

Evaluation of Teachers of Mathematics

A Position of the National Council of Teachers of Mathematics

Question: What factors should be considered in evaluating the effectiveness of teachers of mathematics?

NCTM Position

Teacher effectiveness is one of the most important factors in student learning and success. Both teachers and students can benefit from a comprehensive system of teacher evaluation that considers data over time from multiple domains of professional practice, such as evidence of teachers' use of the effective teaching practices outlined in *Principles to Actions* (NCTM, 2014). Current evaluation mandates that include students' test scores and value-added measures of teacher effectiveness should not obscure the fact that many factors need to be considered in the evaluation of teachers of mathematics. Professional growth and support should be the foremost goals of this evaluation process, which should be led by those knowledgeable about effective mathematics instruction.

Accountability requirements in education have led to an increase in the number of school districts that are experimenting with including data on the improvement of students' test scores over time, or what are called value-added measures, as a significant component of teacher-evaluation systems. Research on such evaluation systems is only now emerging, and findings on their effectiveness raise concerns about their reliability, validity, and stability (Sass, 2008). These findings indicate that many assessments of student learning are not appropriately vertically aligned (Corcoran, 2010). Other analyses indicate that measures of teacher effectiveness can vary significantly, depending on the statistical method used (Newton et al., 2010). There is also concern that some current accountability tests measure low-level skills rather than critical mathematical processes, conceptual understanding and reasoning, and problem solving, as called for in new standards and recommendations (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010; NCTM, 2009). Value-added models are generally based on standardized test scores and do not directly measure potential teacher contributions to other student outcomes (ASA, 2014). Many variables affect testing results, and many test results may not be an accurate reflection of teacher effectiveness.

Evaluations are most effective when they provide teachers with guidance on how to improve their performance (Little, 2009). It is essential that teachers are provided with the support, professional development, and resources to perform their jobs. Incorporating the effective teaching practices from *Principles to Actions* (NCTM, 2014) as domains of the evaluation process can create a more complete picture of a teacher's effectiveness. Observations, artifacts, and a teacher's self-analysis are other aspects that should have a role in the process. The use of a

variety of tools, and ensuring that the evaluators of teachers are properly trained in their use, can generate a more accurate representation of effectiveness than a focus that is primarily on test scores and value-added measures.

A narrow use of student test scores to evaluate teachers' effectiveness may obscure or overlook the fact that teaching is a complex endeavor. Teaching consists of multiple domains of professional practice, and student learning is a product not only of what happens within the classroom but also of what happens outside the classroom. Additionally, teachers do not all teach under the same working conditions but deal with differing assignments, student characteristics, and resources. Although evidence of student learning can and should be considered in the evaluation of teachers, it should be only one factor among many and should not be used for high-stakes decisions about individual teachers or schools (McCaffrey et al., 2005). Including the effective teaching practices (NCTM, 2014) as domains of the evaluation process, and ensuring that evaluators of teachers are properly trained in their use, can create a more complete picture of a teacher's effectiveness than a primary focus on test scores and value-added measures.

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