Analysis of the Relationship between Self-Concept, Self-Regulation, Academic Resilience, Academic Persistence and Perception of the Effectiveness of Chemistry Learning on Cognitive Achievement and Chemical Aspirations using the Structural Equation Modeling (SEM) Method among High School Students in

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ABSTRACT

Character education is one of the important things in the world of education, because character education is expected to be able to form a holistic human being with character in addition to forming lifelong learners, who will actually be able to develop all students' potential in a balanced way (spiritual, emotional, intellectual, social, and physical) and also optimally. In this research, path analysis is used to predict the influence of various factors in learning in the form of cognitive achievement, chemistry aspirations, self-concept, self-regulation, academic resilience, academic persistence and perceptions in learning chemistry. The aim of the research is to determine the significant relationship between self-concept, self-regulation, academic resilience, academic persistence and perceived effectiveness of chemistry learning on cognitive achievement and chemistry aspirations with three predictors that are interconnected or covariate with each other in students in high school chemistry subjects. . This research is a type of quantitative research with a survey method. A total of 120 public high school students in Pekanbaru City were involved as research samples using a simple cluster random sampling technique. The research stages are preparing and compiling research instruments in the form of questions and questionnaires, testing content validity by involving expert judgment. Next, empirical validation of the instrument was carried out on 120 students who were then analyzed using the Rasch model with the help of the Winsteps application on a limited trial sample. Then, determine the structure and explore the factors in the variable indicators using the Exploratory Factor Analysis (EFA) field test so that good questions and questionnaires will be obtained for large-scale tests. Next, carry out a CFA analysis test with AMOS 23. Then, carry out a path analysis assumption test, namely a unidimensional test, and then carry out a path test to determine the best path model. The results of the research show that the best path analysis model is the path 4 model which describes the direct relationship between self-concept, self-regulation, academic resilience, academic persistence and perceptions of learning chemistry on cognitive achievement and chemistry aspirations of high school students. This is because all variables are significantly related and have an R2 value of 50% of the variance for chemistry aspirations and 17% for student cognitive achievement, the researcher used the 4 path diagram model as the basis for the next analysis, namely SEM analysis. The output of this research is that it has been published in the accredited national journal SINTA 2, submitted in an indexed/reputable international journal and IPR registration in the form of copyright for the Self-Concept and Academic Resilience Instrument.

Kata Kunci: *chemical aspirations, academic persistence, self-concept, self-regulation, academic resilience, path analysis, learning perception, cognitive achievement*