

The Development and Validation of a Figural Scientific Creativity Test for Preschool Pupils

Abstract

Testing creativity in general has been well researched but little has been reported on the development of instruments to test scientific creativity among preschool pupils. This study described the development and validation of a Figural Scientific Creativity Test (FSCT) for preschool pupils. The FSCT consisted of six items which were constructed based on Scientific Creativity Structure Model and scored using an adapted Torrance Test of Creative Thinking. The items were developed through three dimensions called the product (scientific knowledge, scientific phenomena and scientific problem), the process (imagination and thinking) and the trait (fluency, originality, elaboration, abstractness of title and resistance to premature closure). All the items were developed and validated through analysis of item response data of 30 six-year-old preschool pupils in Kota Kinabalu district. Item analyses were conducted to check on item discrimination, Cronbach Alpha internal consistency coefficient, item-total correlations, agreement between scorers, construct related validity, content validity, face validity, and acceptability to pupils. All items showed discrimination coefficient range from 0.22 to 0.40. The Cronbach Alpha internal consistency coefficient was found to be 0.806. The item-total correlations range was within 0.541 to 0.866. The correlations between scorers varied from 0.780 to 0.933. FSCT was found to have a total of six items on one factor as a result of the exploratory factor analysis. The item analysis suggested that FSCT could be a reliable and valid instrument in assessing scientific creativity of six-year-old preschool pupils in preschool classrooms.