Revalidation of Instruments Using Parial Least Squares Structural Equation Modeling (PLS-SEM)

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ABSTRACT

Purpose – This research aimed to examine the reliability and validity of instruments used to determine self-efficacy beliefs, teaching motivation, attitudes towards teaching science and behavioural intention by using Partial Least Squares Structural Equation Modelling (PLS-SEM).

Methodology – This research has adopted quantitative research design with cross-sectional survey method. The respondents were 135 pre-service science teachers from the government-funded universities in Malaysia. 'Science Teaching Efficacy Belief Instrument-Form B' (STEBI-B) was used to measure pre-service science teachers' self-efficacy beliefs. 'Work Tasks Motivation Scale for Teachers' (WTMST) was used to measure teaching motivation. The 'Dimensions of Attitude towards Science' (DAS) was used to measure attitudes towards teaching science, whereas the 'Behavioural Intention Scale' was used to measure behavioural intention in teaching science. PLS-SEM approach was used to evaluate the reliability and validity of the instruments.

Findings – This research has concluded that all instruments tested were valid and reliable to be used in future study.

Significance – The research instruments were revalidated by using PLS-SEM which is highly stringent in measuring multidimensional aspects of reliability and validity.

Keywords: Self-efficacy beliefs, Teaching motivation, Attitudes towards teaching science, Behavioural intention in teaching science, Pre-service science teachers