

## Group Assessments

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**Introduction:** Assessment is an integral part of the classroom and the workplace. It provides students and workers with evidence of what they know and helps teachers and managers with their evaluations. In order for assessments to be effective, they must be authentic. At Raytheon, all assessments of worker or project performance had that group element. In the case of the classroom, an authentic assessment includes a group element in order to model the work environment. Workers must collaborate in order to be successful. My students are future workers, so I wanted them to get exposure to being assessed based on group performance.

**Intervention:** The intervention included a Problem Based Learning (PBL) unit on exponential growth and decay that lasted approximately 4 weeks. During that time, students worked together on one large project on the effects of climate change for a chosen region while also working on minor exponential growth and decay problems in class. These smaller problems helped the students understand the math behind their larger project and were also worked on in small cooperative groups. At the end of the unit, the students took a group assessment. This means that the students took the test together instead of individually. They also created a presentation of their findings on climate change.

**Research Questions:** 1) How does using individual and group assessment strategies in cooperative learning contexts affect students' understanding of mathematics? 2) What are my students' attitudes towards group assessments and does attitude affect engagement?

**Findings:** Group assessments increased student achievement but did not increase the knowledge retention rate to an acceptable level. Students performed well on the group assessment with only a few students failing. However, the assessment of the math content over time showed that students had a hard time remembering this knowledge. Students' attitudes towards group assessment did not affect their high level of motivation and their ability to work well in groups. Students' attitudes towards group assessments did not change from an average neutral feeling. So, they did not seem to care whether or not they were doing group assessments because they were still highly motivated and continued to work well in groups. Group assessments did not change students' historic belief that the teacher is the primary contributor to their learning. In my experience as a teacher, this is a typical belief for students. Over 50% of my students listed me as the number one contributor to their learning.

**Plan of Action:** I will continue to implement group assessments because they help my students in the moment and connect to their future lives in any workplace while trying different techniques to help improve their retention of content knowledge. Since students' attitudes do not affect their level of motivation or engagement, assessments and group dynamics will be based on my best practices. To model the workplace, my classroom will continue to include cooperative learning activities. I will try different techniques to help increase my students' retention of content knowledge.