Here we discuss some observations made by applying Bayesian networks to assess an inquiry based learning curriculum for Calculus II which took place in the Spring 2018. We model connections between different concepts and tasks as a Bayesian network to infer certain conditional probabilities that allows us to quantify multiple dependencies of different concepts and their impact on final assessment of the students. In addition, we also discuss some common student misconceptions we noticed when approaching key ideas in Calculus II, observed from the student responses on the tasks given. (Received September 20, 2018)