A Reflective Look at Formative Assessment: Using Math Exit Slips to Check for Understanding

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Today's building level instructional leader is faced with an enormous challenge in ensuring that all students are meeting end-of-year proficiency targets. The current climate of accountability, particularly in regards to high-stakes end-of-year assessments has placed the burden of assessment upon students, parents, teachers, team or department leaders, and administrators. The challenge of checking for understanding often lies in the area of resources- specifically *time*. Educators simply do not have time to reflect upon end-of-year, end-of-quarter, or even end-of-unit summative assessments for meaningful data to gauge whether or not students are achieving in a professional learning community. This paper reviews implementation of formative assessment using math exit slips in the elementary setting (Sterrett and Fiddner, 2007) and suggests "next steps" for the educational leader in working to effectively "check for understanding" (Fisher and Frey, 2007).

It is essential to carefully reflect, as a team, on the "Professional Learning Community (PLC) questions" that Rick Dufour (2004) emphasizes:

1.) *What do we want each student to learn?*
2.) *How will we know when each student has learned it?*
3.) *How will we respond (to those who have not yet succeeded…and those who have)?*

Teachers and building leaders must have accessible "real time" student and classroom data that can enable them to reflect upon teaching and learning. It is vitally important that educators use data that can give meaningful insights to how students are learning. Jay McTighe stresses that "ongoing assessment and adjustment are the *key* to improved performance" (p. vii). The use of math exit slips can provide real-time, "live," data and allow teachers and students to share ownership in ensuring greater academic success. More importantly, it can allow the team (including teacher, principal, math specialist, and others) to work together to adjust and respond effectively in order to reach every student. As Douglas Reeves (2008) notes, effective formative assessments can enable educators to "create short term wins" (p. 23) that can propel their success as teachers and their students' success as *learners*.

By focusing on team planning, design and implementation of weekly exit slips, differentiating the assessments, collection and representation of data, and, most importantly, reflecting together on next steps, schools have seen success in math classrooms (Sterrett and Fiddner, 2007; Sterrett, Fiddner, and Gilman, 2010). Particular focus should be paid to three areas in effectively using math exit slips as a "check for understanding" that are supported by best practice research (Daniels and Bizar, 2005) and that will yield greater collaborative efforts in instruction and learning. These three key components are: A Consistent Plan and Process, Differentiated Learning and Assessments, and Data-driven Decision-Making.

A Consistent Plan and Process

A weekly chart from each teacher which has the student name and the particular strand that is being taught allows teachers to share if students are learning the content. The slips are usually given twice a week based on the pacing of the math class.

A roster with a chart enables teacher to organize and submit current student achievement data as a formative assessment during a given time period. On the spreadsheet, teachers indicate whether or not a student understands the particular strand. This data is organized to show *what* students are expected to learn, *when* the assessment

is given, and *how* the students are performing. This helpful data can then be analyzed by a particular strand, student, class, or unit.

Differentiated Learning *and* Assessments

Differentiation in assessment is important in the same way as differentiated instruction; students must be assessed in a manner that allows teachers to understand their individual "current state" in order to then ensure that they learn. Teams work together in their weekly team meetings to ensure that they understand student progress and then allow the students to demonstrate, through multiple methods of assessment, their growth and progress. As a team, the grade-level PLC can decide, not only on the type of questions they will offer students, but also how to "score" progress using rubrics and/or learning targets.

Tomlinson and McTighe (2006) offer the following reflective question for educators: "Once I understand what various students know, understand, and cannot do-how will I arrange my time and theirs to ensure their continued growth?" (p. 89). By differentiating instruction, assessment, and "next steps," today's educators can ensure that students, regardless of current achievement level, can be engaged in learning and succeed.

Data-Driven Decision-making

The reality of data-driven decision making for today's educators is that there is a wealth of various data yet so little time to analyze and reflect on the data in order to make meaningful changes. While the weekly PLC conversations are critically important, we must also continually to review our approach in a systematic, reflective way to ensure that our work is relevant and useful. In the first year of implementation with a fourth grade team in our elementary school, we found high correlations between the students' (N=45) performance on the aggregated exit slips and the end-of-year assessment ($r = .85$, $p < .01$). The data were also correlated by grade level math strand to see if student achievement on the formative assessments and end-of-year assessment were similar. We found that three of the four strands indeed had statistically significant correlations (Number & Number Sense, $r = .50$, $p < .01$; Computation & Estimation, $r = .61$, $p > .01$; and Probability & Statistics, $r = .44$, $p < .01$) between the two assessments, which suggests that the teacher-created formative assessments were similar to the end-of-year assessment. A final step analyzed linear regression to determine if the exit slips predicted end-of-year assessment. The exit slips were a significant predictor ($F_{(1, 44)} = 110.52$, $p < .001$, $R^2 = .72$) of later student performance on the end-of-grade level "high stakes" assessment. Teams of teachers can use these data to reflect on teaching and plan for next steps as a team.

Next Steps

By utilizing a formative assessment process that is teacher owned, student-focused, and data-driven, professional learning community teams can move forward in making necessary reflective changes to ensure that all students can succeed. While adhering to the important foundations of effective pacing and differentiation, teachers and teams should be given autonomy and flexibility in creating exit slips, planning next steps, and informing instructional changes in the classroom. Finally, reflective questions to be

considered as we continue this work might include the following (Sterrett and Fiddner, 2007; Sterrett, Fiddner, and Gilman, 2010):

1.) How can we ensure shared ownership as a team of this process?
2.) How can we focus on *all* students' achievement by differentiating our approach?
3.) How can we meet assessment demands by the state, division, and school in a meaningful way while ensuring student success and teacher collaboration?

By emphasizing teamwork, engaging students through differentiated learning and appropriate assessment, and by continually evaluating the progress of the learning community, formative assessment through the use of exit slips can enable a team to effectively "check for understanding" in a meaningful way.

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