Learning motivation towards linear programming questionnaire for Polytechnic diploma students

ABSTRACT

The objective of this research was to assess the reliability and validity of learning motivation toward the Linear Programming (LMLP) Questionnaire by using the Rasch Measurement Model. The LMLP Questionnaire was adapted from Keller's ARCS Model of motivation to evaluate the motivation level in learning Linear Programming among students of Diploma of Mechanical Engineering at Polytechnic Kota Kinabalu. The LMLP Questionnaire consisted of 34 items with the use of a 5-point Likert scale. The level of student motivation was measured based on four main constructs which are Attention (A), Relevance (R), Confidence (C) and Satisfaction (S). The sample comprised 56 third-semester students of Diploma of Mechanical Engineering. The results of the study found that overall, this questionnaire had high reliability with a Cronbach's alpha (KR-20) value of 0.97. The questionnaire was found to have good item reliability and item separation values of 0.84 and 2.26, respectively. The questionnaire also had excellent person reliability and good person separation values of 0.93 and 3.74, respectively. Meanwhile, the validity of the LMLP instrument was appropriately established through the item fit, person fit, and unidimensionality. In conclusion, this study shows that the LMLP Questionnaire is a reliable and valid instrument to measure the level of learning motivation towards Linear Programming among third-semester Diploma students in Mechanical Engineering.