Questionnaire number: KH-Sci-S-

Secondary School

To be filled in by

Science Education KLA Teacher

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!

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 • recognize their roles and responsibilities as members in the family, society and the nation; and show concern for their well-being • understand their national identity and be committed to contributing to the nation and society • develop a habit of reading independently • engage in discussion actively and confidently in English and Chinese (including Putonghua) • develop creative thinking and master independent learning skills (e.g. critical thinking, information technology and self-management) • possess a breadth and foundation of knowledge in the eight Key Learning Areas • 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 Science 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 • should develop curiosity and interest in science • should develop ability to inquire and solve problems • should acquire basic scientific knowledge and concepts for living in and contributing to a scientific and technological world • should recognize the usefulness and limitations of science and the interconnections between science, technology and society and to develop an attitude of responsible citizenship, including respect for the environment and commitment to the wise use of resources • should become familiar with the language of science and be equipped with the skills to communicate ideas in science-related contexts • should appreciate and understand the evolutionary nature of scientific knowledge • should attain personal growth through studying science • should be prepared for further studies or enter careers in scientific and technological fields	☐	☐	☐	☐	☐	☐

3. The statements below refer to the short-term (2002-06) focuses of curriculum development in the Science 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
• making use of the core and extension parts of the science curriculum to design a school-based curriculum • arranging more scientific investigations and problem-solving activities • creating an open atmosphere for discussion and infusing process and thinking skills into science lessons • becoming aware of new developments in science and encouraging students to explore these developments	☐	☐	☐	☐	☐	☐

4. Have you read the following key curriculum documents? If you have, to what extent do you find the documents helpful in implementing the Science 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) Science Education Key Learning Area Curriculum Guide (Primary 1 – Secondary 3) (2002)	☐	☐	☐	☐	☐	☐
c) Chemistry Curriculum Guide (Secondary 4 – 5) (2002)	☐	☐	☐	☐	☐	☐
d) Physics Curriculum Guide (Secondary 4 – 5) (2002)	☐	☐	☐	☐	☐	☐
e) Biology Curriculum Guide (Secondary 4 – 5) (2002)	☐	☐	☐	☐	☐	☐
f) Science and Technology Curriculum and Assessment Guide (Secondary 4 – 5) (2003)	☐	☐	☐	☐	☐	☐
g) Biology Curriculum and Assessment Guide (Advanced Level) (2002)	☐	☐	☐	☐	☐	☐
h) Safety in Science Laboratories (2002)	☐	☐	☐	☐	☐	☐

	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 Science Education curriculum and the existing school certificate S4-S5 Science subjects?	☐	☐	☐	☐

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

_____

_____

Section B Confidence and Competence in Implementing Curriculum Reform

7. As a teacher of the Science Education Key Learning Area, - how confident are you in implementing the following strategies in your school? - how competent are you in implementing these strategies?	Confidence Level Low < ---------- > High 0	1	2	3	4	Competence Level Low < ---------- > High 0	1	2	3	4
a) Help design a school-based curriculum to facilitate a smooth transition from Primary Six to Secondary One	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Help design a school-based curriculum to facilitate a smooth transition from Secondary Three to Four	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Guide students to undergo project learning in the form of scientific investigations, research proposal, design and make of artefact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Encourage students to read a wide variety of materials to enhance their learning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) Incorporate elements of moral and civic education into science learning and teaching	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Promote interactive learning through the use of information technology	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Use effective strategies to cater for learner diversity (e.g. adapting the learning, teaching and assessment materials)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h) Use assessment as a basis for providing feedback to students to enhance their learning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
i) Use diversified modes of assessment to assess the learning process and its effectiveness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
j) Assign meaningful homework according to learning objectives	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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

_____

_____

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):

_____

_____

Section D Effectiveness of Learning and Teaching Strategies

12. Has your school implemented the following strategies in the learning and teaching of Science? 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 six strands of Science Education, development of generic skills, and positive values and attitudes	☐	☐	☐	☐	☐	☐
d) Use effective strategies to cater for learner diversity (e.g. adapting the learning, teaching and assessment materials)	☐	☐	☐	☐	☐	☐
e) Adopt diversified modes of assessment to provide feedback for improving student learning	☐	☐	☐	☐	☐	☐
f) Adopt appropriate assessment tasks to replace certain tests and examinations	☐	☐	☐	☐	☐	☐
g) Others (Please specify): _____						

13. In the learning and teaching of science, how many opportunities are provided for students to participate in the following investigative activities:	Very little opportunity	Little opportunity	Many opportunities	Very many opportunities
a) Focusing and planning (e.g. asking a testable question, proposing hypotheses, controlling variables, predicting results)	☐	☐	☐	☐
b) Conducting an experiment (e.g. observing, measuring, handling equipment)	☐	☐	☐	☐
c) Analyzing data (e.g. classifying evidences, interpreting data, communicating results)	☐	☐	☐	☐
d) Reflecting on experimental results (e.g. inferring from data, evaluating methods, suggesting improvement)	☐	☐	☐	☐

14. The followings are statements about the school-based curriculum development for Science Education in schools. Please indicate the extent to which these are achieved.	Not yet achieved	Achieved	Not applicable
a) Offer investigative practical work to develop students' process and thinking skills	☐	☐	☐
b) Encourage students to be aware of new developments in science	☐	☐	☐
c) Elicit students' prior knowledge or preconception and gear the lesson planning so as to facilitate concept building	☐	☐	☐
d) Design meaningful activities to motivate students and develop their scientific thinking skills	☐	☐	☐
e) Use written activities (e.g. learning journal, experimental report) to consolidate students' learning	☐	☐	☐
f) Question students, expecting them to explain their reasoning and use evidence to support their arguments	☐	☐	☐
g) Discuss with students about the nature of science, the evolutionary nature of scientific knowledge, the effectiveness and limitations of scientific models (e.g. particle model of matter, atomic model)	☐	☐	☐
h) Discuss with students about links between scientific theory and experimentation	☐	☐	☐
i) Provide learning context that is relevant to students' daily life, so that they realize the intertwining nature of science, technology and society	☐	☐	☐

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

_____

_____

Section E Factors Affecting the Curriculum Reform

16. Have the following factors hindered, helped or not affected the implementation of the Science Education curriculum reform in your school?	Serious Hindrance	Slight Hindrance	No Effect	Of Some Help	Of Great Help	No Opinion
a) Understanding among 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 from the School Head	☐	☐	☐	☐	☐	☐
f) Attitudes of parents	☐	☐	☐	☐	☐	☐
g) Teachers' workload	☐	☐	☐	☐	☐	☐
h) Students' adjustment to the teaching approaches promoted in the curriculum reform	☐	☐	☐	☐	☐	☐

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

_____

_____

Section F Impact of the Implementation of the Science Education Curriculum Reform

18. To what extent do the students benefit from the implementation of the Science Education curriculum reform in your school?	Not Significant 0	1	2	3	Very Significant 4
a) Students' motivation and interest in learning science are enhanced	☐	☐	☐	☐	☐
b) Students' communication skills are enhanced	☐	☐	☐	☐	☐
c) Students' critical thinking skills are enhanced	☐	☐	☐	☐	☐
d) Students' creativity is enhanced	☐	☐	☐	☐	☐
e) Students' ability to explore and to solve problems are enhanced	☐	☐	☐	☐	☐
f) Students recognize the usefulness and limitations of science	☐	☐	☐	☐	☐
g) Students appreciate the evolutionary nature of scientific knowledge	☐	☐	☐	☐	☐
h) Students develop positive values and attitudes	☐	☐	☐	☐	☐

19. How far have you benefited in your own professional development from implementing the Science 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	☐	☐	☐	☐	☐

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

_____

_____

Section G 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:

☐ 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, Social & Humanities Ed

Section H Additional Comments

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

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

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

4. Other comments/recommendations:

~ End of Questionnaire. Thank you ! ~