Questionnaire number: KH-M-S-

Secondary School

To be filled in by

Mathematics Education KLA

Coordinator*/ Panel Head

# Survey on the Implementation of

# Key Learning Area Curricula in Schools 2003

The Curriculum Development Institute of the Education and Manpower Bureau has commissioned the Division of Social Studies of City University of Hong Kong to conduct a survey entitled "Survey on the Implementation of Key Learning Area Curricula in Schools 2003". The information collected will be used to make decisions on how to support teachers and heads better in the implementation of the curriculum reform. Please fill out the questionnaire and pass it on to the Principal or the representative of your school on or before 23 July 2003. All the information collected will be **kept in strict confidence.** If you have any questions, please contact our Research Assistant Ms Flora Fu at 2788 9034. Thank you for your cooperation!

*If your school has not yet appointed a Coordinator for this KLA, please pass the questionnaire to the panel head or the academic master who is most familiar with the relevant subject. When filling in the questionnaire, the teacher should respond from the perspective of the KLA Coordinator.

**Please read the statements in this questionnaire carefully. Then check the appropriate box for your chosen answer or write down your answers in the space provided.**

## Section A Aims and Strategies of School Curriculum Development

| 1. The statements below refer to the aims of the current school curriculum reform that schools should achieve within 10 years. To what extent do you agree with these aims? | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree | Don't Know |
|---|---|---|---|---|---|---|
| Students will<br>• recognize their roles and responsibilities as members of the family, society and the nation; and show concern for their well-being<br>• understand their national identity and be committed to contributing to the nation and society<br>• develop a habit of reading independently<br>• engage in discussion actively and confidently in English and Chinese (including Putonghua)<br>• develop creative thinking and master independent learning skills (e.g. critical thinking, information technology and self-management)<br>• possess a breadth and foundation of knowledge in the eight Key Learning Areas<br>• lead a healthy lifestyle and develop an interest in, and appreciation of, aesthetic and physical activities | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| 2. The statements below refer to the aims of the Mathematics Education Key Learning Area curriculum. To what extent do you agree with these aims? | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree | Don't Know |
|---|---|---|---|---|---|---|
| Every learner<br>• should have ability to think, to inquire, to reason, to communicate, to solve problems, and to appreciate the aesthetic nature and cultural aspect of mathematics | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| 3. The statements below refer to the short-term (2002-06) focuses of curriculum development in the Mathematics Education Key Learning Area. To what extent do you agree with these focuses of development? | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree | Don't Know |
|---|---|---|---|---|---|---|
| Schools and teachers focus on<br>• discouraging students to do meaningless drilling<br>• adapting the mathematics curriculum to cater for student diversities so as to help students to do projects, exploratory activities, consolidation/enrichment activities, etc<br>• encouraging more teacher/student interactions in class<br>• helping students develop a positive attitude towards mathematics learning<br>• using diversified learning activities and tools to arouse students' interest in learning mathematics and to foster high-order thinking skills<br>• using diversified assessments for improving learning and teaching | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| 4. Have you read the following key curriculum documents? If you have, to what extent do you find the documents helpful in leading the Mathematics Education Key Learning Area curriculum reform in your school? | Have not yet read | Have read | | | | |
|---|---|---|---|---|---|---|
| | | Not Helpful | Slightly Helpful | Helpful | Very Helpful | No opinion |
| *a) Basic Education Curriculum Guide (Primary 1 – Secondary 3)* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *b) Mathematics Education Key Learning Area Curriculum Guide (Primary 1 – Secondary 3)* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *c) Syllabuses for Secondary Schools: Mathematics (Secondary 1 – 5) 1999* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *d) Additional Mathematics Curriculum Guide (Secondary 4 – 5)* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *e) Teaching Packages on S1 – 5 Mathematics*<br>*1 : Use of Information Technology*<br>*2 : Catering for Learner Differences*<br>*3 : Fostering High Order Thinking Skills* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *f) Learning and Teaching Packages on S1 – 5 Mathematics*<br>*4 : Number and Algebra Dimension*<br>*5 : Measures, Shape and Space Dimension*<br>*6 : Data Handling Dimension* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | Have not yet read | Have read | | | | |
|---|---|---|---|---|---|---|
| | | Not Helpful | Slightly Helpful | Helpful | Very Helpful | No opinion |
| *g) 中學數學輔導教學 (Note: Only Chinese version is available)* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| *h) Assessment for Learning (Secondary Mathematics) The Open-ended Questions* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | No Continuity | Some Continuity | High Degree of Continuity | Don't Know |
|---|---|---|---|---|
| 5. To what extent do you think there is continuity between the S1-S3 Mathematics Education curriculum and the existing school certificate S4-S5 Mathematics Education subject? | ☐ | ☐ | ☐ | ☐ |

6. Other views and suggestions for this section (Aims and Strategies of School Curriculum Development):

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## Section B Confidence and Competence in Implementing Curriculum Reform

| 7. As a curriculum leader / teacher of the Mathematics Education Key Learning Area,<br>- how confident are you in implementing the following strategies in your school?<br>- how competent are you in implementing these strategies? | Confidence Level<br>Low < ---------- > High | | | | | Competence Level<br>Low < ---------- > High | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| a) Co-ordinate the development of the school curriculum, and of the learning, teaching and assessment policies | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Play a leading role in building a culture of team work and collaboration among teachers | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Enhance the professional development of teachers by promoting active learning and reflection in the implementation of learning and teaching strategies | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Solicit support from the school management in implementing the curriculum reform | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | Confidence Level | | | | | Competence Level | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low < ---------- > High | | | | | Low < ---------- > High | | | | |
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| e) Make full use of community resources to enhance curriculum development | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Lead teachers to carry out annual review of the development of the curriculum as well as learning, teaching and assessment practices | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Design a school-based curriculum to facilitate a smooth transition from Primary Six to Secondary One | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Design a school-based curriculum to facilitate a smooth transition from Secondary Three to Four | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| i) Design appropriate learning tasks and activities to help students work towards the learning targets and objectives | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| j) Design projects in a single Mathematics subject, across the Mathematics or across KLAs to develop students' self-directed learning | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| k) Promote student learning through reading so as to enhance students' independent learning capabilities | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| l) Encourage students to read Mathematics reference books, magazines and journals | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| m) Incorporate civic and moral education into learning activities of this subject or KLA | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| n) Promote interactive learning through the use of information technology | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| o) Use effective teaching strategies to cater for learner diversity, e.g., make curriculum adjustment in the learning focus, learning materials, homework, and assessment | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| p) Use assessment and feedback to enhance learning and teaching | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| q) Adopt diversified modes of assessment to assess learning process and outcomes | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| r) Assign diversified homework according to the learning focus | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | Confidence Level | | | | | Competence Level | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low < ---------- > High | | | | | Low < ---------- > High | | | | |
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| s) Design exercises with emphasis on practicality and closely related to daily life situations | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| t) Provide learning materials as a means for students to acquire the mathematical concepts or master the skills | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| u) Create opportunities for students to learn from experience in real contexts (e.g. field observations, visits, and mathematics activities outside the school) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

8. Other views and suggestions for this section (Confidence and Competence in Implementing Curriculum Reform):

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## Section C Teachers' Professional Development

| | Very Inadequate | Inadequate | Adequate | Very Adequate | No Opinion |
|---|---|---|---|---|---|
| 9. Opportunities for teachers' professional development in different domains of curriculum development have been provided. To what extent do you find them adequate ? | ☐ | ☐ | ☐ | ☐ | ☐ |

| 10. Below are some ways to promote teachers' professional development in relation to curriculum reform. In your opinion, how effective are they in enhancing your professionalism? | Not Effective | Slightly Effective | Effective | Very Effective | No Opinion |
|---|---|---|---|---|---|
| a) Discussion among colleagues | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Collaborative lesson planning | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Peer observation | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Action research | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Attending seminars and workshops | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Attending in-service teacher development courses | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Independent study | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Others (Please specify):_____ | | | | | |

11. Other views and suggestions for this section (Teachers' Professional Development):

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## Section D Effectiveness of Learning and Teaching Strategies

| 12. Has your school implemented the following strategies in the learning and teaching of Mathematics? If yes, how effective do you think they are in enhancing student learning? | Not yet Implemented | Implemented, and it is | | | | |
|---|---|---|---|---|---|---|
| | | Not Effective | Slightly Effective | Effective | Very Effective | No Opinion |
| a) Design learning tasks and activities to help learners work towards the learning targets and objectives | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Design a school-based curriculum following the direction of the central curriculum framework | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Provide appropriate learning experiences to students as related to the three dimensions of Mathematics learning, development of generic skills, and positive values and attitudes | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Adopt learning and teaching strategies to enhance students' mathematics competence | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Use effective teaching strategies such as making adjustment to learning focus, learning materials, homework and assessment to cater for learner diversity | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Adopt diversified modes of assessment to provide feedback for improving student learning | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Arrange appropriate assessment tasks to replace parts of tests and examination | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Use a wide variety of quality print and non-print resources | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| i) Incorporate the learning through reading strategy in lesson design to enhance students' independent learning capabilities | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

13. Other views and suggestions for this section (Effectiveness of Learning and Teaching Strategies):

## Section E Factors Affecting the Curriculum Reform

| 14. To what extent are the following factors helpful in implementing the Mathematics Education curriculum reform in your school? | Not Helpful | Slightly Helpful | Helpful | Very Helpful | No Opinion |
|---|---|---|---|---|---|
| a) Students' interest in learning mathematics | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Students' applicability of mathematics | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Parents' understanding on diversified modes of assessment | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Fundamental training in mathematics for more teachers | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Teachers' understanding on students' learning ability | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) More spaces for curriculum adjustment and utilization of "spare time" | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) More experience sharing on the learning and teaching of mathematics | ☐ | ☐ | ☐ | ☐ | ☐ |

| 15. Have the following factors hindered, helped or not affected the implementation of the Mathematics Education curriculum reform in your school? | Serious Hindrance | Slight Hindrance | No effect | Of Some Help | Of Great Help | No Opinion |
|---|---|---|---|---|---|---|
| a) Understanding teachers about the aims of the curriculum reform | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Coordination among various reforms implemented in schools in recent years | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) The pace of curriculum change/reform | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Resources (e.g. manpower, funding) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Leadership of the School Head | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Attitude of parents | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Teachers' workload | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Students' adjustment to the teaching approaches promoted in the curriculum reform | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

16. Other views and suggestions for this section (Factors Affecting the Curriculum Reform):

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## Section F Impact of the Implementation of the Mathematics Education Curriculum Reform

| 17. To what extent do the students benefit from the implementation of the Mathematics Education curriculum reform in your school? | Not Significant 0 | 1 | 2 | 3 | Very Significant 4 |
|---|---|---|---|---|---|
| a) Students' motivation and interest in learning Mathematics are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Students' communication skills are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Students' critical thinking skills are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Students' creativity is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Students' ability in using mathematics to solve problems is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Students' ability to express their views clearly and logically in mathematical language is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Students' ability in using numbers and symbols is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Students' spatial sense is enriched | ☐ | ☐ | ☐ | ☐ | ☐ |
| i) Students' capability of appreciating the aesthetic nature and cultural aspect of mathematics is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| j) Students' overall capability in mathematics is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| k) Students' positive values and active attitudes are developed | ☐ | ☐ | ☐ | ☐ | ☐ |

| 18. How far have you benefited in your own professional development from implementing the Mathematics Education curriculum reform in your school? | Not Significant 0 | 1 | 2 | 3 | Very Significant 4 |
|---|---|---|---|---|---|
| a) Subject knowledge is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Teaching strategies are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Knowledge about curriculum development is enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Skills for developing and evaluating the school-based curriculum are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Skills for developing assessment strategies are enhanced | ☐ | ☐ | ☐ | ☐ | ☐ |

19. Other views and suggestions for this section (Impact of the Implementation of the Mathematics Education Curriculum Reform):

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## Section G School Curriculum Planning

| | Not yet planned | Planned, but not yet developed | Already begun to develop |
|---|---|---|---|
| 20. As a curriculum leader in the Mathematics Education Key Learning Area, have you planned the school-based curriculum of this Key Learning Area from now up to 2006? | ☐ | ☐ | ☐ |

| 21. What is the state of affairs in your school with regard to the following modes of curriculum planning and organization? | Not yet planned | Planned, but not yet developed | Already begun to develop |
|---|---|---|---|
| a) Select suitable depth of treatment for topics in the non-foundation parts of the mathematics curriculum. | ☐ | ☐ | ☐ |
| b) Allocate sufficient teaching hours for Mathematics Education KLA weekly (allocate 15-17.5% of lesson time) | ☐ | ☐ | ☐ |
| c) Utilize "spare time" to provide support and enrichment programmes | ☐ | ☐ | ☐ |
| d) Enable students to make connections across the arts and across KLAs | ☐ | ☐ | ☐ |

22. Other views and suggestions for this section (School Curriculum Planning):

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## Section H Personal Particulars

1. a) Total number of years of teaching:

☐ 0 –5 years ☐ 6 – 10 years ☐ 11 – 15 years ☐ 15 years or above

b) Total number of years of teaching in this school:

☐ 0 –5 years ☐ 6 – 10 years ☐ 11 – 15 years ☐ 15 years or above

c) Total number of years of teaching in the subject(s):

☐ 0 –5 years ☐ 6 – 10 years ☐ 11 – 15 years ☐ 15 years or above

2. Qualifications (multiple options acceptable) :

☐ Teacher's Certificate ☐ Advanced Certificate in Teacher Education ☐ Bachelor Degree

☐ Postgraduate Diploma/ Certificate of Ed ☐ Master Degree ☐ Doctoral Degree

☐ Others(Please specify): _____

3. Teacher training (multiple options acceptable) :

☐ Chinese Lang Ed ☐ English Lang Ed ☐ Mathematics Ed ☐ Science Ed ☐ Technology Ed

☐ General Studies ☐ Arts Ed ☐ Physical Ed ☐ Personal, Soc & Humanities Ed

## Section I Additional Comments

1. In your opinion, what additional measures will facililate the implementation of the Mathematics Education curriculum reform?

2. In your opinion, what other obstacles will hinder the implementation of the Mathematics Education curriculum reform?

3. With regard to the implementation of the Mathematics Education curriculum reform, what insights would you like to share?

4. Other comments/recommendations:

**~ End of Questionnaire. Thank you ! ~**