Primary School Pupils' Perception on Studying Mathematics

National Institute of Education (NIE)
&
Sultan Hassanal Bolkiah Institute of Education (SHBIE)
Joint Study

Berinderjeet Kaur & Koay Phong Lee
National Institute of Education
&
Jamilah Bte Hj Mohd Yusof, Zaitun Bte Hj Mohd Taha & Wong Khoon Yoong
Sultan Hassanal Bolkiah Institute of Education, Brunei Darussalam

This study was part of a larger collaborative project, called IDEA (Inter-institute Dialogue on Educational Advances), that addressed various educational issues common to the two education institutes involved, namely the National Institute of Education (NIE) of Singapore and the Sultan Hassanal Bolkiah Institute of Education (SHBIE) of Universiti Brunei Darussalam (UBD). The main aim of this joint project under IDEA was to enhance collaboration and sharing of ideas between the two institutes in investigating the factors that affect pupils' learning of mathematics in primary schools. The instrument used in the study was a 26 item questionnaire adapted from the Pupil Questionnaire used in the KASSEL Project (Kaur & Yap; 1997b)*. The pupils in Brunei were administered the questionnaire in Bahasa Melayu (their national language) towards the end of their school year before their Primary Certificate in Education (PCE) examination in 1998, while in Singapore, the pupils were administered the questionnaire in English towards the end of their school year after their Primary School Leaving Examination (PSLE) in 1998.

The questionnaire sought data on:

Enjoyment
- mathematics at both the lower and upper primary levels,
- mathematical topics, other school subjects and mathematical games

Aspiration
- grade at Primary School Leaving Examination (PSLE, for Singapore)
- Primary Certificate of Education (PCE, for Brunei)

Competency
- self in Mathematics and English Language
- self in mathematical tables
- family members in mathematics

Use
- in other subjects
- everyday tasks

Help
- tuition (outside school hours)
- person who helped most over the past year

Homework
- frequency and when it is done

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* Kaur, B., & Yap, S.F. (1997b). KASSEL Project Report (NIE - Exeter Joint Study) Second Phase (October 95 - June 96). Singapore: National Institute of Education, Division of Maths.

Computer

- available at home or not, what is it used for computer work during mathematics lessons in school

Calculator

- used for trivial tasks or not

Learning

- teaching methods that enable pupil to understand new concepts well
- revision techniques for mathematics tests and examination
- preference for assessment modes

Teacher

- qualities of best mathematics teacher
- drawing of best mathematics teacher teaching in class

209 pupils (98 girls and 111 boys) from Brunei and 334 pupils (171 girls and 163 boys) from Singapore participated in the study. The pupils were 12 years of age and in their final year of primary school. In Singapore the pupils were from 4 urban schools, while in Brunei, the pupils were from 3 urban schools and one rural school. Data collected including the drawings was analysed to shed light on:

* general perceptions of pupils studying mathematics
* qualities of the best mathematics teacher they have had

In both countries, pupils found mathematics most enjoyable, followed by English which is a compulsory subject in both countries. In terms of homework given, Singaporean pupils reported doing homework more frequently than Bruneian pupils. Pupils from both countries admitted that their teachers help them most in mathematics. The Singaporean parents seemed to play a more active role in helping their children when compared to Bruneian parents. A higher percentage of pupils in Singapore own a computer at home compared to their Brunei counterpart. Pupils from both countries held a very high aspiration of getting very good grades in their forthcoming PSLE/PCE mathematics examination respectively.

The data also reveals that in Singapore, the best mathematics teacher is perceived to be one who is patient, caring and kind, explains clearly in class and is demanding in terms of work to be done both in class and at home. In Brunei, pupils perceive the best mathematics teacher as one who is calm and good tempered, explains clearly, answers all questions and requires pupils to do work in class.

The drawings by the pupils reflect the predominant culture of the two countries (especially in clothing). The similarities in the learning environment are striking indeed. The drawings showed the whole-class situation with pupils seated in rows and the teachers up front explaining something on the board. The board was packed with mathematical symbols, diagrams, and solutions. Interestingly the Bruneian pupils were more attentive to the time of the lessons as shown by the clock drawn in their drawings! The data collected and the findings of the project have been reported in the following publications:

Wong.K.Y., Kaur, B., Koay, P.L. & Jamilah, H.M.Y. (2007). Singapore and Brunei Darussalam: Internationalisation and globalisation through practices and a bilateral mathematics study.In A. Bill et

al., (Eds.).. Internationalisation and Globalisation in Mathematics Education and Science Education, (pp. 441 - 463). Springer publishers.

Wong, K.Y., Zaitun M. T., Jamilah M, Y., Romaizah M.S., Kaur, B. & Koay, P.L. (2001, December). Perceptions of learning primary mathematics: A comparative study of Brunei and Singapore Primary 6 pupils. Paper distributed at the IDEA Symposium, Annual Conference of the Australian Association for Research in Education, Fremantle, Australia.

Kaur, B., Koay, P.L.,Yusof, H.J.M., Taha, Z.J.M. & Wong, K.Y. (1999). My Best Mathematics Teacher. In S.P. Loo (Ed.) Proceedings of the MERA – ERA Joint Conference, Educational Challenges in the New Millennium (pp. 682 – 690). Singapore: Educational Research Association.

Kaur, B., Koay, P.L., Yusof, H.J.M., Taha, Z.J.M. & Wong, K.Y. (1999). Primary school pupils' perception on studying mathematics. NIECER Research Bulletin, 4(2), pp. 3-5. Singapore: National Institute of Education Centre for Educational Research, Nanyang Technological University.