

## **Developing a scientific creativity test for fifth graders**

### **Abstract**

Testing creativity in general has been well researched, but little has been reported on the development of instruments to test scientific creativity among primary school students. This study describes the development and validation of scientific creativity test for primary school fifth graders. A Scientific Creativity Structure Model (SCSM) was used to guide the development of test items through three dimensions called trait, process and product. Torrance Tests of Creative Thinking (TCTT) were used to evaluate test item answers. Two equivalent, parallel scientific creativity tests were developed each of which consisted of 4 items posed in the form of: technical product, advances in science or scientific knowledge, understanding of scientific phenomenon and scientific problem solving. The scientific creativity test was validated through analysis of item response data of 206 fifth grade students from two Malaysian primary schools. The scientific creativity test was found to have high internal consistency, inter-scorer reliability and face validity. Both Form A and Form B of the test had an acceptable discrimination index range. The test showed a weak positive, but significant correlation between the items in product and process dimensions, but a very strong correlation between the three trait dimensions of SCSM. Test items on science problem solving have a strong indication loading on spatial analytical thinking. The Item analysis suggests that this test would be useful in assessing scientific creativity of the fifth grade students with further review on test items measuring science problem solving