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**LOGO project-based mathematics learning for communication, reasoning and connection.**

Kaur, Berinderjeet (ed.) et al., Reasoning, communication and connections in mathematics. Yearbook 2012, Association of Mathematics Educators. Hackensack, NJ: World Scientific (ISBN 978-981-4405-41-6/hbk; 978-981-4405-43-0/ebook). 107-126 (2012).

Summary: This paper introduces the project-based mathematics learning through LOGO programming activities, which was designed for Korean 6th grade promising students to improve their mathematical reasoning skills and to activate communication with peer students and teachers in various projects to connect mathematics and visual art. In this learning process, students were found to activate and promote reasoning strategies such as analogy, generalization, progressive and critical thinking and debugging based on visualization and empirical inference. Students could activate their communication with other students and their teacher in analyzing, debugging, comparing and contrasting their programming. This chapter shows that supporting with the peculiar characteristics of LOGO language, LOGO project-based learning is an effective environment to combine Piaget's epistemology on intelligence development, Pólya's heuristics for improving mathematical problem solving abilities and Poincaré's philosophy to emphasize mathematics education to nurture attitudes towards mathematics, intuition and esthetic sense.

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