FACTORS AFFECTING STUDENTS' BELIEFS ABOUT SCHOOL-BASED ASSESSMENT OF CHEMISTRY PRACTICAL SKILLS

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Laboratory work is an important component of school science. However, over the past four decades there has been considerable debate about how assessment of practical skills should be conducted as part of the public examination. In 2009, a new chemistry curriculum for Secondary 4 - 6 students (approximately 16-18 years of age) was implemented in Hong Kong schools. Secondary 6 students are required to take the new chemistry examination that consists of two parts: theory papers (80% weighting) and school-based assessment (SBA) of practical work (20%). The SBA requires teachers to assess their students' practical skills when conducting laboratory experiments. A statistical moderation procedure is used to adjust SBA marks against the theory marks. The importance of teachers' assessment of practical skills has been highlighted by many researchers, but few published studies have investigated students' beliefs about SBA. This study used a mixed-methods research design and aimed to answer two questions: Do Hong Kong students believe that SBA is a good way to teach and learn chemistry in school? What are the major factors affecting students' beliefs about the value of SBA? A total of 36 Secondary 6 chemistry students were selected from 6 schools to participate in focus group interviews. About 60% of the students interviewed had reservations about the value of SBA. For example, 25 students did not believe that SBA is a fair examination system. Those students who valued SBA mentioned at least one of the three major factors: SBA can enhance the validity of examination; SBA has formative functions; and SBA can motivate students to learn chemistry. To determine the relative importance of these three factors, 16 questionnaire items were constructed to survey 306 Secondary 6 students from 10 schools. Multiple regression analysis was used to compare the predictive power of the three factors. The linear combination of predictors was significantly related to students' beliefs about the value of SBA, $F(3, 302) = 393.58, p < .001$. The sample multiple correlation coefficient was .892 and the R square was .796, indicating that 79.6% of the variance of students' beliefs about the value of SBA can be accounted for by the three predictors. The most powerful predictor was 'formative functions of SBA', followed by the 'motivating effects of SBA'. These findings suggest that many students did not understand why SBA is more valid to assess practical skills than written theory papers or an external practical examination.