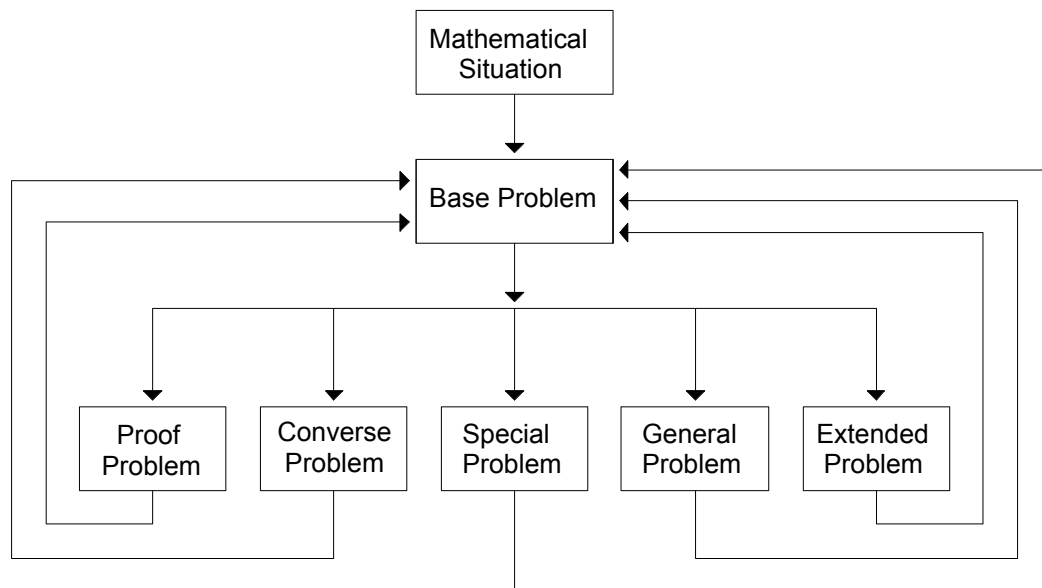# HOW TO POSE IT: AN EMPIRICAL VALIDATION OF A PROBLEM-POSING MODEL

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Mathematics continues to be an expanding branch of knowledge because there are problems whose solution is unknown. In the words of Eves (1980), "the continual appearance of unsolved problems constitutes the life blood that maintains the health and growth of mathematics" (p. 11). Once we have a problem, we can formulate a conjecture or theorem. If we want to engage students in problem posing, then it is critical that teachers themselves have the disposition and abilities to formulate problems. Unfortunately, research studies (e.g., Contreras & Martínez-Cruz, 1999) indicate that prospective teachers' problem-posing abilities are underdeveloped. To help students learn how to pose problems within geometric contexts, the first author developed the model depicted below. Currently, we are testing the usefulness of the model to help prospective secondary mathematics teachers to formulate problems. Examples of problems generated by the authors and their students will be displayed during the poster presentation. The conjectures and theorems related to the problems will be supported with Dynamic Geometry Software using an LCD projector.

References

Contreras, J. & Martínez-Cruz, A. M. (1999). Examining what prospective secondary teachers bring to teacher education: A preliminary analysis of their initial problem-posing abilities within geometric tasks. In F. Hitt & M. Santos (Eds.), *Proceedings of PME-NA XXI* (Vol. 2, pp. 413-420). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Eves, Howard. *Great Moments in Mathematics (After 1650)*. The Mathematical Association of America. 1981.