

Research on Change of Medium of Instruction in Secondary Schools

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Abstract

The Education Commission, in its Report No.1, encouraged secondary schools to adopt Chinese as the medium of instruction. A study was carried out to examine the effects of change of medium of instruction to Chinese on the academic performance of students, to study the learning process and related variables in schools adopting Chinese as the medium of instruction, and to establish the relation between students' performance and the language environment in school.

Preparatory work began in the 1987/88 school year. Eleven Anglo-Chinese schools with over 50% of subjects switched to the Chinese medium were selected as the experimental group. Eleven schools were matched as the control group. Initially 4543 S1 students in the 1988/89 school year were involved in this longitudinal study which tracked the students from S1 to S3.

Students' performance in Chinese, English, Mathematics, and three content-based subjects, i.e. Science, History and Geography, were measured. For Mathematics and the content-based subjects, there were three language versions of test papers: Chinese version for the experimental group, English and bilingual versions for the control group. Because of matching constraints, not all participating schools were tested on Mathematics and the three content-based subjects. The students' learning process and related variables were measured by using the Learning Process Questionnaires designed by Professor J.B. Biggs from the University of Hong Kong. Questionnaires for principals and teachers were also administered to measure their views on the choice of teaching medium. In addition, interviews with teachers and videotaping of classroom teaching were conducted to identify the actual medium used in the teaching process.

Medium Index

It is too simplistic to define the language environment in a school by merely referring to the medium of instruction the school claimed to have adopted. In this study, three factors were included to describe the language environment in school: (i). proportion of periods taught in Chinese to the total number of periods, i.e. C/T ratio, (ii) the attitude of teachers towards the use of Chinese/English in their teaching, and (iii) the perception of students towards the teaching medium used in class. The C/T ratio was reflected in schools' annual feedback to the Education Department while the other two factors were measured through the administration of questionnaires to teachers and students.

By grouping the measures of these three factors into a single score, a medium index (M.I.) ranging from “1” to “5” was devised to describe the language environment of a school. M.I. = 1 means that the school language environment is mainly English, while M.I. = 5 indicates that the school language environment is mainly Chinese.

However, this procedure led to inequality of ability particularly in the group of M.I. = 5. There were two schools in this group where the teachers needed to use Chinese as much as possible because of the poor English competence of the students: those schools were in the lower school banding groups. Attempts were made to equate the groups but this was only partially successful.

Effects of Change of Medium of Instruction on the Academic Performance of Students

Except in the case of English, where students in the control schools performed better than their counterparts in the experimental schools, performance of experimental schools in all other subjects by S3 was either equal in the subject of Mathematics or superior in the subjects of Chinese, Science, History and Geography.

When the results were looked at across the five medium groups, making allowance for unequal distributions of ability, the same findings were obtained: performance in English was the best in an English environment, performance in the subject of mathematics was ambiguous due to unequal ability distributions, but performance in all other subjects, i.e. Chinese, Science, History and Geography was the best in a Chinese language environment.

Relation between Learning Process of Students and School Language Environment

When the students’ learning processes were investigated, it was found that in a school language environment which was more Chinese than English, students generally were more ‘deeply’ or academically motivated. They were more likely to commit themselves to learning and to attempt to understand their school tasks rather than just to meet their teachers’ requirements. They also tended to maximize their understanding by using various high level cognitive strategies to handle their school tasks. Their counterparts in the English medium schools who were not competent in English, however, tended to learn by rote memorizing, focusing only on selected details. They were more extrinsically motivated and more anxious in their studies. They had to organize their time and resources in order to cope with their learning in the English medium. Those students who were competent in English, on the other hand, were as likely to use high level cognitive strategies in learning as were their counterparts taught in the Chinese medium.

Effect of the Language Medium of Textbook on Students' Academic Performance

Students were found to be in an advantageous situation when they learned the language-loaded subjects through textbooks written in Chinese. The use of Chinese greatly reduces the language barrier experienced by them. This not only motivates them to learn but also facilitates their understanding of the subject matter.

Implications for Schools on the Choice of Medium of Instruction

The results clearly suggest that students of low English competence should not be placed in a language environment which is predominantly English. Otherwise, they are likely to have poor motivation and to apply superficial learning strategies like rote memorization to deal with the secondary curriculum, especially in studying language-loaded subjects. To enable these students to have better academic performance, it is advisable for schools to teach them through the Chinese medium.

As teachers play an important part in shaping the language environment in schools, it is recommended that schools should adopt a single-medium approach in class-teaching.