

11 - Evaluation and Assessment of Student Learning and Development | Empirical

SP - (15932) - ASSESSING STUDENTS' READINESS TO LEARN COLLEGE CHEMISTRY

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Short Abstract

Science and mathematics learning in K-12 education has been central to the research and discussion regarding broadening the science, technology, engineering, and mathematics (STEM) courses (Wang, 2013). In structuring and engaging students in science and mathematics courses, it is crucial to pay attention to college readiness. Higher education institutions typically determine readiness for postsecondary STEM coursework in terms of high school science and mathematics subjects taken, grades, and admission test scores, which all of these are known to be related with entry into and completion of a college STEM course (Means, Wang, Young, Peters & Lynch, 2016). In senior high school (SHS) of the Philippine K-12 Program, students in the Academic Track (STEM Strand) are expected to take advanced science and mathematics subjects to acquire knowledge and skills which will prepare them in college STEM courses. This study assessed the SHS students' conceptual understanding of chemistry concepts and skills necessary for general college chemistry course which determined their readiness to learn college chemistry. Using the Rasch model, levels of progression were determined using the estimates (student ability and item difficulty) generated from the analysis of the readiness test in chemistry, which described student readiness. The results of the study will inform future curriculum design for K-12 science as well as for general college chemistry.