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Exploration of Mathematics Teaching and Assessment through Maple-Software Projects of Art Diagram Design as Undergraduate Student Research Projects. Preliminary report.

The presenter is interested in conducting research of teaching pedagogy as well as assessment strategies by incorporating art in mathematics education. During a series of pilot summer Calculus courses from 2013 to 2015 at Borough of Manhattan Community College-The City University of New York, the presenter has integrated a series of art-related undergraduate student research projects in the Calculus sequence. Mathematical subjects taught in art-related context can be meaningful and memorable to facilitate students' learning. Visualization through artwork can enhance students' intuitive understanding of mathematical concepts and theories. Working on art-related projects in Math Labs can encourage students to use mathematical formulas in the creation of computer-generated graphic art images. Projects of "Polar Art Calendar" (in 2013) and "Funny Face" (in 2014) and "Geometric Abstract Art Calendar" (in 2015) attached with students' artwork will be presented. The series of pilot courses were supported by the grant from Minority Science Engineering Improvement Program through US Department of Education and also supported from Enhanced Classroom Teaching Funds at Borough of Manhattan Community College. (Received September 14, 2015)