Introduction

The National Council of Teachers of Mathematics Assessment Principle states that, “Teachers should be continually gathering information about their students. They can then make appropriate decisions about reviewing material [or] reteaching a difficult concept.” It is the hope that through this gathering of information teachers will be best equipped to teach their students and thus enhance their students’ understanding of the material. With a superior understanding of the material students ought to perform better on assessments. It is with this in mind that I endeavor to ask: Is there a correlation between the number of informal assessments administered throughout a chapter and students’ end of chapter formal assessment performance?

Literature Review

The first article I read, *Mathematics Dynamic Assessment*, highlighted the importance of informal assessment in mathematics classrooms. The authors noted, “policy makers do not emphasize the need for assessment that informs teachers about how to teach students” (Allsopp, 2008, 6). The article later mentioned that this diagnostic information is crucial for educators to design and redesign their lesson plans. The second article I read, *Mathematics teachers acting as informal assessors*, emphasized how informal assessment can “significantly affect students’ mathematical experience” (Watson, 2000, 69). It has also been found that teachers need to spend more time interpreting students’ responses in formative assessments because they are expected to use these experiences to develop knowledge of their students. The final article I read, *Interpretative Nature*, also commented
on how informal judgments in the classroom can play a role in forming the educational future of the students (Morgan, 2002, 79). The unique angle that this article took is that these informal assessments must be fair and not influence the teacher’s perceptions of students in a negative manner. Overall, the literature indicated that informal assessments are not only beneficial but also necessary in a mathematics classroom.

Methods

I measured the number of informal assessments administered throughout a chapter by counting the number of calculator quizzes administered throughout a chapter. I measured students’ end of chapter formal assessment performance through the students’ grade distribution on cumulative chapter tests. I collected these data for three chapters.

Results

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Number of Calculator Quizzes</th>
<th>Number of students who earned A on chapter test</th>
<th>“”</th>
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</thead>
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</table>

![Graph: Number of Informal Assessments vs. Formal Assessment Grades]

$R^2 = 0.51923$
I calculated the correlation coefficient for this relationship and found $r = 0.72057$.

Conclusion

The correlation coefficient indicates a moderately strong positive relationship between number of calculator quizzes administered throughout a chapter and the number of students who earned an A or B on the chapter test. From this we can conclude that there is a correlation between the number of informal assessments administered throughout a chapter and students’ end of chapter formal assessment grades. My results align with the research in that informal assessments are valuable in establishing what students know and understand and how to best help them learn in the future. We could go a step further with the research, using this study as a framework. As a result of more informal assessments, the students might be gaining more meaningful exposure to the material, and thus are better prepared for the chapter test. Alternatively, as a result of more informal assessments, the teacher might gather more meaningful information about students’ understanding of the material and be able to adjust instruction, which better prepares students for the chapter test. These are several possibilities that would spark interesting future research questions.
Bibliography

