

1135-C1-3072 **Muhammad Qadeer Haider*** (mqh14@my.fsu.edu), 1114 W Call St., Stone Building, School of Teacher Education, Tallahassee, FL 32306. *Development and Validation of an Assessment for Introductory Linear Algebra Courses.*

The central goal of the study is to elaborate the development and validation process of an assessment instrument which is sensitive to students' ways of reasoning and understanding of introductory linear algebra concepts. This study is a part of a broader NSF project which was designed to support college instructors for inquiry-oriented teaching. We developed a test to gauge students' conceptual understanding of four focal topics: span and linear independence, systems of linear equations, linear transformations, and eigenvalues and eigenvectors. Instructors mostly cover the four topics in introductory linear algebra courses. The linear algebra assessment is a paper-pencil based test and was given as a post-test to 500 students in 18 linear algebra classes at 15 institutions. The assessment carries nine questions which are a combination of multiple-choice and open-ended questions. The content validity of the test items was established through expert validation, and preliminary analysis of a subset of the data showed that the entire test and the individual test items are reliable. Linear algebra instructors can use the assessment to measure their students' conceptual understanding of linear algebra concepts and can identify the concepts which are vexatious for their students. (Received September 26, 2017)