

Develop a Diagnostic Mathematics Assessment for “Stalled Students”

Client. Teachers for a New Era/ Florida A & M

The Challenge. Many Institutions of Higher Education offer developmental instruction for entering students without the necessary mathematics skills to be successful in college. However, many of the students taking developmental courses to address mathematics weaknesses are not successful after multiple attempts. In order to determine an instructional program for these “stalled students” a diagnosis of their mathematics skills is required.

The Solution. SEG worked with faculty and staff from the Teachers for a New Era Project to develop an intensive diagnostic mathematics assessment for use in diagnosing stalled students. This diagnostic assessment used a talk aloud method to identify the specific areas where students were encountering difficulty in solving math problems. Students were presented with a series of math problems in algebra, geometry and other math domains and asked to talk aloud as they solved the problem and respond to additional queries from trained administrators. The sessions were recorded and the areas of weakness were coded by two independent reviewers using a checklist and rating scale approach. The data were analyzed using Rasch Analysis to create a meaningful scale and to support the creation of the final instrument. The diagnostic assessment will be used operationally beginning in the Fall of 2010.