



Student-Centered Formative Assessment Change Routine

Google Quiz Practice; Math (Algebra I); Grade 9

Based on the work of Pam Garadedian (Central Falls H.S.) as part of the Student-Centered Assessment Network (SCAN) with funding from the Nellie Mae Education Foundation <https://www.scanetwork.org/>

Problem of Practice

Students go to the teacher first rather than using their own resources (e.g., notes, examples, reasoning, peers) to solve problems, make corrections to work, prepare for assessments, or monitor their understanding to drive their own learning over time in mathematics. This lack of agency in mathematics class reduces student learning as students lose the opportunity to develop their own understanding and students use teacher time that could be spent with students who do need teacher intervention.

To address this, the *Google Quiz Practice* allows students to engage in low-stakes, self-guided practice with some limited, automated feedback, allowing them to revise (using notes and other aids) and practice as much as they feel is necessary to prepare for an assessment. Students can check answers without going to the teacher and the teacher will have more time to work with students who need the extra support. About $\frac{3}{4}$ of students reported that using Google Quiz assignments helped them understand the work better. The teacher reported spending less time confirming correct work and having more time working with students who really need the help. There was a moderate positive correlation between the number of times students worked in Google Quiz and improvement in scores. The greatest effect was seen for the last topic.

Measures

1. The teacher uses a conventional **summative assessment** (e.g., test, quiz), records results, and compares percent correct to the number of times each student took the Google Practice Quiz
2. A student **survey** is administered where students rate the usefulness of the activity. Questions were written in English and Spanish and measured:
 - a. *how many times students looked at examples during a Google Quiz session*
 - b. *how many times students asked another student for help during a Google Quiz session*
 - c. *how many times students asked the teacher for help during a Google Quiz session*
 - d. *whether they think working in Google Quiz helps their learning*
3. Teacher maintained a classroom log of which students are looking at related examples or seeking assistance from peers before seeing the teacher and those students needing prompting or support from the teacher. For students receiving teacher help she also tracked whether the help was needed for the current topic or was to remedy a learning gap.

Procedure

1. The teacher **weekly** creates a practice quiz using Google Forms to create a self-scoring quiz. These quizzes contain practice problem sets focused on the target skill or concept for that week. Students have access to the quiz and can take the quiz as many times as they wish before the summative assessment.
 - a. The problem sets contain multiple choice questions that shuffle randomly. This allows students some variation in the different times they take and retake the practice quiz.
 - b. Students can immediately see which questions they got correct or incorrect, and use this feedback to focus on problem areas using notes or working with peers to discuss errors and corrections.

2. The teacher describes options for students to reflect on questions missed in the problem set:
 - a. Consult examples in notes or practice problems.
 - b. Ask a peer for assistance in diagnosing errors or giving advice.
 - c. Meet with teacher.
3. Teacher provides some opportunity for independent and small group work on corrections, reflection, and retaking of the practice quiz. This can be done during class and students who want to work more have out of class access.

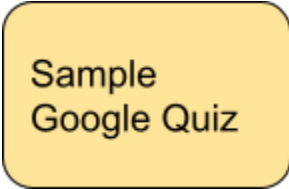
SCAFFOLD The teacher may need to consider **other help** for students who have difficulty working with peers or taking adequate notes to support their reflection (e.g., notes on procedures or differences in examples).

OPTION The teacher may consider pairing students initially and providing a framework for collaboration.

4. During class time the teacher still meets with students focusing on students who she knows are grade-levels behind and those for whom other strategies have not worked.

Key Resources

Click on an icon to get the link.



Sample
Google Quiz

Making a
self-scoring quiz in
Google Forms

Algebra
Google Quiz
Survey
Questions

Variations

No other SCAN teacher has tried variations to this particular change idea presently; please look for updates in the future.