

# STUDENT CREATED MATHMAGIC AND THEIR RELATIONSHIP TO SCHOOL ALGEBRA

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Mathematics education researchers and teachers have emphasized that algebra should be taught in schools as early as in primary grades (Carraher, 2001; National Council of Teachers of Mathematics, 2000). There is also growing evidence that students find it difficult to understand algebraic concepts, such as variables and expressions, when these concepts are presented in an abstract manner. To make algebra meaningful to students, this project introduced algebraic concepts using a context of mathmagic. A mathmagic is a game in which students are invited to play number games such as “think of a number”, “add 7”, “multiply it by 5”, etc. (Koirala & Goodwin, 2000). Utilizing algebraic knowledge, the mathmagician then figures out the final number that a student is thinking of.

A total of 20 ninth grade students with varied mathematical and algebraic experiences participated in this project. Ten of these students had an exposure to algebra from a traditional perspective, but the other 10, including 5 students with special needs, had no algebraic exposure before. When the students completed their computations in mathmagic activities they were surprised that they all ended up with the same number. The students then mapped their final numbers with letters in the English alphabet and created different words and phrases for the amazement of the class. Student learning of algebra was captured by using a pre- and pos-test analysis, their class work, and individual interviews. The mathmagic activities were highly motivating to students and helpful for them to make sense of algebraic concepts such as variables, expressions, and distributive property of multiplication over addition. This poster will provide samples of student created mathmagic in a visual format generated by powerpoint. Examples of student created mathmagic words and phrases and how algebra was used to create them will be demonstrated.

## References

- Carraher, D. (2001). Can young students operate on unknowns? In M. van den Heuvel-Panhuizen (Ed.), *Proceedings of the 25<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 130-140). Utrecht, The Netherlands: Freudenthal Institute.
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