三種課程本位數學評量模式的效度研究

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本研究旨在建立與比較流暢性、正確性、標準參照三種課程本位評量模式預測數學成就的效標關聯效度。研究對象為台中市、台中縣、彰化縣、南投縣等中部地區八所公立國民小學三、四年級普通班的學生,總計有 703 人。課程本位數學評量測驗均由研究者依各模式的特性自行編製,經預試及專家審查兩個步驟發展成為正式的題本。作為數學成就效標的評量工具有國民小學數學能力發展測驗、數學障礙部分的學習行為特徵檢核表,以及八十三學年度上、下學期的數學科學期成績,前三者為同時效度的效標,八十三學年下學期成績則是預測效度的效標。所有的測驗皆以團體施測的方式進行。 信、效度分析的結果顯示以正確性模式之「計算和文字題合併答對的百分比」和標準參照模式的計分方式最佳,加入實用性的考量之後,前兩者模式之間以正確性模式的「計算和文字題合併答對的百分比」較容易在一般學校的班級中推行。本研究的結果可作為選取形成性數學評量工具之依據,俾益於數學學習障礙及低成就兒童教學及學習。

關鍵字:課程本位評量;數學成就;效度;國民小學

Abstract

Curriculum-based assessment (CBA) refers to the set of systematically administered formative assessment procedures which were established on the basis of research findings. The main purpose of this study was to establish and compare the criterion-related validity of three types of CBA models, including Fluency model, Accuracy model as well as Criterion-Referenced model. The criterion measures of math achievement consist of standardized math test, teachers' ratings, and course grades in math. The subjects were selected from eight public elementary schools which are located in Taichung City, Taichung County, Nantou and Changhwa (all of them are in central part of Taiwan). There were totally 703 third and fourth grade students taken the CBA math tests as well as the criterion measures of math achievement. All of the CBA math tests and criterion measures administered in large groups. The established reliability and validity data indicated that "Percentage of calculation and word problems answered correctly" in Accuracy model and the scores in Criterion-Reference CBA model were, among all types of CBA math test scores, the better indicators of math achievement under a formative evaluation system. Considered the cost of time and money to prepare, conduct, and grade the formative evaluation measures, "Percentage of calculation and word problems answered correctly" in Accuracy model turned out to be the best choice among scores in three types of CBA models.