

# The Purpose of High-Quality Common Independent Practice Assignments

If information is repeated in a distributed fashion or spaced over time,  
it is learned more slowly but is retained for much longer.

—Henry L. Roediger III and Mary A. Pyc

**A**lthough not always interpreted this way, when implemented well, homework can become one of the most effective daily formative assessment process tools available to your team if you envision the fundamental purpose of homework as *independent practice*. However, it cannot be just any kind of independent practice. It must be independent practice that offers feedback and expected action as part of the student learning experience. And it must be practice that is tightly aligned to learning standards, from the current and previous units, for the grade level or course. For more information about aligning assignments and assessments to intended learning targets, you can read *Mathematics Assessment and Intervention in a PLC at Work* from this series.

Note that for the purposes of this book, we intentionally substitute the term *independent practice* for the term *homework*. The term *homework* brings with it decades of often negative meaning. It is a term that conjures up images of a difficult student routine that can be described this way: assign students a set of massive mathematics practice problems that mirror classroom instruction, send students home to complete the lengthy assignment, check the assignment for completion at the start of the next class, and record a cumulative completion grade for the report card.

Absent from this current *homework* “brand” is a sense that the assignment could be used as another formative tool for improved student learning. So, in this book, we use the term *independent practice* frequently to

underscore why homework is being assigned: for the student to perform meaningful practice *independent of the teacher*. This then embraces a different and more meaningful vision for the design and use of homework.

## TEACHER *Reflection*

How would you describe your students’ actions and reactions when they are assigned independent practice in your mathematics class?

Do students think of homework assignments as opportunities for independent practice, and are they expecting to receive meaningful formative feedback on their work and re-engage with the assignment to learn from mistakes or errors?

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National Council of Teachers of Mathematics president Matthew Larson (2016) succinctly summarizes

why independent practice is perceived as important: “Despite calls to reduce or ban homework, most teachers of mathematics continue to assign it because we recognize that success—whether in mathematics, music, or athletics—depends on at least two common components: formative practice and perseverance.”

Larson (2016) challenges teachers to adopt a *common-sense* mindset when engaging students in independent practice. Suffice to say, purposeful independent practice provides students with improved development and proficiency in mathematics skill and understanding.

The primary *purpose* of these assignments is to provide students the opportunity for independent practice on learning standards introduced or mastered in class, as well as with mathematical tasks connected to prior learning standards.

The primary *use* of independent practice is to help engage students formatively in their own learning. As an analogy, consider how one learns to play the guitar. During a guitar music lesson, the teacher provides the student opportunities to practice playing scales, notes, and chords through guided practice. The student also learns to play ever more complicated pieces of music. The student then practices, developing both procedural fluency *and* conceptual understanding, in order to apply those music skills to new, more complex pieces. The expectation for student practice is not limited to the time spent under the observation of a highly skilled music instructor. The expectation is that the student will practice independently outside the lesson. That is, the student will practice *without* the teacher

as well. In fact, the instructor plans the next learning session under the assumption the student is practicing regularly (for example, thirty minutes per day) between lessons. When the student returns for the next lesson, the instructor quickly assesses whether the independent practice was beneficial for building the next learning experience and provides formative feedback to inform the student’s future practice sessions.

Douglas Reeves (2011, 2016) and John Hattie (2009) provide insight into four essential characteristics of meaningful feedback that create a basis for effective formative feedback to students. Think of this as your attempt to provide FAST (fair, accurate, specific, and timely) corrective feedback opportunities for students.

- **Fair:** Effective feedback rests solely on the quality of the student’s demonstrated work.
- **Accurate:** Effective feedback allows students to acknowledge what they are doing well as they work on the assignment.
- **Specific:** Effective feedback helps students correct their thinking by focusing attention on specific errors or misconceptions to the solution pathway they chose for the task.
- **Timely:** Effective feedback must be just in time as students work on the outside-of-class practice. If there is too great a gap between the assignment and the feedback provided, then the usefulness of that feedback fades and a learning opportunity is lost.

## Personal Story “BILL BARNES

Early in my teaching career, I remember working with a student named Vernon. One day in late September, I asked Vernon why he stopped completing his homework assignments; he had failed to turn in three assignments in a row. Vernon looked at me wryly and said, “It’s because it is clear to me that you are not looking at my work. You are just walking around to check for completion. If you are not going to take this seriously, why should I?” I was shocked and a bit angry at first. I decided to ignore the stinging comment and check homework completion for Vernon’s classmates. By the time I had finished my rounds, I announced to the class, “Vernon is absolutely right. I am not taking your homework as seriously as I am asking you to take it.” Every night I would assign problems without thinking about how each homework assignment might be used, strategically, to build student understanding. On that day in September, Vernon, in an instant, made me question, and then change the way I used homework in my mathematics classroom.

Independent practice is an essential element of the student learning process. However, the best practice is not immediately clear. So, what is clear?

- Assigning independent practice (homework) cannot be a superficial exercise for your team.
- Anyone who is an expert on anything devotes significant time to practice (Gladwell, 2008).
- If we deny students an opportunity for independent practice, we deny them the very thing they need to develop real competence (Anderson, Reder, & Simon, 1995).

The specific purpose for creating common independent practice assignments is key to providing equity for students across classes and grades and promotes quality through collaboration.

## Develop Common Independent Practice Assignments

There are many reasons for achievement and opportunity gaps, reasons that sometimes extend beyond your direct sphere of influence, including poverty, homelessness, or the absence of a stable home life. All too often, routines and policies and the resulting differential in student learning expectations and outcomes manufacture (even unintentionally) labels for the achievement gap, but more accurately reflect an opportunity gap.

According to authors Richard DuFour, Rebecca DuFour, Robert Eaker, Thomas W. Many, and Mike Mattos (2016):

One of the most powerful, high-leverage strategies for improving student learning available to schools is the creation of frequent, high-quality common formative assessments by teachers who are working collaboratively to help a group of students acquire agreed-on knowledge and skills. (p. 141)

So, if the “creation of frequent, high-quality common formative assessments” is a “powerful, high-leverage” strategy for improving student learning, and if you can leverage your independent practice assignments as a meaningful formative assessment tool, then your team should ask, “Why would we develop (homework) assignments for our grade-level or course-based mathematics units in isolation from one another?”

## TEACHER *Reflection*



Do you currently use *common* mathematics independent practice (homework) assignments for your grade-level or course-based team?

If the answer is *no*, why not?

If the answer is *yes*, describe the benefits or frustrations of this practice.

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It is possible your team hasn't yet dedicated scheduled time to scrutinize your current independent practice policy. It is also possible you have not considered the equity imperative as it relates to the design of common independent practice.

The independent practice you design, as well as the way your team uses it to formatively guide student learning, must be carefully thought out and planned during collaborative team meetings with colleagues. There should be agreement about design and use *before* the unit begins if at all possible.

Why do your independent practice assignments need to be common? In *Learning by Doing*, authors DuFour et al. (2016) indicate that common assessments:

- Promote efficiency for teachers
- Promote equity for students
- Provide an effective strategy for determining whether the guaranteed curriculum is being taught and, more importantly, learned
- Inform the practice of individual teachers
- Build a team's capacity to improve its program
- Facilitate a systematic, collective response to students who are experiencing difficulty
- Offer the most powerful tool for changing adult behavior and practice (p. 149)

These same equity and opportunity arguments hold true for *common independent practice*. In fact, you minimize the wide variance of expectations from colleague to colleague (an inequity creator) when you work collaboratively to design high-quality common independent practice assignments aligned with the identified essential learning standards for the unit.

In their landmark publication *Principles to Actions*, the National Council of Teachers of Mathematics (NCTM, 2014) lists the collaborative development of common formative assessments (in this case, *independent practice*) as critical to supporting equitable instruction as part of their professionalism principle.

The journey to improved independent practice begins with the first step of engaging in transparent conversations with colleagues about your current homework routines. How similar are your practices? How varied is the cognitive demand of tasks in your classroom assignments and the tasks you chose for at-home, independent practice assignments? Are students taking ownership of their learning as a result of independent practice design and the formative nature of its review?

Your colleagues have most likely given a lot of thought to their criteria for independent practice. Yet without the necessary transparent discussions, routines could result in uneven learning experiences for students

over time (Toncheff & Kanold, 2015). For example, one teacher might believe that assigning fifty low-level, cognitive-demand skill review tasks is the best use of independent practice time. Another teacher might believe that five carefully selected tasks is best. By the very nature of each teacher's belief, his or her students will achieve very different learning outcomes.

Figure 1.1 will help your team gain clarity through transparent conversations about your current independent practice routines. What is working well? What aspects need improvement?

Prior to your next collaborative team meeting, ask each team member to develop responses to the questions in figure 1.1. Then, at your next team meeting, share and compare responses and talk about the team's consistencies, your inconsistencies, and the degree to which your independent practice processes function formatively.

Agreeing on the purpose of your independent practice assignments by answering the questions in figure 1.1 *together* is a good first step for your collaborative team. It will most likely reveal quite a wide variance in your practices and routines.

The next question becomes, *Who is right?* How would you and your team evaluate the quality of your independent practice routines? How do you know the assignments are of high quality? How do you know the

## Personal Story “BILL BARNES

Throughout my teaching career, my homework routines became more effective because I began to think very carefully about homework design. I made sure that my homework assignments were tightly aligned with the intended curriculum. I also became more attentive to the intended level of rigor, with opportunities for practicing skills from recent units as well as prior units.

I was much less confident when it came to describing whether or not homework assignments actually improved student learning. Upon reflection, there are two reasons why I could not speak to homework effectiveness with certainty.

First, I still wasn't thinking about homework (or the independent practice expectations for my students) as an essential component of a formative student learning process. Second, it did not occur to me to ask my colleagues about their routines or my students about how I might improve my homework routines to increase their understanding.

Scrutinizing any of your typical teaching routines is always a courageous step for you and your colleagues. It means you are prepared to make yourself transparent and vulnerable by openly sharing your professional practice with a critical eye. It means you are willing to do whatever it takes to improve student learning.

**Directions:** Use the following prompts to guide team discussion of the independent practice (homework) assignments given to your students for the next unit.

**Purpose of homework (independent practice):**

1. Why is it important for our students to engage in formative independent practice?
2. Why is it important that our team develop *common* independent practice assignments for students?

**Nature of homework (independent practice):**

3. How do our daily independent practice assignments support student understanding of identified learning standards for the unit?
4. To what degree is the level of rigor (cognitive-demand expectations) of the mathematical tasks for independent practice balanced?
5. What is the duration of a typical independent practice assignment?
6. How do we determine common scoring agreements and identify student proficiency?

**Figure 1.1: Team discussion tool—Review of current independent practice routines.**

Visit [go.SolutionTree.com/MathematicsatWork](http://go.SolutionTree.com/MathematicsatWork) for a free reproducible version of this figure.

assignments will yield meaningful evidence of student learning for students and teachers?

As a team, mastering the art of teaching happens through the collaborative design of assessments aligned with standards, the selection of learning experiences that are more likely to lead to student understanding, and the design of independent practice assignments as formative assessment tools.

If you are a singleton teacher, consider reaching out on social media to connect with other teachers in your district. If you are a singleton teacher in your district, consider engaging in online communities such as the Mathematics Twitter Blogosphere (#MTBoS). There, you will find other teachers engaging in professional sharing. Reach out to get feedback and learn about how other teachers are managing homework as independent practice. Maybe you can join a video chat to connect with a teacher outside your district, thus forming your very own virtual PLC.

Up to this point, you have examined the purpose of independent practice as part of a learning cycle for students and the potential inequities if those task choices are not common among your colleagues.

As you reflect next on your current independent practice assignments, how do you know if they are high-quality assignments? We explore the idea of quality in the next section.

## Improve the Quality of Independent Practice Assignments

The next collaborative team step is improving the quality of your independent practice assignments. You can use figure 1.2 (page 14) to evaluate the nature of your mathematics independent practice assignments. Figure 1.2 provides indicators you can use to reflect on your current homework routines.

When reflecting on the scores of your independent practice assignments, which of the seven indicators were surprising? In the next section, you will take a deeper look at indicators 3–6 from figure 1.2. As you read, jot down ideas that would be useful in advancing your team's approach to the design of independent practice assignments.