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Managing the process of an educational change

A study of school heads' support for Hong Kong's curriculum reform

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Abstract

Purpose – To cope with the challenges of the twenty-first century, the Hong Kong SAR government initiated the Curriculum Reform in 2001. In 2006, a research team from a tertiary institution was commissioned to review the progress of change for smooth implementation of the reform in its next phase. This paper aims to examine this issue.

Design/methodology/approach – The nature of the review is basically a survey, applying questionnaires and follow-up focus-group interviews to collect data from different groups of subjects. The sample was around 20 per cent of the population, i.e. a total of 252 primary ($n = 138$) and secondary ($n = 114$) schools.

Findings – The paper reports findings on the support for the Reform by primary and secondary schools. Five areas of agreement among school heads are examined, which include challenges to be met, guiding principles of the reform, learning goals, reform framework and the overall agreement with the rationale of the reform. It is found that, while the curriculum reform was supported among school heads, senior teachers and teachers, there was a gap between the views of senior management team and frontier teachers.

Research limitations/implications – This is a very comprehensive research project with a limited timeframe. The paper can only report and discuss findings mainly on the support for curriculum reform by school heads. Other aspects of the study will be discussed and reported separately in subsequent papers.

Practical implications – The gap between the views of senior management team and frontier teachers is worth probing as this is the most obstructive factor to the implementation of the reform. Identifying the cause would be the first step in formulating strategies to address and, hopefully, to facilitate the smooth transition from the phase of implementation to the continuation phase of the change process.

Originality/value – The study has suggested the development of a two-dimensional framework of agreement areas and stakeholders which will contribute to a better understanding of the change process in general, and achievements of a curriculum reform in particular. Other issues are also discussed.

Keywords Education, Curriculum development, Educational innovation

Paper type Research paper

Background

The twenty-first century is generally regarded to be a century of globalization (Bottery, 1999). While globalization can take different forms namely, political, economic, managerial, cultural and environmental, it has a particular effect on developing education for the knowledge-based economy in Hong Kong (Education Commission, 2000). In the tide of global changes, and after reunification with China since 1997, the

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Hong Kong Government regards adaptability, creativity, abilities for communication, self-learning and co-operation as the prerequisites for anyone to succeed, and a person's character, emotional qualities, horizons and learning as important factors in achieving excellence. These qualities of people will help sustain the international status of Hong Kong (Education Commission, 2000, para. 2.2)

To cope with these future needs, Hong Kong initiates her education reform and curriculum reform in 2000 and 2001 respectively. While the education reform focuses on issues related to the curricula, academic structure, assessment mechanisms at different stages and resource strategy of the entire education system in general, the curriculum reform in particular aims to develop students' interest in learning, communication skills, creativity, and sense of commitment in order to prepare them for lifelong learning. It strives to enable every student to achieve an all-around development according to his/her own attributes. Overall, the curriculum reform attempts to develop a new culture of learning and teaching by shifting from transmission of knowledge to learning how to learn, and thus make an impact on student learning. A curriculum framework is developed as the basic structure for learning and teaching throughout all stages of schooling to integrate three interconnected components namely Key Learning Areas (KLAs), Generic Skills, and Values and Attitudes. The KLAs are the organization of the school curriculum which is structured around fundamental and connected concepts of eight major knowledge domains. They provide the context for the development and application of generic skills, values and attitudes. The Generic Skills are fundamental to help students learn better. The nine generic skills include skills in collaboration, communication, creativity, critical thinking, information technology, numeracy, problem solving, self-management and study. Values are qualities that students should develop as principles underlying conduct and decision taking, while attitudes are personal dispositions needed to perform a task well.

To put in place the implementation strategies, a schedule that adopts a gradual approach (ten-year plan) has been worked out. 2001/2002 to 2005/2006 is the short-term phase of implementation, and 2006/2007 to 2010/2011 will be the medium-term phase. During the short-term phase, schools should have reviewed their current position and formulated their curriculum development plan (including pedagogy, textbooks, learning resources, and assessment strategies). It was intended that schools worked at their own pace by adapting the central curriculum to suit the needs and interests of the students, the context of the school, the readiness of the teachers, and the leadership of school heads. The baseline of the curriculum reform of Hong Kong was to promote learning to learn through Four Key Tasks (Moral and Civic Education, Reading to Learn, Project Learning, and Information Technology for Interactive Learning) and to enhance learning and teaching in the eight KLAs including infusing the priority generic skills (critical thinking, creativity, and communication) into learning and teaching of all KLAs. It was expected by 2006, schools should be ready to use their professional autonomy to strike a balance between the recommendations of the CDC's curriculum guides and school-based curriculum development in matters such as choice of options, contents, flexible use of time, and life-wide learning opportunities.

The curriculum reform has been implemented in primary and junior secondary levels of education since 2001. There is the need for the Government to monitor and review the progress of change continuously, to reflect upon it, and to suggest actions for improvement. In order to understand how schools have implemented the

curriculum reform, the Government has commissioned in 2006 a resarch team from a tertiary institution after a tendering procedure to conduct a survey in order to examine the effectiveness of short-term curriculum development in schools, and to provide information for the implementation of the curriculum reform in the medium-term phase, i.e. 2006/2007-2010/2011.

While the Government is concerned with managing the process by using the results of the evaluation study to solve the practical problems of the Reform, the research team is more concerned with extending and generalizing the understandings of the educational change. Both parties came up with an agreement that the study would serve both purposes.

This is the background to the study. This paper introduces the nature, research design and methods of the study. Then, it reports and discusses findings mainly on the support for curriculum reform by school heads. Other aspects of the study will be discussed and reported separately in subsequent publications.

Related literature

The evaluative study is thus a collaborative programme of the government and academics to serve the dual purposes of policy practice and academic analysis of an educational change. Their different roles are well explained by Duke (2004, p. 4) as follows:

> Educational change entails many challenges. Some involve achieving educational change; others concern understanding educational change. Achieving educational change calls for action. Images arise of visionary and dedicated teachers, principals, superintendents, parents, and policy makers working above and beyond the call of duty to improve learning for young people. Understanding educational change calls for analysis and reflection. We think of researchers and evaluators collecting and interpreting data, testing theories, and patiently trying to account for successful and unsuccessful reforms.

The literature related to this study include areas of:

- educational change; and
- evaluation studies.

On educational change

In the change literature, there are different views between the terms of change and innovation. While some scholars use the terms interchangeably, others regard innovation as the cause and change as the impact (Chambers, 1997; Duke, 2004). Bishop (1986) regards innovation as planned or intended. Watzlawick *et al.* (1974) identifies changes as "first-order" and "second-order". First-order change occurs within a system which itself remains unchanged, whereas second-order change represents a change in the system itself. They explain that a system can be an individual, organization or an ideology. Hall and Hord (2001) further argue that even an intended change may not be implemented overnight. They develop the "Level of Use of Innovation" instrument to help explain the extent of change, which can be used to assist change agents in preparing for differential responses to change. Educational change shares the characteristics of other forms of change, but is particularly distinct from other types of change in the lag time between economic, social and cultural change on one hand, and change in schools on the other. Duke (2004) therefore defines educational change as a change intended to alter the goals of education and/or to

improve what students are expected to learn, how students are instructed and assesses, and how educational functions are organized, regulated, governed and financed. Morris, McClelland and Wong (1998) indicate that educational changes or reforms emerge and are shaped by external (macro-level) and internal (micro-level) factors. The macro-level factors refer to the global influences and nation- or regional-level cultural, economic and political dynamics, while the micro-level factors refer to the outcome of the social interaction among individuals or educators. Using social studies in Hong Kong as an example, Wong (1992) shows how macro-level and micro-level factors affect the curriculum in different ways and at different school levels.

Most scholars in the field of change generally regard change as a process instead of an outcome and effective management of the process is essential for the success of any change initiated. Fullan (2001) is fond of saying that change is a journey, not a blueprint. What he means is that change is nonlinear, unpredictable and exciting. Many models have been developed since 1970s to explain the change process. These include the Rogers' diffusion model (1995), Kanter's innovation model (1988), Havelock's linkage model (1973), Rand model (1973), ACOT model (1991), Chambers's model (1997) and Kotter's eight-stage model (1996). Although these change models vary in many ways, they share some common elements, which include the four phases of discovery, design, development and implementation (Duke, 2004). On the other hand, the three phases suggested by Fullan (1991) are initiation, implementation and continuation. Initiation, also known as mobilization or adoption, consists of the process that leads up to and includes a decision to adopt or proceed with a change. Implementation or initial use, usually refer to the first two or three years of use, involves the first experiences of attempting to put an idea or reform into practice. Continuation, also known as incorporation, routinization or institutionalization, refers to whether the change gets built in as an ongoing part of the system or disappears by way of a decision to discard or through attrition. According to Fullan, there are factors affecting each phase of the change process, for example, those factors which influence whether or not changes get initiated in the first phase include the existence and quality of innovations, access to innovations, advocacy from central administration, teacher advocacy, external change agents, community pressure, new funding policy, and problem solving and bureaucratic orientations. The factors affecting implementation include the characteristics of the change, characteristics at the school district level, characteristics at the school level and characteristics external to the local system. The neglect of initiation and implementation issues will lead to resistance to change, and thus it has been the major cause of the failure of educational changes. If obstacles to initiation and implementation are not removed, instead of moving ahead from the Implementation phase to the Continuation phase, a change will suffer from:

- the failure to be used in the intended manner; and
- the rejection by the decision-makers.

The discovery of the implementation problems occurred in the late 1960s and early 1970s (Kanter, 1983; McLaughlin, 1998; Sarason, 1971). Among the various factors affecting initiation and implementation, a crucial factor is related to school policy-makers and teachers (Doyle and Ponder, 1977; Rice, 1982; Loucks, 1982; Whitaker, 1998; Fullan, 2001). Loucks (1982) asks for the support of decision-makers, the individuals and agencies to link external resources to adoption. Doyle and Ponder

(1977) identifies the three criteria influencing teachers' implementation of new reform items and practices. These criteria are:

(1) instrumentality, which refers to how clearly and specifically the practices are presented;

(2) congruence which describes how well the new practices are aligned with the teachers' present teaching philosophy and practices; and

(3) the cost, which is teachers' estimate of the extra time and effort the new practices required compared to the benefits such practices are likely to yield.

Fullan (2001) characterizes the implementation dip as a literal drop in performance and confidence as one encounters an innovation that requires new skills and new understanding. The implementation dip reflects the feeling of uneasiness with the new programmes or practices that will stall reform. Whitaker (1998) suggests four barriers to reform which incliude staff development, communication, lack of leadership and fragmentation. Duke (2004) argues that for successful implementation of change, there should be good leadership, continuous staff development, talent diversity, a collaborative culture, flexibility and stability. Since the 1990s, the study of change focus more on making change a success from the various perspectives of leadership, teachers' commitment and school culture (Fullan, 2003; Hallinger, 1996; Hargreaves, 2003, 2007; Cheng, 2002, Leithwood and Jantzi, 2005; Davies, 2005).

The part played by school heads in the change process has received much attention from the field in particular. Since Goodlad (1975) and Sirotnik (1987), it is generally agreed that the school is the unit or centre of change. The importance of school leadership to effective schooling, staff development, school improvement and educational reforms have been supported in numerous studies (Caldwell and Spinks, 1992; Cheng, 1994; Hallinger and Murphy, 1987; Sergiovanni, 1984). Calabrese (2002) argues that each person's belief system is directly connected to his or her ability to change. People will want to change if they understand the reasons for the change. If leaders or school heads agree with the change, they will create conditions for synergistic power leading to the creation of a climate in which the organization's collective consciousness prepares for change, and thus employees or teachers are motivated to change. Berman and McLaughlin (1977) find that projects or innovations having the active support of school heads are the most likely to fare well. Fullan (1993) indicates that one cannot mandate what matters, "the more complex the change, the less you can force it". He contends that school heads' agreement and actions serve to legitimate whether a change is to be taken seriously and to support teachers both psychologically, and with resources (Fullan, 2001). Using Hong Kong as an example, Morris and Scott (2005) argue that without the support of schools and school heads, all curriculum reforms initiated by the governments in the 1970s and 1980s were just "symbolic", and few real changes would occur. While these studies suggest the important role played by school heads, there are relatively few studies researching on the extent and impact of school heads' agreement on education changes (Cheng, 1996, 2005).

On evaluation studies

There has been discussion on the differences between evaluation and research (Guba,1966; Stufflebeam and Webster, 1988; Merwin, 1982). Stufflebeam and Webster (1988) point out that evaluations are often localized, short term, concerned with solving

practical problems, directed to ranking options and rooted in value questions, and they may be of little interest outside the immediate setting. Research on the other hand is concerned with extending and generalizing basic understandings about educational processes; concerns about immediate utility of results are secondary. Thus, evaluation findings often find their way into decision-making meetings in the form of handouts, oral or written reports whereas research results are disseminated through professional journals or books. As indicated by Merwin (1982), evaluation and research both use the same techniques, such as tests, questionnaires and case studies. Whether an evaluation will turn out to be a research depends on whether the researchers are free to pursue the development of new knowledge irrespective of the presence or absence of localized interests, and how the questions are chosen and reported.

In the discipline of management, evaluation is an element of controlling which comes after goal-setting, planning, organizing and leading (Robbins and Coulter, 2002). According to Duke (2004), continuous, systematic evaluation is a process necessary to assuring and demonstrating the quality of education. Since Smith and Tyler (1942), evaluation means determining whether objectives have been achieved. The objectives-based conception of evaluation has been replaced by a definition based on the views that evaluation should guide decision making. It is an improvement because its thrust is to ensure that evaluation guides a programme throughout its development and implementation and because it implies the assessment of a wider range of variables: needs, plans, operations and results. There is another view that evaluation is the systematic assessment of the worth or merit of some object. According to Stufflebeam (2003), evaluation studies serve three purposes which include decision making, accountability and promotion of understandings.

A number of evaluation models or approaches are developed since Smith and Tyler (1942), such as the formative-summative evaluation approach by Scriven (1967, 1981), the responsive evaluation approach by Stake (1967a, 1967b), the CIPP model by Stufflebeam (1971, 2000), the experimental research paradigm by Camphell and Stanley (1963). The CIPP model developed by Stufflebeam attempts to integrate the work of others, including Merwin (1982), and Madaus *et al.* (1983) to suggest four forms of evaluation with regard to context, input, process and product. The context evaluation assesses needs, problems, opportunities and objectives at different levels of the school district. The input evaluation searches for alternative plans and proposals and assesses whether their adoption likely would promote the meting of needs at a reasonable cost. The process evaluation monitors a project or programme in order both to help guide implementation and to provide a record for determining the extent to which the programme or project was implemented as designed. The product evaluation is an attempt to examine the outcomes of a programme and the extent to which they meet the needs of those being served.

The research questions

Overall, the study is a formative evaluation on the process of an educational change in Hong Kong. Figure 1 shows the framework for this study which is adapted from the

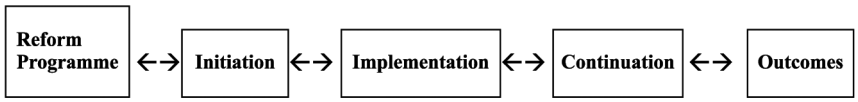

Figure 1.
A simplified overview of the change process of the curriculum reform

change literature. The "Reform Programme" and "Outcome" are added to provide a more complete overview of the change process.

In simple terms, the curriculum reform programme, which is mandated and initiated by the Government, has moved to what scholars would label as the phase of attempted use (implementation). This is a phase in which the curriculum reform programme can be seen, more or less, effectively in use in different schools. Continuation is an extension of the implementation phase in which the new reform programme is sustained. Outcome refers to different types of results and can be thought of, generally, as the degree of school improvement in relation to given criteria. Results could include, for example, improved student learning and attitudes, new skills, and problem-solving capacities.

Two points about the change process can be made. First, there are numerous factors operating at each phase. Second, as the two-way arrows imply, the change process is not a linear process, but rather one in which events at one phase can feed back to alter decisions made at previous stages, which then proceed to work their way through in a continuous interactive way. Therefore, the total timeframe from initiation to continuation is lengthy. This also makes an interim evaluation necessary to tackle the difficulties encountered and speed up the change process.

The significance of roles played by different stakeholders varies in different phases of the change process. For instance, policy makers of Hong Kong play a relatively important role in the reform programme whereas the roles played by school heads are more significant in the phase of initiation and teachers determine whether and how the reform is actually implemented.

With this conceptual understanding of the change process, the purpose of the paper is to investigate more specifically the extent the curriculum reform is supported by school heads. Although the reform programme is initiated by the Government, school heads can respond to it in different ways. They are the driving force for changes at the school level. As illustrated by Cheng (1996), there are five dimension of school leadership, namely human, structural, political, cultural and educational. Schoolheads in Hong Kong play a very important role in developing, shaping and transforming members' shared assumptions, values and beliefs about the school's mission, organization, technology of teaching and learning, interpersonal relationship and daily functioning. School heads also help motivate teachers in their jobs and their leadership is positively related to teacher performance in terms of job satisfaction and commitment.. They will not be committed to a change if they do not understand or agree with it. Their agreement with the curriculum reform is thus very crucial at the initation stage of the change and can be very influential on teachers' implementation. It also reflects whether school heads understand the change and be ready to commit to it or not. Without the agreement and support of school heads, the curriculum reform will not proceed smoothly along the change process.

Various areas of school heads' agreement with a curriculum change can be identified. For instance, school heads may agree with the need of the change to meet present or future challenges, they may not agree with the reform programme, or the implementation policies imposed by the government. They may also agree or disagree with the rationale, principles and learning goals of the curriculum reform. What school heads agree and disagree, and the extent of these agreements are useful information to help better understanding of the reform in terms of:

- the change strategies adopted by schools;
- teachers' commitment to change; and
- other facilitating and hindering factors affecting the curriculum reform.

Five areas of agreement of school heads are thus identified and examined in this paper:

(1) the agreement with the challenges to be met;
(2) the guiding principles of the reform;
(3) the learning goals
(4) the curriculum framework; and
(5) the overall agreement with the rationale of the curriculum reform.

Comparisons between primary and secondary school heads, and among school heads, subject panel heads and teachers are also reported. It is hoped that the answers to these questions will help contribute to better understanding of the change process in general, and school heads' agreement with the curriculum reform in particular.

Methodology

The nature of the study is basically a survey, applying questionnaires and follow-up focus-group interviews to collect data from different groups of subjects from primary and secondary schools of Hong Kong. These subject groups included school principals (secondary) and school heads (primary), curriculum directors (posts only in primary schools), KLA panel heads, teachers and students.

Four separate survey questionnaires were constructed and they covered six major areas as outlined in the official curriculum reform document (Curriculum Development Council, Education and Manpower Bureau, HKSAR, 2001). There were some common questions designed for the four groups of respondents namely, school heads, curriculum directors, panel heads and teachers, to investigate how each respondent group understood and rated the curriculum reform differently. Unique questions were also customized for the respective groups.

The study targeted around 20 per cent of the population, and a random sampling technique was used to ensure that bias was not introduced regarding who was included in the survey. As a result, a total of 252 primary ($n = 138$) and secondary schools ($n = 114$) formed the samples of the present survey.A pilot test with two primary and two secondary schools in different financial modes was conducted to refine the questionnaires for the actual survey.

All the quantitative data were analyzed by the Statistical Package for Social Science (SPSS version 12) program in the computer. Checking was carried out consistently. The data were then analyzed and presented into percentages and mean scores. Mean scores indicate the average level of agreement with an item on a 6-point scale (1 being strongly disagree and 6 being strongly agree). Higher mean score for an item indicates higher degree of agreement in the area addressed by this item. Unlike the percentages, mean scores do not provide a breakdown of responses by response category. Thus, mean scores may be less informative than percentages. However, mean scores are useful in examining changes in scores over time.

To follow up on the findings and to complement the quantitative nature of the survey, a follow-up qualitative research was conducted in the form of focus group

interviews (FGI). A random sample of school heads, curriculum directors, panel heads and teachers who had indicated on the survey questionnaires their willingness to be interviewed on a personal basis was selected.

Results of the survey

A total of 13,545 and 13,172 valid questionnaires were returned from 132 primary and 108 secondary schools respectively yielding a response rate of 96 per cent and 95 per cent respectively. These 26,717 questionnaires were filled out by both primary and secondary school heads, teachers (including curriculum directors, panel heads, and teachers), students of junior and senior primary and secondary.

The support for the curriculum reform is measured in terms of five areas of agreement namely, the agreement with the challenges to be met, the guiding principles, the learning goals, the curriculum framework and the overall agreements with the rationale of the curriclum reform.

Tables I-V compare the various items of the agreements with the support for the curriculum reform by primary and secondary school heads in 2001 and 2006 respectively. In the table, "*n*", "Mean", "SD", and "*p*-value" are presented. "*n*" represents the number of respondents, "Mean" represents the average level of the agreement for each item. The higher the mean scores, the higher the degree of agreement in the area addressed by the item. "SD" represents the standard deviation for each item. In addition to descriptive statistics, *t*-tests were used to test whether there was a significant change in their agreement of the curriculum reform from 2001 to 2006 for primary and secondary school heads and *p*-values are presented.

Agreement with the challenges to be met

School heads' view on whether the curriculum reform helps students to meet the seven challenges as stated in the *Learning to Learn* report was examined. In terms of the overall agreement, the mean scores for 2006 were significantly higher than those for 2001 for both primary and secondary school heads. It is clear from the results that the level of agreement had grown since the implementation of the curriculum reform in 2001. When analyzing the items individually, statistically difference again was found on each of the items. Generally speaking, the mean scores for 2006 were higher than those for 2001.

Agreement with the guiding principles

School heads were also asked to indicate their level of agreement with the eight guiding principles for the curriculum reform. With regards to the overall agreement with the guiding principles, the mean scores were statistically higher in 2006 compared with 2001 for both primary and secondary school heads. When examining the items separately, significant difference was found on all items between 2001 and 2006 for primary school heads. However, significant difference was found only on five out of the eight items between 2001 and 2006 for secondary school heads. They are as follows: "The overarching principle is to help students learn how to learn", "All students can learn, and should be entitled to learning experiences through a broad and balanced curriculum", "A learner-focused approach should be adopted", and "Diversified learning, teaching and assessment strategies should be used to suit the different needs of students", and "Schools have the flexibility to design their school-based curricula so

	Stake-holders	Year	*n*	Mean	SD	*p*-value
Challenges to be met						
A knowledge-based society	Primary school heads	2001	113	4.62	0.79	0.000**
		2006	113	5.25	0.61	
	Secondary school heads	2001	92	4.73	0.74	0.000**
		2006	92	5.11	0.70	
Globalization	Primary school heads	2001	114	4.32	0.96	0.000**
		2006	114	5.04	0.83	
	Secondary school heads	2001	92	4.53	0.81	0.000**
		2006	92	4.83	0.80	
The impact of information technology	Primary school heads	2001	114	4.81	0.81	0.000**
		2006	114	5.44	0.65	
	Secondary school heads	2001	92	4.86	0.72	0.000**
		2006	92	5.14	0.78	
The transience of things	Primary school heads	2001	113	4.62	0.78	0.000**
		2006	113	5.17	0.73	
	Secondary school heads	2001	92	4.48	0.90	0.000**
		2006	92	4.89	0.87	
The rising need for moral considerations	Primary school heads	2001	113	4.96	0.75	0.000**
		2006	113	5.34	0.76	
	Secondary school heads	2001	91	4.67	1.04	0.002**
		2006	91	4.91	1.14	
Increasing public participation in government affairs	Primary school heads	2001	114	4.27	0.82	0.000**
		2006	114	4.75	0.77	
	Secondary school heads	2001	91	4.18	0.95	0.000**
		2006	91	4.45	0.89	
The interdependent but competitive world	Primary school heads	2001	113	4.66	0.86	0.000**
		2006	113	5.14	0.80	
	Secondary school heads	2001	92	4.51	0.83	0.000**
		2006	92	4.79	0.82	
Overall agreement of the challenges to be met	Primary school heads	2001	114	4.61	0.60	0.000**
		2006	114	5.15	0.52	
	Secondary school heads	2001	92	4.57	0.63	0.000**
		2006	92	4.88	0.60	

Notes: * $p < 0.05$; ** $p < 0.005$

Table I.
Agreement with the challenges to be met by primary and secondary school heads in 2001 and 2006 respectively

long as the requirements set out in the central curriculum framework are fulfilled". Generally speaking, the level of agreement with the eight guiding principles was statistically higher in 2006 than in 2001.

Agreement with learning goals

In addition to the challenges and the eight guiding principles, school heads were also asked to indicate their level of agreement with the seven learning goals for the curriculum reform. As indicated in Table III, significant difference was found on the overall agreement of the learning goals for both primary school heads and secondary school heads. When examining the eight principles individually, significant difference was found on all items between 2001 and 2006 for primary school heads. But for secondary school heads, only three out of the seven principles were found to be significant. They are as follows: "Recognize their roles and their responsibilities as

	Stake-holders	Year	*n*	Mean	SD	*p*-value
Guiding principles						
The overarching principle is to help students learn how to learn	Primary school heads	2001	114	5.13	0.60	0.000**
		2006	114	5.46	0.60	
	Secondary school heads	2001	91	5.11	0.64	0.000**
		2006	91	5.34	0.65	
All students can learn, and should be entitled to learning experiences through a broad and balanced curriculum	Primary school heads	2001	114	4.90	0.83	0.000**
		2006	114	5.24	0.81	
	Secondary school heads	2001	91	4.82	0.95	0.016*
		2006	91	4.98	0.91	
A learner-focused approach should be adopted. Diversified learning, teaching and assessment strategies should be used to suit the different needs of students	Primary school heads	2001	113	4.87	0.73	0.000**
		2006	113	5.30	0.67	
	Secondary school heads	2001	92	4.99	0.72	0.000**
		2006	92	5.20	0.62	
Development strategies should be built on the strengths of the students, teachers, schools, and the wider community of Hong Kong	Primary school heads	2001	114	4.85	0.74	0.000**
		2006	114	5.15	0.67	
	Secondary school heads	2001	92	5.05	0.69	.496
		2006	92	5.10	0.79	
Practices should be adopted to achieve a balance across different purposes and conflicting interests and views	Primary school heads	2001	114	4.78	0.77	0.000**
		2006	114	5.14	0.68	
	Secondary school heads	2001	91	4.88	0.79	0.580
		2006	91	4.91	0.80	
Schools have the flexibility to design their school-based curricula so long as the requirements set out in the central curriculum framework are fulfilled	Primary school heads	2001	114	4.94	0.78	0.000**
		2006	114	5.39	0.63	
	Secondary school heads	2001	91	5.05	0.77	0.022*
		2006	91	5.21	0.74	
Curriculum development should be a continuous improvement process. It is quality that matters rather than speed	Primary school heads	2001	114	5.05	0.89	0.000**
		2006	114	5.39	0.88	
	Secondary school heads	2001	91	5.02	0.89	0.101
		2006	91	5.14	0.98	
Positive thinking with patience, celebration of small successes, and tolerance of ambiguity are essential to ensure the continuity of change	Primary school heads	2001	113	5.00	0.76	0.000**
		2006	113	5.28	0.74	
	Secondary school heads	2001	92	5.13	0.73	0.083
		2006	92	5.23	0.77	
Overall agreement of the guiding principles	Primary school heads	2001	114	4.94	0.50	0.000**
		2006	114	5.30	0.43	
	Secondary school heads	2001	92	5.01	0.51	0.002**
		2006	92	5.14	0.48	

Notes: * $p < 0.05$; ** $p < 0.005$

Table II.
Agreement with the guiding principles by primary and secondary school heads in 2001 and 2006 respectively

	Stake-holders	Year	*n*	Mean	SD	*p*-value
Learning goals						
Recognize their roles and their responsibilities as members in the family, the society, and the nation; and show concern for their wellbeing	Primary school heads	2001	114	4.85	0.77	0.000**
		2006	114	5.16	0.65	
	Secondary school heads	2001	92	5.10	0.61	0.002**
		2006	92	5.25	0.67	
Understand their national identity and be committed to contributing to the nation and society	Primary school heads	2001	114	4.80	0.71	0.000**
		2006	114	5.25	0.70	
	Secondary school heads	2001	92	4.97	0.76	0.000**
		2006	92	5.23	0.71	
Develop critical thinking and master independent learning skills	Primary school heads	2001	114	4.88	0.75	0.000**
		2006	114	5.41	0.66	
	Secondary school heads	2001	92	5.13	0.76	0.004**
		2006	92	5.30	0.75	
Engage in discussion actively and confidently in English and Chinese (including Putonghua)	Primary school heads	2001	114	5.04	0.87	0.000**
		2006	114	5.47	0.68	
	Secondary school heads	2001	92	5.21	0.69	0.103
		2006	92	5.34	0.84	
Develop a habit of reading independently	Primary school heads	2001	113	5.15	0.78	0.000**
		2006	113	5.51	0.57	
	Secondary school heads	2001	92	5.12	0.78	0.281
		2006	92	5.22	0.80	
Possess a breadth and foundation of knowledge in the eight Key Learning Areas (KLAs)	Primary school heads	2001	113	4.79	0.83	0.000**
		2006	113	5.09	0.71	
	Secondary school heads	2001	92	4.85	0.71	0.677
		2006	92	4.81	0.91	
Lead a healthy lifestyle and develop an interest in and appreciation of aesthetic and physical activities	Primary school heads	2001	113	4.93	0.85	0.000**
		2006	113	5.31	0.67	
	Secondary school heads	2001	92	4.89	0.72	0.078
		2006	92	5.01	0.82	
Overall agreement of the learning goals	Primary school heads	2001	114	4.92	0.62	0.000**
		2006	114	5.31	0.49	
	Secondary school heads	2001	92	5.04	0.53	0.008**
		2006	92	5.17	0.60	

Notes: * $p < 0.05$; ** $p < 0.005$

Table III.
Agreement with the learning goals by primary and secondary school heads in 2001 and 2006 respectively

members in the family, the society, and the nation; and show concern for their wellbeing," "Understand their national identity and be committed to contributing to the nation and society", and "Develop critical thinking and master independent learning skills". Generally speaking, the mean scores in 2006 were higher than those in 2001.

Agreement with curriculum framework

School heads were also asked to indicate their level of agreement on the seven items of the curriculum framework. As shown in Table IV, there was a significant difference between the responses in 2001 and those in 2006. In general, higher mean scores were found in 2006. When looking at the seven items separately, significant difference was

	Stakeholders	Year	*n*	Mean	SD	*p*-value
Curriculum framework						
The existing subjects are grouped into eight Key Learning Areas	Primary school heads	2001	113	4.55	0.69	0.000**
		2006	113	4.83	0.69	
	Secondary school heads	2001	91	4.34	0.97	0.040*
		2006	91	4.46	0.99	
Schools are urged to choose subjects from each KLA to provide a broad and balanced curriculum for all students	Primary school heads	2001	113	4.66	0.69	0.000**
		2006	113	4.92	0.66	
	Secondary school heads	2001	91	4.64	0.88	0.032*
		2006	91	4.73	0.92	
Schools can organize their own curricula using a combination of subjects, units, and projects	Primary school heads	2001	114	4.84	0.65	0.000**
		2006	114	5.12	0.63	
	Secondary school heads	2001	90	4.77	0.78	0.083
		2006	90	4.87	0.77	
Chinese history and culture should be duly strengthened throughout all stages of schooling	Primary school heads	2001	114	4.70	0.78	0.000**
		2006	114	4.98	0.76	
	Secondary school heads	2001	91	4.78	0.76	0.117
		2006	91	4.87	0.82	
Nine generic skills are fundamental to helping students learn better	Primary school heads	2001	114	4.90	0.67	0.000**
		2006	114	5.17	0.64	
	Secondary school heads	2001	91	4.71	0.81	0.006*
		2006	91	4.86	0.81	
Among the nine generic skills, priority should be placed on critical thinking skills, creativity, and communication skills	Primary school heads	2001	114	4.64	0.86	0.000**
		2006	114	5.01	0.87	
	Secondary school heads	2001	91	4.46	0.86	0.002**
		2006	91	4.63	0.95	
Enhancement of students' positive values and attitudes should be given high priority	Primary school heads	2001	114	5.30	0.82	0.000**
		2006	114	5.60	0.56	
	Secondary school heads	2001	91	5.32	0.61	0.000**
		2006	91	5.54	0.58	
Overall agreement of the curriculum framework	Primary school heads	2001	114	4.80	0.52	0.000**
		2006	114	5.09	0.45	
	Secondary school heads	2001	91	4.72	0.52	0.000**
		2006	91	4.85	0.56	

Notes: * $p < 0.05$; ** $p < 0.005$

Table IV.
Agreement with the curriculum framework by primary and secondary school heads in 2001 and 2006 respectively

		Overall agreement with the rationale of curriculum reform			
		n	Mean	SD	*p*-value
Primary school heads	2001	104	4.88	0.61	0.000**
	2006	104	5.13	0.58	
Secondary school heads	2001	90	4.91	0.59	0.134
	2006	90	4.98	0.58	

Notes: * $p < 0.05$; ** $p < 0.005$

Table V.
Overall agreement of the rational of the curriculum reform by primary and secondary school heads in 2001 and 2006 respectively

found on all items for primary school heads. On the other hand, five out of seven items were found to be significant difference from 2001 to 2006. Again, the mean scores were generally higher in 2006 than in 2001.

Overall agreements of the rationale of the curriculum reform

When asking their level of overall agreement of the rationale of the curriculum reform, significant difference was found between 2001 and 2006 for primary school heads. However, the mean score difference between 2001 and 2006 for school heads for secondary school heads was small and it was not statistically significant.

Comparison of findings among school principals, curriculum directors, panel heads and teachers

In addition to school heads, curriculum directors, panel heads and teachers were also asked to report the agreement with learning goals, curriculum framework, and the rational of the curriculum reform. The various agreements among principals, mid-level curriculum leaders and teachers with the learning goals, the curriculum framework and the overall rationale of the curriculum reform for 2006 are compared in Figure 2.

Figure 2 compared the agreement with the learning goals. Generally speaking, the percentages of middle managers and teachers agreeing with the learning goals were very high. 98.0 per cent of curriculum directors agreed with the learning goals, while the percentages for primary and secondary panel heads were 94.3 per cent and 91.2 per cent respectively. The percentage of agreement with the learning goals among primary school teachers was similar (92.4 per cent), but the percentage representing secondary school teachers was relatively lower (87.1 per cent). More than 25 per cent of the primary and secondary panel heads and teachers indicated that they agreed with the learning goals slightly. This finding was higher than the percentages reported from the school heads and curriculum directors.

It is worth noting that the percentages of school heads, curriculum directors, panel heads and teachers who reported "Agree/Strongly agree" were 90.7, 85.8, 68.7 and 66.6 respectively. The percentages of school heads, panel heads and teachers who reported "Agree/Strong agree" were 85.9, 65.5 and 59.4 respectively. The pattern of having a higher percentage of agreement for primary schools than for secondary schools, and for school heads, curriculum directors/panel heads than for teachers were consistent across all the seven learning goals.

Figure 2 also compared the agreement with the curriculum framework. The percentages of agreement among all respondents tended to cluster around certain items in the curriculum framework. In the primary schools, the item "Enhancement of students' positive values and attitudes should be given high priority" received the highest percentage of agreement with 100.0 per cent for school heads, 99.2 per cent for curriculum directors, 98.0 per cent for panel heads, and 97.1 per cent for teachers in 2006. "Schools can organise their own curricula using a combination of subjects, units, and projects" also received the highest percentage for school heads (100.0 per cent). However, the percentages of agreement for the item "Among the nine generic skills, priority should be placed on critical thinking skills, creativity, and communication skills" were lower for school heads (94.7 per cent), curriculum directors (93.6 per cent), and panel heads (89.0 per cent). For teachers (88.4 per cent), lower percentages were found in "The existing subjects are grouped into eight Key Learning Areas".

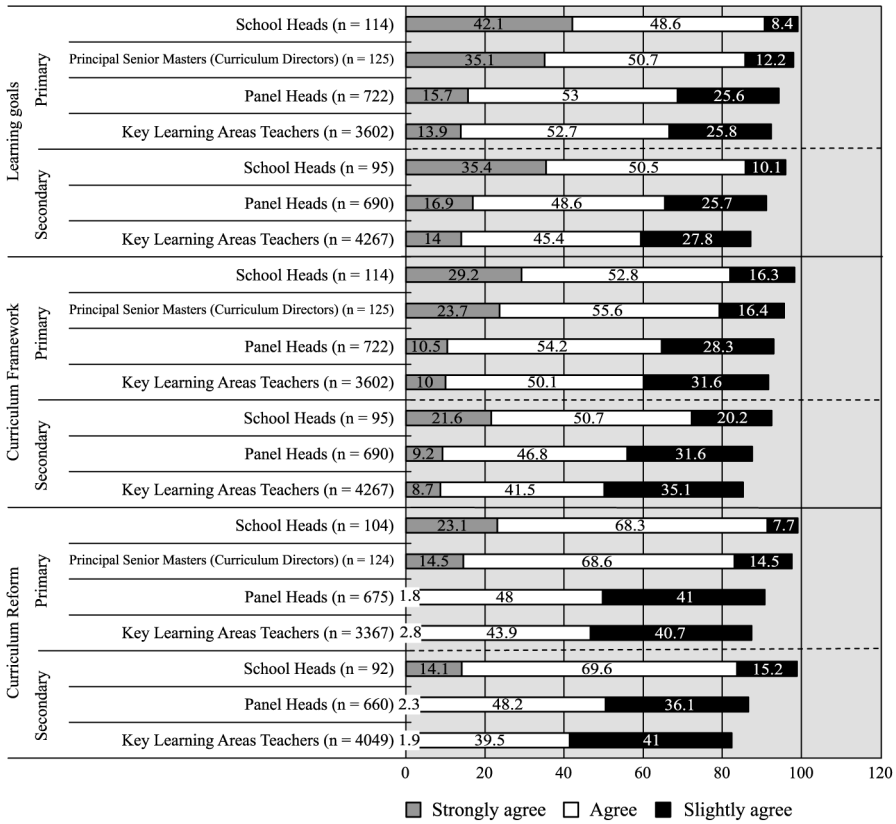

Figure 2.
Agreement with the learning goals, curriculum framework, and curriculum reform for 2006

Similarly, for secondary schools, the percentages of agreement with the item "Enhancement of students' positive values and attitudes should be given high priority" were the highest: 98.9 per cent for school heads, 95.8 per cent for panel heads, and 93.8 per cent for teachers for 2006. Lower percentages of agreement were found for the item "The existing subjects are grouped into eight Key Learning Areas." 85.1 per cent of school heads and 79.4 per cent of teachers expressed agreement with that item in 2006. 82.8 per cent of panel heads expressed agreement with the item "Among the nine generic skills, priority should be placed on critical thinking skills, creativity, and communication skills".

It is worth noting that the percentages of school heads, curriculum directors, panel heads and teachers who reported "Agree/Strongly agree" were 81, 79.3, 64.7 and 60.1 respectively. The percentages of school heads, panel heads and teachers who reported "Agree/Strong agree" were 72.3, 56 and 50.2 respectively. The pattern of having a higher percentage of agreement for primary schools than for secondary schools, and for school heads, curriculum directors/panel heads than for teachers were consistent across all the seven learning goals.

Figure 2 compares the overall agreements with the rationale of the curriculum reform. In general, most school heads and curriculum directors (over 98 per cent)

showed a high percentage of overall agreement with the rationale of the curriculum reform. When compared with school heads and curriculum directors, lower percentages of panel heads and teachers agreed with the rationale of the curriculum reform. The percentages ranged from 82-91 per cent. The percentages of school heads, curriculum directors, panel heads and teachers who reported "Agree/Strongly agree" were 91.4, 83.1, 49.8 and 46.7. The percentages of school heads, panel heads and teachers who reported "Agree/Strong agree" were 83.7, 50.5 and 41.4 respectively.

Discussion

The agreement with a change programme among stakeholders, particularly school heads influences whether or not an educational change gets initiated. According to the change literature, the fundamental issues are: how the school heads perceive the need for change, the quality of the change programme and the cost of change. What is suggested in this study is that the success of the curriculum reform in Hong Kong hinges on school heads' support for the overall aims of the curriculum, which specify the goals that students should be able to achieve. The survey indicated that the curriculum reform was supported by school heads, who saw the need for change. Overall, school heads agreed with the challenges to be met by Hong Kong schools as a result of globalization, the development of a knowledge-based society, impact of information technology, transience of things, rising need for moral consideration, increasing public participation in government affairs, and the interdependent but competitive world.

However, given the same scenario Hong Kong is facing, school heads' agreement with changes differed when compared with education reform and curriculum reform. Basically, this study specifically focused on curriculum reform and not on education reform. As reflected in the survey, school heads agreed with the need, principles, goals and curriculum framework of the curriculum reform. In the follow-up qualitative study, some interviewees did use the two terms interchangeably, which might reflect inadequate understanding of the distinction between the two. A careful analysis of the responses made by the interviewees suggested that most of the negative comments were more related to the education reform items. In the interviews, the majority of the interviewees contended that the rationale and principles of the curriculum reform were not contrary to their existing values, beliefs, and current school practices. For example, the student-centered learning approach and the 4 key tasks promoted by the curriculum reform matched well with the participants' existing values, beliefs, and current school practices. Their level of support also grew as they started to understand more and were more experienced in implementing the reform. In addition, they saw the need for the curriculum reform to strengthen the student-centered approach, lifelong learning, and self-learning capability of students.

The study suggests that school heads' agreement with the curriculum reform was not static and consistent in the change process. Primary and secondary school heads also differed in the extent of agreement. The findings from the survey showed that overall, school heads' agreement with the rationale of the curriculum reform was higher in 2006 than in 2001, because the level of agreement for the primary school heads grew over the years since the inception of the reform in 2001. In the follow-up focus group interviews, primary school heads reflected that after five years of exploration and implementation, all the stakeholders had gained a better understanding of, and agreement with the curriculum reform and came to see that

the reform arose out of social need. Secondary school heads shared the similar view but they pointed out that there was inadequate support provided both for them and their teachers. This explains why the growth of agreement for primary school heads was higher than the secondary school principals. Another interpretation could be, as raised by Wong and Wong (2000) and Wong and Wong (2003) that since many education reform items had already been started in primary schools from the 1990s, primary school heads were more ready than secondary principals for the curriculum reform.

While the findings on primary school heads suggest significant statistical differences for all items from 2001 to 2006, the increase in agreement with the challenges to be met by secondary principals from 2001 to 2006 does not mean a corresponding increase in agreement with other items, particularly under the "Learning goals" and "Curriculum Framework". No significant differences were found on "Learning goals" items, such as "possess on breath and foundation of knowledge in the eight key learning areas (KLAs)", "engaging in discussion actively and confidently in English and Chinese (including Putonghua", "lead a healthy lifestyle and develop an interest in and appreciation of aesthethic and physical activities". No significant differences were found on "Curriculum framework" items, such as "existing subjects are grouped into eight key learning areas", "schools are urged to choose subjects from each KLA to provide a broad and balanced curriculum for all students", "schools can organize their own curriculum using a combination of subjects, units and projects, etc.", "Chinese history and culture should be duly strengthened through all stages". These findings should have important policy implications. This suggests, for the sake of smooth transition from adoption towards the phases of implementation and continuation, policy makers should focus and devise the reform programme or strategies more on the secondary school level accordingly with respect to changes in these areas of agreement.

In comparing school heads' support for the curriculum reforms with teachers, it is found that the majority of respondents including school heads, curriculum directors, panel heads and teachers agreed with the seven learning goals, the curriculum framework, and the rationale of the curriculum reform. The findings indicated most of the respondents agreed that the curriculum reform was worthwhile and supported. Overall, this belief and support were useful in forming a firm basis and provided an impetus for implementing the reform.

However, there was a gap between views of school senior management team (school heads and curriculum directors) and frontline teachers, which support findings of most studies in the change process. The levels of agreement of school heads were higher than those of frontline teachers. Primary school respondents had a higher level of agreement than secondary school respondents. The survey findings thus indicated that the attitudes of the senior management team were more positive than those of frontline teachers. In this regard, the open-ended responses highlighted an observation that an inadequate understanding of and support for the reform by ordinary teachers constituted one of the factors that hindered implementation of the curriculum reform. In the focus-group interviews, most interviewees perceived the gap as a reflection of the actual implementation obstacles faced by frontline teachers. This gap is worth looking into, as some stakeholders regarded this as the most hindering factor to the implementation of the reform. It is important to find out whether it was frontline teachers' inadequate understanding of the reform, the senior management's inadequate understanding of frontline teachers, or other factors and implementation obstacles that

caused this gap. Identifying the cause would be the first step in formulating strategies to address, and hopefully, to facilitate the smooth transition from the phase of implementation to the continuation phase of the change process.

This paper has suggested a comprehensive way of studying school heads' agreement on the change process of a curriculum reform by specifically examining the areas of agreement in terms of challenges to be met, guiding principles of the reform, learning goals, reform framework and the overall agreement with the rationale of the reform. The findings of the agreement domain will provide a good basis for further interpretation of data collected from other domains of the evaluative study to examine the extent and aspects of achievements of the curriculum reform with respect to school heads' different areas of agreement. For instance, secondary teachers would experience less support from school heads in areas where the extent of agreement of their school heads was relatively lower as in one of the learning goals, "possess breadth and foundation of knowledge in the eight key learning areas (KLAs)". The areas of agreement will also form the basis to help compare views of school stakeholders and see how school heads and teachers perceive the reform differently, and how these differences exert impact on a curriculum change in terms of its achievements, facilitating and hindering factors, and so on. The study has thus suggested the development of a two-dimensional agreement framework (agreement areas and stakeholders) which will contribute to a better understanding of the change process in general, and achievements of a curriculum reform in particular. Further exploration and studies in the area are recommended.

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