinforce ideas, prep students for the next lesson, or extend their classroom learning?</td>
</tr>
<tr>
<td><strong>Amount</strong></td>
</tr>
<tr>
<td>- Assign 0-20 minutes of total daily homework in the 1st grade and add on about 10 extra minutes per grade.</td>
</tr>
<tr>
<td>- Monitor the amount of homework assigned so that it is appropriate to students' age levels.</td>
</tr>
<tr>
<td><strong>Feedback</strong></td>
</tr>
<tr>
<td>- Provide formative feedback regularly.</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>- Assign homework regularly.</td>
</tr>
</tbody>
</table>
Homework has little effect on student outcomes at the elementary school level, but can impact non-academic factors. Homework in the elementary grades (1-5) can help students develop good study habits and skills, foster positive feelings about school, and reinforce classroom learning. There are limited impacts on student outcomes. Too much homework can have negative effects on students, including increased stress and disengagement.

**Average Gains on Unit Tests:**
Grades 4–6: 6 percentile points

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Optimal Homework Time Per Day (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Grade</td>
<td>0-20 minutes</td>
</tr>
<tr>
<td>2nd Grade</td>
<td>20 minutes</td>
</tr>
<tr>
<td>3rd Grade</td>
<td>30 minutes</td>
</tr>
<tr>
<td>4th Grade</td>
<td>40 minutes</td>
</tr>
<tr>
<td>5th Grade</td>
<td>50 minutes</td>
</tr>
</tbody>
</table>

**Sources**
- Cooper (1989)
- Cooper, Robinson, & Patall (2006)
- Marzano & Pickering (2007)
- Canadian Council on Learning (2009)
- Miami Dade Public Schools (2009)
Homework has more positive effects on student outcomes at the middle and high school levels.

The largest achievement gains related to homework are seen at the high school level. Homework in the later grades can be used to reinforce classroom learning, but also to prepare students for engagement and discussion in the next lesson, or to enrich classroom learning by having students apply their skills in new and more challenging ways.

**Sources**
- Cooper (1989)
- Cooper, Robinson, & Patall (2006)
- Marzano & Pickering (2007)
- Canadian Council on Learning (2009)
- Miami Dade Public Schools (2009)

---

**Average Percentile Gains**
- Grades 7–9: Percentile gain = 12
- Grades 10–12: Percentile gain = 24

**Grade Level** | **Optimal Homework Time Per Day (Total)**
--- | ---
6th Grade | 60 minutes
7th Grade | 70 minutes
8th Grade | 80 minutes
9th Grade | 90 minutes
10th Grade | 100 minutes
11th Grade | 110 minutes
12th Grade | 120 minutes
The type of feedback students receive can impact student outcomes.

There is little research demonstrating exactly what types of homework have the biggest impact on student achievement. However there are certain characteristics of assignment feedback that often lead to better student outcomes.

**Feedback**

- Formative feedback that guides student learning on assignments tends to lead to better student outcomes overall.
- Conversely, the use of praise and extrinsic rewards for assignment performance seems to have little or no effect on student outcomes.

**Sources:**

- Hattie & Timperley (2007)
- Canadian Council on Learning (2009)
- Miami Dade Public Schools (2009)
Homework frequency matters for students.

**Homework Frequency**

- Some studies show that students who are given homework regularly (as opposed to sporadically) tend to have higher achievement overall.
- Researchers hypothesize that this is related to developing strong study skills and routines that then lead to improved learning.

**Sources:**
- Trautwein (2007)
Homework can increase achievement gaps.

Several studies show that low-income students complete less homework overall compared to students who come from wealthier families, which can lead to increasing achievement gaps between low-SES and minority students when compared to more advantaged peers.

The research shows several reasons for these disparities, including access to Broadband internet, access to outside resources and tutors, having parents who are able to offer help on homework, and having extra after jobs or family responsibilities.

**Implications for Districts:**
- Be aware the disparity.
- Keep the causes of the disparity in mind when designing homework policy and assignments.
- Limit new learning in homework to mitigate the need for outside resources.

**Sources:**
- Miami Dade Public Schools (2009)
- Horrigan (2015)
- OECD (2014)
# Potential Pitfalls of Homework

## Amount of Homework
- More homework doesn’t necessarily mean better results. After a certain amount (approximately 10 minutes per grade), the positive effect of homework disappears and students may become more stressed and disengaged as a result.

## Type of Feedback
- Regular formative feedback that guides student learning on assignments can be great for kids, but praise and extrinsic rewards for completing homework will do little to improve student learning.

## Achievement Gaps
- Be aware of different student needs within the classroom. Students from low-SES backgrounds may have outside factors that affect homework completion and performance.
FROM THE HUB: NEW RESEARCH AND RESOURCES
1) **Assessment Resources:** Last month’s Roundup featured best practices in test prep. As you’re gearing up for the TNReady exams, remember that a full length practice test can help prepare students. On the next slides, you’ll find a list of the best assessment resources out there according to foremost experts in ELA and math standards.

2) **Instructional Resources:** As you begin planning for next year, Louisiana Believes is a great starting place for Eurkea implementation guides, planning resources for K-12 ELA and math, and instructional materials reviews.

**New Research:** A new RAND study shares important findings about how teachers across the United States are using the EngageNY curriculum.
Math Assessment Resources

- **SAP Mathematics Mini-assessments**: Mini-assessments that represent the demands of college- and career-readiness standards in mathematics K-12.
- **Smarter Balanced Practice and Training Tests**: Practice Tests and the Training Tests that provide students with a preview of test questions aligned to academic standards for grades 3–8 and high school in both English language arts/literacy and math.
- **PARCC Released Items**: Released test items from this year’s PARCC assessments.
- **Illustrative Mathematics**: Instructional assessment tasks, lesson plans, and other resources for teachers.
- **NAEP Sample Question Booklets**: The Sample Questions booklets contain many of the features of the actual test booklets, including instructions, sample subject-area questions and student responses from previous NAEP.
Math Assessment Resources (continued)

- **Mathematics Assessment Project:** Summative tests or tasks, classroom challenges, and professional development modules.
- **Math Common Core State Standards Mapper:** Similar to the Coherence Maps, this resource shows how standards are related to each other and includes sample assessment items related to each standard from sources like Illustrative Mathematics, Smarter Balanced, and PARCC.
ELA Assessment Resources

- **SAP Mathematics Mini-assessments**: Mini-assessments that represent the demands of college- and career-readiness standards in mathematics K-12.

- **Smarter Balanced Practice and Training Tests**: Practice Tests and the Training Tests that provide students with a preview of test questions aligned to academic standards for grades 3–8 and high school in both English language arts/literacy and math.

- **PARCC Released Items**: Released test items from this year’s PARCC assessments.

- **NAEP Sample Question Booklets**: The Sample Questions booklets contain many of the features of the actual test booklets, including instructions, sample subject-area questions and student responses from previous NAEP assessments. The Writing items are not text-based and, therefore, not aligned to the Tennessee standards.
The Louisiana Department of Education provides a wealth of quality instructional resources for teachers that are aligned to the standards. These resources primarily support Eureka and Learn Zillion.

**Highlights include:**

- **K-12 ELA Planning Resources:** These include curricular guidebooks, enhanced crosswalks, and instructional strategies.
- **K-12 Math Planning Resources:** These include Eureka implementation guides, rigor guides, enhanced crosswalks, sample year plans, and more.
- **Tiered Instructional Materials Reviews:** These tiered instructional materials reviews describe the degree of alignment with state content standards.
This new RAND study examines how EngageNY materials are being used throughout the United States in order to provide some insights into how open educational resources can best be used to support teaching and learning.

**Key findings include:**

- The majority of teachers using EngageNY are doing so at the urging of their district.
- Teachers are using these materials because they are aligned to the standards, not just because they are free.
- Teachers tend to adapt the EngageNY materials to fit their needs.
- ELA teachers are more likely to use the EngageNY curriculum every day than math teachers who tend to pick and choose resources based on the instructional topic.