

1163-A1-1540 **Jose N Contreras*** (jncontrerasf@bsu.edu), 3409 W Wheatfield Ln, Muncie, IN 47304. *Using GeoGebra and a Problem-Posing Approach to Create an Inquiry-Based Learning Environment for Secondary Mathematics Teachers.*

In this presentation, I will illustrate how I guide my prospective secondary mathematics teachers to discover theorems related to the power of a point using a problem-posing approach supported by GeoGebra (GG). In this investigation, the students discover and unify the four theorems associated with the power of a point: the secant-secant theorem, the secant-tangent theorem, the tangent-tangent theorem, and the chord-chord theorem. In this investigation, the students are also engaged not only in making conjectures, but also in developing proofs to prove each of the four theorems.

As teacher educators, we need to design learning tasks for practicing and future teachers that deepen their understanding of the content they teach or are likely to teach. Having a profound understanding of a mathematical idea involves seeing the connectedness of mathematical ideas. By discovering and unifying the power-of-a-point theorems and proofs, my students experience what it means to understand deeply a mathematical theorem. GG was an instrumental pedagogical tool that facilitated and supported the investigation in three main ways: as management tool, motivational tool, and cognitive tool. (Received September 15, 2020)