8. INTERVIEWS WITH CURRICULUM PLANNERS

8.1. Participants and procedure

Five curriculum planners were invited for a semi-structured interview in the summer of 1998. They were:

(a) Teacher member, Curriculum Development Council (primary mathematics)
(b) Teacher member, Curriculum Development Council (secondary mathematics)
(c) Teacher member, Curriculum Development Council (sixth-form mathematics)
(d) Officer, Curriculum Development Institute (natural science)
(e) Officer, Hong Kong Examinations Authority (secondary mathematics)

In order to ensure maximum objectivity on the part of the interviewer, a research assistant was selected from the area of mathematics education but remote from direct curriculum development. The semi-structured interviews were focused on: (a) participants' comments on the current school mathematics curriculum and (b) their professional advice on areas requiring special attention when considering curriculum reform. The interviews were audio-taped, transcribed and content-analysed.

8.2. Results and discussions

8.2.1. General opinions

In general, the interviewee involved in the development of the primary mathematics was quite satisfied with the curriculum. The interviewee in charge of the science curriculum also reflected that the current mathematics curriculum adequately supported the learning of the natural sciences in schools.

Most of them pointed out that the quality of the implemented curriculum was dependent not only on the quality of the intended curriculum but also required appropriate implementation strategies. Moreover, qualified teachers were also essential if the intended curriculum was to be realised.

8.2.2 The problems and weaknesses of the present curriculum

A common concern of the curriculum planners interviewed was that the present mathematics curricula placed too much emphasis on computation at the expense of developing conceptual understanding and cultivating higher level thinking (e.g., problem solving). One of the curriculum planners commented that the present curriculum was not practical enough.

Another important concern of the curriculum planners was whether the difficulty level of the curriculum was appropriate to the ability level of its end-users. It was the view of the sixth-form curriculum planners that both the Pure Mathematics curriculum and the Applied Mathematics curriculum were too difficult and abstract for this level of students. The view on the breadth of the curriculum was somewhat more diverse. One of the curriculum planners interviewed thought the sixth-form Pure Mathematics curriculum was too narrow in scope, whereas another curriculum planner found the curriculum too broad. In connection with this issue, one of the curriculum planners was concerned with the lack of content differentiation for the S.4-5 Science stream and the Arts stream.

The continuity and coordination among different syllabuses was another concern for the curriculum planners. For instance, the primary mathematics Curriculum Development Council member pointed out that at present, despite the fact that over 85% of the students attended kindergartens before they entered primary schools, the current primary mathematics syllabus started the subject learning from scratch. He thought it was a waste of time at the P.1 level. He wished to see better linkage between the kindergarten and the primary school curriculum. At the secondary level, the linkage between Applied Mathematics in S.6 and Mathematics in S.4-5 was a problem.

As regards the instruction of mathematics, the inconsistencies in teaching approaches used in primary and secondary schools were also perceived to be problematic. For instance, an interviewee commented that primary mathematics teachers tended to be too concerned with trivialities such as format and were not much concerned about training students to think. The primary mathematics Curriculum Development Council member again pointed out that "…at the lower primary level, teachers tend to restrict students to a rigid format … I think there should be more communication and mutual understanding between upper primary and junior secondary mathematics teachers on the teaching approaches and learning targets and goals at these learning stages."

One of the curriculum planners interviewed felt strongly about the examination-driven nature of the present secondary mathematics curriculum. In his view, both the sixth-form and S.4-5 curricula were geared almost exclusively towards the public examination systems in terms of course design and content selection.

At the primary level, the interviewees perceived the major weaknesses of the present curriculum to be insufficient teaching time allocated to the subject, predominance of the one-way teaching method, lack of suitable teaching resources, and the poor quality of teachers. One curriculum planner was particularly concerned about the assessment methods currently used in schools.

8.3. Discussion

The opinions of these curriculum planners shed light on how the future mathematics curriculum ought to be shaped. Regarding the intended curriculum, most of them thought that the "thinking" component should be strengthened. They saw the development of students' higher level cognitive skills, such as decision making and problem solving, to be central to the curriculum. Besides this, the mathematics curriculum should focus more on developing students' communication skills. The "practicality" of the subject should also be strengthened, making the curriculum more relevant to daily life experiences and to students' future studies and careers. In order to do this, an interviewee suggested it would be acceptable to trim down the content, in particular, the A Level Pure Mathematics curriculum.

At the secondary level, curriculum differentiation should not be overlooked. The interviewees made two suggestions: (a) incorporating a "core" and an "extended" component in the curriculum; and (b) designing separate curricula for Arts and Science students.

Continuity as well as coordination among the different mathematics syllabuses of various levels should also be carefully considered. The function and significance of technology in mathematics learning and teaching should also be addressed.

At the level of the implemented curriculum, teacher quality and professionalism are prerequisites to quality improvement. One interviewee pointed out that teachers' commitment and social recognition of their profession could significantly influence their self image and professional awareness. The part teachers allowed to play in the development of the curriculum and their feeling of ownership for the end product should also be crucial to the quality of implementation. Needless to say, the support given to teachers, including the provision of teaching materials, teaching ideas, materialistic and human resources will determine the success of the curriculum implementation.

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