

The affective domain and the achievement of the school children under two different mathematics instruction

Jing Chung, Dep. of Math. Edu., National Taipei Teachers College, Taiwan, R.O.C

Tien-Chen Chu, Dep. of Mathematics, National Taiwan University, Taiwan, R.O.C.

In Taiwan, the school mathematical curriculum and the associated textbook used to be unified. The new curriculum stressed student centered discoursing while all the previous curriculums stressed teacher centered lecturing instruction. The reformation was so great that it needed special justification for the sake of politics and education. Therefore, the main researcher, being a member of the curriculum develop group and the principal of the National Taipei Teachers College (NTTC) laboratory school carried out this minimum pair comparison of the two curriculums on 1998 and 1997 class students of NTTC lab school. We made a questionnaire on Mathematics Learning Attitude (MLA) to test students of both graduation years from grade 3 to 6. We also used a battery of Mathematics Achievement Test (MAT) based on the 1997 class grade 5 textbook to test all students at grade 5 and 6.

The test results made us to conclude that:

1. All the students thought that they all learned a lot of mathematics.
2. Experiment students (1998 class) liked more to do mathematics independently and to discuss with classmates.
3. Experiment students were more critical on the solution strategies and more aware of the written mathematical expression of the solutions.
4. All students showed equal achievement in taught scopes. For the experiment students, if the test items were not taught yet, they first showed inferior scores at grade 5, then jumped to the level equivalent to the compared students (1997 class) as long as the test items were then taught.

Based on the above conclusions we could carefully argue that the new teaching mode that the teacher poses a problem, then the students solve it voluntarily, then the students announce and defense the solutions, then the teacher steers the students to some sound patterns and the needed measures of restructuring of the materials to write a completely new textbook was an advance in school mathematics education. This study was a biproduct of six years of action research in NTTC lab school from 1992 to 1998 (Chung, 2000; Chung & Chu, 2001) to help teachers to cope with the challenge of teaching new curriculum. The scope and the depth of this curriculum reform, and the wisdom of the researcher to mobilize NTTC lab school to carry out this minimal pair comparison of the curriculums made the case of the curriculum reform in Taiwan worthwhile.

Reference

- Chung, J. (2000). School-based Teacher Improvement as an Effective Support for Mathematical Curriculum Reform. *Proceedings of the NSC-Part D: Mathematics, Science and Technology Education*, 10(2), 71-89.
- Chung, J., & Chu, T.C. (2001). One Teacher's Professional Growth during the Implementation of the New Mathematics Curriculum. *Proceedings of the NSC-Part D: Mathematics, Science and Technology Education*, 11(2), 51-65.