Teacher Concerns about Curriculum Reform: The Case of Project Learning

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Project Learning has been highlighted as one of the four Key Tasks in the "Learning to Learn" curriculum reform introduced by the Hong Kong Curriculum Development Council (CDC) in 2001. Project Learning is a powerful learning and teaching strategy to help students learn how to learn by acquiring and constructing knowledge, and developing various important generic skills through a variety of learning experiences. Students need to be given appropriate guidance and feedback by teachers during and after the learning process. Therefore, it is critical to study the curriculum that has been planned, how it has been implemented and what the teachers' concerns are. In describing or measuring curriculum implementation, Marsh (1997) and Marsh & Willis (2007) have suggested the use of Stages of Concern Questionnaire (SoCQ), which is an assessment instrument adapted from the Concerns-Based Adoption Model (CBAM) (Hall, George & Rutterford, 1986), for assessing teachers' feelings as they become involved in implementing an innovation. In Hong Kong, the CDC (2002) has highlighted some key issues for the implementation of Project Learning in the Basic Education Curriculum Guide (3A). In sum, this study discusses how teachers view Project Learning, how it is integrated into the curriculum and the concerns that teachers have about it with reference to the SoCQ and the Basic Education Curriculum Guide. Finally, recommendations on issues about curriculum reform and policy outcomes regarding Project Learning based on teachers' concerns are put forward. The findings of the study will also provide useful references for other countries or regions implementing curriculum reform and project approach.

Keywords: Project learning, Teacher concern, Curriculum reform

THE STUDY

The aim of this study is to investigate teachers' concerns about curriculum reform with a particular emphasis on Project Learning. How do teachers conceptualize Project Learning? How has Project Learning been integrated into curriculum planning? What are the characteristics of Project Learning in different schools? What are teachers' concerns about Project Learning? Therefore, the objectives of the study are as follows:

- To investigate how teachers conceptualize Project Learning;
- To explore how Project Learning has been integrated into curriculum activities in schools;
- To analyze the differences between teachers conceptions of Project Learning

and the ways it is conceived in the curriculum reform; and

- To identify teachers' concerns about Project Learning as a key element of current curriculum reform.

Since teachers are the critical agents for bringing changes into their classrooms, the teachers themselves should be the major focus of analysis and source of evidence (Gross, Giacquinta & Bernstein, 1971; Doyle & Ponder, 1977; Fullan, 1982) regarding the introduction of curriculum reform. Therefore, there is a genuine need to examine and study teachers' implementation of Project Learning in schools as a key element of the "Learning to Learn" curriculum reform. Also, there is a need to monitor and review the progress of change and propose actions for continuous improvement. As recommended by the CDC (2001, p.120) on the interim review of the current curriculum reform, "the review is expected to be evidence-based … informed by other relevant projects and sources."

The essence of this study is to investigate how teachers view Project Learning as a key element of curriculum reform, how it is integrated into the curriculum and what concerns teachers have about it. Based on teachers' views, practices and concerns, findings of this study will contribute to developing, updating and strengthening the teaching and learning of Project Learning in schools, by means of catering to the authentic professional needs of teachers at the frontier.

Moreover, the study will contribute to the literature on teachers' concerns about Project Learning with particular reference to the local context of curriculum reform. With reference to the outcomes of this study, it allows teacher training institutions like HKIEd to determine direction and target groups of teachers for more intensive efforts regarding teachers' professional development. It also provides the EMB and school administrators with information regarding the design of interventions for effective curriculum adoption and implementation of Project Learning, and further planning of supporting services. Furthermore, this study will also provide critical insights for monitoring and reviewing the curriculum reforms in Hong Kong for policy makers.

CONCEPTUAL FRAMEWORK

Drake and Burns (2004) have identified Project-Based Learning as a route to the transdisciplinary approach to integrated curriculum where teachers organize the curriculum around student questions and concerns in a real-life context. Chard (1998) has suggested that teachers find out what the students already know and help them generate questions to explore by means of resources and opportunities provided by the teachers. The teaching of Project Learning also echoes with the recommendations made by the official document entitled "Learning to Learn – The Way Forward in Curriculum Development" published by the Curriculum Development Council (CDC) of Hong Kong in June of 2001, "Both integrated learning experiences and in the discipline-based studies are valuable for students. Therefore, students should be given opportunities to study both. …Cross-KLA studies also allow students to see things from different perspectives" (CDC, 2001, p.26). Furthermore, according to the same document, it has been recommended that schools:

- Trim and restructure the curriculum;
- Develop school-based curriculum;
- Use *Project Learning* as a tool to promote effective learning & teaching; and
- Share good practices and learning & teaching materials with peers (p. ii, iv & vii).

Therefore, professional teachers should equip themselves so as to contribute to the development of school-based Project Learning. However, in any innovation in education, the teacher is the key factor. A good professional teacher should be able to relate his or her own teaching to the whole curriculum. The professional teacher will not only

know what other teachers are doing, but will plan a teaching programme to complement that of their colleagues (Lawton, 1989).

The development of curriculum resources in Project Learning, consequently, has become critical and essential for all primary schools in Hong Kong. Leung (2003, 2004, 2006) has argued that teachers may apply various approaches to integrated learning such as project approach so as to help students extend their knowledge of the world; and that the critical factors for success include teachers' competence in teaching, further professional development of teachers, enhancement of teachers' capacity in curriculum planning, and finally, collegial team working in schools.

On managing the process of change, Brady and Kennedy (2003) have identified the benefits of school collaborative cultures, which include improving teacher effectiveness, creating professional confidence and responding to change.

As a consequence, Fullan (1989) has argued that some issues may be critical for the teaching of Project Learning in Hong Kong: For example, are there changes in class groupings and organization, materials, practices and behaviors, and in beliefs and understandings? Fullan has also identified some factors affecting implementation including teacher characteristics and orientations which are frequently quoted in the literature. Regarding the search for quality curriculum in Hong Kong, Law (2003) has highlighted that from the perspective of educators and university researchers in education, resistance to change is a combination of various factors and inadequacies in planning, coordination, and dissemination strategies. Moreover, on curriculum implementation, Marsh (1997) has suggested the importance of teachers' role in curriculum implementation:

> Curriculum starts as a plan. It only becomes a reality when teachers implement it with real students in a real classroom. Careful planning and development are obviously important, but they count for nothing unless teachers are aware of the product and have

the skills to implement the curriculum in their classrooms (p.156).

On measuring teacher activities regarding curriculum implementation, Marsh further suggests the use of the Stages of Concern (SoC) which focuses upon teachers' feelings as they become involved in implementing an innovation. It consists of seven sequential stages of teacher concern: (1) Awareness – describes a teacher who either is not aware of the change being proposed or does not want to learn about it, (2) Informational – refers to the questions a teacher asks when he/she hears about something new, (3) Personal – refers to the questions a teacher asks how the change might affect him/her, (4) Management – concerns that emerge as a teacher engages in new skills, time demands, materials, etc., (5) Consequence – teacher's thoughts on how he/she can make a programme work better for students, (6) Collaboration – how to make a programme work better by actively working on it with other teachers, and (7) Refocusing – seeking out a new and better change to implement the programme for success (Horsley & Loucks-Hosley, 1998). An educational researcher, Frances Fuller, developed the original Stages of Concern Questionnaire (SoCQ) in 1960 which is the primary dimension of the Concerns-Based Adoption Model (CBAM); and this model was developed at the Texas Research and Development Center to conceptualize and facilitate education change (Hall et al., 1986). On the process of change, Horsley and Loucks-Hosley (1998) have also advocated that SoC is one of the distinct ways in relation to the Concerns-Based Adoption Model (CBAM). Created through a decade of development, CBAM is about the natural and developmental process that teachers go through whenever they engage in something new and different; and the model has been in use for more than 30 years.

Horsley and Loucks-Hosley further argue that one of the greatest strengths of CBAM is that it gives evidence to, and supplies a description of, teachers' feelings of new program or practice; and the model also helps teachers move the change

along and evaluate the process. Consequently, they further propose that SoCQ is the part of CBAM that describes the affective dimension of change and many people regard it as the most helpful tool for teachers' professional development purpose. Therefore, the literature has revealed that the SoCQ is an appropriate instrument in determining teachers' concerns related to an innovation and the result of the questionnaire can be used to develop appropriate staff development that addresses students' needs.

In sum, identifying teachers' concerns is essential for successful curriculum implementation (Cheung, Ng & Hattie, 2000). Project Learning is one of the Key Tasks highlighted in the Learning to Learn curriculum reform which has been introduced to Hong Kong primary schools. There is a genuine need for educators in Hong Kong to examine and study the implementation of Project Learning by means of the SoCQ and in corporation with the key issues highlighted in the Basic Education Curriculum Guide (3A), so as to find out local teachers' concerns about Project Learning as illustrated in Figure 1.

Therefore, the research questions of the study are as follows:

1. Regarding Project Learning, what are the Stages of Concern (SoC) of the sample group of teachers and individuals in the group?
2. How do teachers feel when they are involved in implementing Project Learning?
3. How do teachers adopt and plan Project Learning in their teaching?
4. What are the challenges to teachers' teaching of Project Learning?
5. What are the effects of Project Learning on the students, their teachers and other parties concerned?
6. In teaching Project Learning, to whom do teachers turn to get support?
7. Are teachers adopting similar or different practices in teaching Project Learning in different schools?
8. What are teacher concerns regarding the implementation of Project Learning as a key element of curriculum reform?
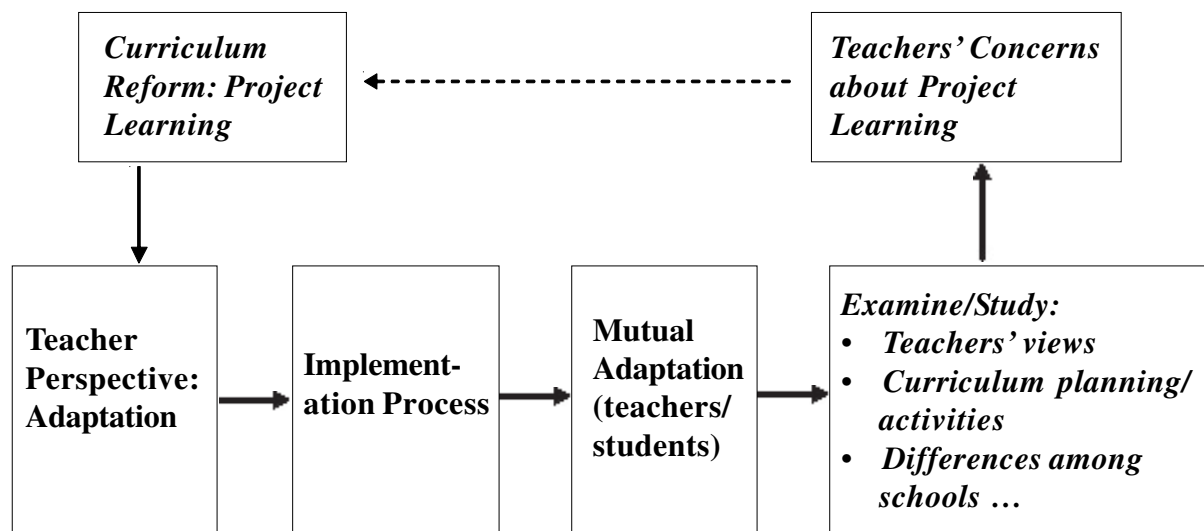
Figure 1.
Teacher Concerns about Curriculum Reform

METHODOLOGY

Sample

The sample was selected from three government subsidized primary schools (School A, School B and School C) in different districts of Hong Kong. These three schools have implemented Project Learning for five years, starting from the beginning of the "Learning to Learn" curriculum reform in 2001. Five teachers with different lengths of teaching experience in Project Learning from each school were selected to participate in the study. These groups of teachers are all involved in the implementation of Project Learning in their respective schools and are concerned with the development of curriculum reform in Hong Kong. The teachers were approached for a questionnaire survey and interviews in the academic year 2005-2006 (see biographical data of the sample in Appendix A).

Questionnaire Survey

The Stages of Concern Questionnaire (SoCQ) is an instrument which focuses upon teachers' feelings as they become involved in implementing an innovation (Hall et al., 1986). It has been widely used in many countries. Based on the original seven Stages of Concern (SoC), Cheung and Ng (2000) developed a questionnaire on the modified 5-stage SoC, namely, (1) Indifference, (2) Informational/Personal, (3) Management, (4) Consequence/Collaboration, and (5) Refocusing for the investigation of Hong Kong teachers' concerns about the Target Oriented Curriculum (TOC). The five SoC can be categorized into self-concerns (Indifference, Informational/Personal); task concerns (Management) and impact concerns (Consequence/Collaboration, Refocusing). With reference to the 22-item questionnaire on the 5-stage SoC in local context, adaptations have been made so as to measure Hong Kong teachers' concerns about the implementation of Project Learning; items were constructed to measure a particular stage of SoC form a subscale. Each item of the questionnaire is rated along an 8-point Likert Scale that ranges from 0 (not true of me now) to 7

(very true of me now). Teacher responses to the SoCQ items are coded on a scale of 0 to 7. Thus, large numbers reflect high concerns and small numbers reflect low concerns. The mean of a particular stage of SoC may vary from 0.00 to 7.00 where the highest mean by comparing the five means in the questionnaire helps to identify individual teacher's stage of SoC.

Regarding the self-concerns, if a teacher is identified to be at the "Indifference" stage, it indicates that the teacher has little concern about or interest in Project Learning; while being at the "Informational/Personal" stage indicates that the teacher is concerned about some general aspects of Project Learning such as benefits of the innovation, requirements for use, and personal commitment. Regarding the task concerns, being at the "Management stage" indicates that the teacher focuses on efficiency and time demands of implementing Project Learning; and the teacher also worries about the best use of relevant information/resources, scheduling, time and organization. For the impact concerns, being at the "Consequence/Collaboration" stage indicates that the teacher is concerned with the impact of Project Learning on students and the coordination/cooperation with others regarding use of the innovation; and finally, being at the "Refocusing" stage indicates that the teacher pays attention on the possibility of improving the innovation by changing some of the features of Project Learning or by replacing it with an alternative. In order to test the 5-stage SoCQ for Project Learning, it was first translated from Chinese into English and then translated back to Chinese to ensure valid content between the two versions. The teacher participants were asked to accomplish the questionnaire so as to identify their stages of concern they were in regarding Project Learning (see sample questionnaire in Appendix B).

Semi-structured interviews

A semi-structured interview allows respondents to express themselves at some length, but offers enough shape to prevent aimless rambling (Wragg, 1978). This results in a set order of questions but

also allows extended discussion to investigate valid fields of interest in depth. Since this type of interview has the advantage of allowing the exploration of areas of interest as they arise during the interview, it was used to collect some in-depth information regarding teachers' implementation of Project Learning in schools. The key informant interview technique is a variant of general interviewing with the special provision that the interview is with an individual who possesses unique or specialized knowledge, skills or expertise within an organization and who is willing to share these with the researcher (Goetz & LeCompte, 1984). Therefore, the key informant interview technique ensures that the researcher gains access to individuals who know their subject and who can provide valuable data (McKernan, 1994). The results of the interviews will contribute to identifying teachers' views on the conceptions of Project Learning, their practices, the challenges to curriculum planning, teaching and student assessment; and also insights for future policy-making regarding the implement of Project Learning as a key element of curriculum reform. Therefore,

the teacher participants served as key informants in the interviews. The interview questions developed with reference to the research questions are in Appendix C.

FINDINGS AND DISCUSSION

The findings from the questionnaire survey were processed using the SPSS descriptive statistics so as to identify teachers' Stage(s) of Concern (SoC) (Table 1a), and the findings from the interviews. Findings from the individual schools are summarized and compared in Tables 2 to 8. Analysis with reference to the research questions follows so as to present teachers' concerns about Project Learning as a key element of curriculum reform. Implications of the "Learning to Learn" curriculum reform and the policy-makers are also put forward for discussion.

1. *Regarding Project Learning, what are the Stages of Concern (SoC) of the sample group of teachers and individuals in the group?*

Table 1a.
Teachers' highest means from stages of concern questionnaire

Stage of concern	Highest mean		
	School A	School B	School C
Indifference			
Informational/Personal	5.60 (T3)		5.40 (T1)
Management	6.25 (T1)	5.00 (T1)	
Consequence/Collaboration	5.00 (T2)	5.25 (T3)	5.50 (T4)
	5.50 (T4)	6.00 (T4)	
	6.00 (T5)	6.50 (T2)	
		7.00 (T5)	
Refocusing			4.60 (T2)
			5.40 (T5)
			5.60 (T3)

Note. T1 = Teacher 1, Mean based on a scale of 0.00 to 7.00.

Table 1b.
Teachers' stages of concern

	Self-concerns (Indifference, Informational/ Personal)	Task concerns (Management)	Impact concerns (Consequence/Collabo- ration, Refocusing)
School A (5 teachers)	1	1	**3**
School B (5 teachers)	0	1	**4**
School C (5 teachers)	1	0	**4**
Sub-total (concerns)	2	2	**11**
Total (teachers)		**15**	

As can be seen in Table 1b, two teachers show their "self-concerns" while the other two teachers show their "task concerns". It was found through the questionnaire survey that the majority, 11 teachers, show "impact concerns" (Consequence/ Collaboration, Refocusing) on Project Learning. As for individual schools, a similar pattern of concerns appeared. Therefore, most teachers are concerned with the impact of Project Learning on students and the coordination/cooperation with others regarding use of the innovation. They are also concerned with the attention on possibility of improving the innovation by changing some of the features of Project Learning or by replacing it with an alternative. With regard to this finding, it is an advantage for the implementation of curriculum reform by Project Learning in the schools of Hong Kong. However, one example worthy of note from Table 1b is that all teachers from School B, in comparison with other two schools, fall in the categories of "task concerns" and "impact concerns". By referring to the biographical data in Appendix A, it is apparent that teachers from School B are in general more experienced than teachers from other schools. Due to the limitation of sampling in the present study, future research, therefore, should be conducted to investigate the relationship between teacher experience and their stages of concern.

2. *How do teachers feel when they are involved in implementing Project Learning?*

Table 2.
Teachers' concerns of implementation

	Teacher concern	School A	School B	School C
Self-concerns	Teacher professional development	x	x	
Task concerns	Efficiency and time demands			x
Impactconcerns	**Impact on student learning**	x	x	
	Student-centered approach			x
	Teacher collaboration	x	x	
	Cross-curricular approach			x

Note. Teacher collaboration refers to team preparation/teaching. Cross-curricular approach refers to cross-disciplinary project work.

Teachers' concerns of implementing Project Learning have been highlighted in Table 2. It was found that most of the concerns from the three schools fall into the category of "impact concerns" (Consequence/Collaboration, Refocusing); namely, impact on student learning, student-centered approach, teacher collaboration and cross-curricular approach. The finding echoes the result of the questionnaire survey showing that majority of the teachers are concerned with the impacts of implementing Project Learning in their schools.

3. How do teachers adopt and plan Project Learning in their teaching?

Regarding the qualities of Project Learning, Table 3a shows that "Life wide learning" and "Development of generic skills" are regarded by all the three schools as essential. Therefore, the organization of various activities for life wide learning and developing generic skills becomes the key element when implementing Project Learning in schools.

Regarding curriculum development of Project Learning as can be seen in Table 3b, "Basic subject knowledge", "Life wide learning activities", "Catering to individual differences", "Application of ICT" and "Resources provided by commercial

publishers" are pinpointed by all three schools as the guidelines or references for developing the curriculum for Project Learning in their schools. However, it is worthwhile to note that these schools regarded the importance of the inclusion and consideration of student's basic subject knowledge in the process of curriculum development. It implies that teachers are aware that the link between subject teaching and Project Learning may benefit student learning in school curriculum.

Another finding shows that teaching resources provided by the commercial publishers have significant influences on teachers from the three schools. On the contrary, only one school highlighted the consideration of "School-based curriculum material" in the curriculum development process. Since "Catering to individual differences" has been considered by all schools as a common factor for curriculum development, it will be critical to see whether school teachers recognize and consider the importance of developing school-based curriculum material, rather than relying too much on the teaching resources provided by the commercial publishers, for catering to the needs of students in individual schools.

Regarding curriculum management of Project Learning as can be seen in Table 3c, "Decision making by senior management" and "Decision

Table 3a.
Essential qualities of Project Learning

Essential qualities	School A	School B	School C
Life wide learning	x	x	x
Development of generic skills	x	x	x
All-round development	x		x
Construction of knowledge	x	x	
Teacher support to student		x	x
Inquiry learning	x		
Student-centered approach	x		

Note. Life wide learning refers to learning in different environments: classroom, home, and community, which complement each other. Generic skills refer to collaboration, communication, creativity, critical thinking, information technology and numeracy.

Table 3b.
Curriculum development of Project Learning

Curriculum development	School A	School B	School C
Basic subject knowledge	x	x	x
Life wide learning activities	x	x	x
Catering for individual differences	x	x	x
Application of ICT	x	x	x
Resources by commercial publishers	x	x	x
Linkage with daily-life experiences	x		x
Basic study skills for Project Learning		x	
Cross-curricular approach	x		
School-based curriculum material			x

Note. ICT refers to information and communication technologies. Resources by commercial publishers refer to text books and teaching aids/materials provided by the commercial publishers.

making at teachers' meeting" are the common practices, which implies curriculum decision making by various means in the three schools. However, it was also found that "Peer observation of teaching" is adopted by School A only. Since the arrangement of peer observation may have great impact on teachers concerned regarding managing the curriculum, professional development and staff appraisal, it is an area needs further exploration for the implementation of Project Learning in schools.

Referring to Table 3d, there are a number of common practices regarding teaching strategies for Project Learning, namely: "Whole class teaching", "Inquiry learning", "Cooperative learning", "Use of ICT", "Tutorial groups" and "Resources within school," which indicates that teachers in the three schools apply a variety of teaching approaches which they regarded as appropriate. Nevertheless, "Parental support" was highlighted only by School B as a common practice. As indicated in Table 3a, life wide learning

Table 3c.
Curriculum management of Project Learning

Curriculum management	School A	School B	School C
Decision making by senior management	x	x	x
Decision making at teachers' meeting	x	x	x
Teacher consultation by survey	x	x	
Team preparation		x	x
Sharing on student work	x	x	
Peer observation of teaching	x		

Note. Senior management refers to Head/Deputy Head of school.

Table 3d.
Teaching strategies for Project Learning

Teaching strategies	School A	School B	School C
Whole class teaching	x	x	x
Inquiry learning	x	x	x
Cooperative learning	x	x	x
Use of ICT	x	x	x
Tutorial groups	x	x	x
Resources within school	x	x	x
Community resources		x	x
Parental support		x	

Note. Cooperative learning refers to mixed ability group work. Tutorial groups refer to general/ traditional group work.

Table 3e.
Student learning of Project Learning

Student learning	School A	School B	School C
Positive attitude in general	x	x	x
Significant individual differences	x	x	x
Inquiry, ICT and group work	x	x	x
Interesting theme is critical	x		
Significant development of generic skills		x	
Family background affects student learning			x

Note. Positive attitude refers to students' active and proactive manner in learning.

is considered by the teachers as one of the essential qualities for Project Learning; therefore, neglecting the support from the parents is certainly an obstacle in the implementation of Project Learning with life wide learning.

Table 3e shows teachers' suggestions as to what the common characteristics of student learning are. These include "Positive attitude in general", "Significant individual differences" and "Inquiry, ICT and group work". It is rather interesting to see that teachers in School C raised an issue regarding "Family background affects student learning". The implication may be focused on the argument on whether Project Learning needs various support in terms of parental care, finance problem and social experience which may involve life wide learning and the use of ICT for learning. If this is the case, school teachers should consider how to support students from families of poor background.

Table 3f.
Student assessment of Project Learning

Student assessment	School A	School B	School C
Self-assessment	x	x	x
Peer-assessment	x	x	x
Oral and written report	x	x	x
Summative assessment	x	x	x
Formative assessment	x	x	
Alternative reporting		x	x
Dissemination of student work	x	x	
Formal reporting	x		
Parent-involved assessment		x	

Note. Alternative reporting refers to inform format of reporting. Dissemination of student work refers to display/exhibit of student work.

Table 3f shows that a variety of common approaches for student assessment of Project Learning has been adopted by the three schools. These include "Self-assessment", "Peer-assessment", "Oral and written report" and "Summative assessment". The other practices in student assessment are: "Formative assessment", "Alternative reporting" and "Dissemination of student work". It is quite worthy of note that only School A and School B adopt "Formal reporting" and "Parent-involved assessment" respectively. The former issue may involve the recognition of Project Learning in the formal curriculum in school while the latter issue may imply an obstacle for life wide learning in Project Learning.

4. *What are the challenges to teachers' teaching of Project Learning?*

Table 4.
Challenges to teachers

Challenges	School A	School B	School C
Identification of appropriate project theme	x	x	x
Lack of teaching resources	x	x	
Lack of professional development		x	x
Time limitation	x		
Too many student groups	x		
Lack of student-teacher communication	x		
Lack of support from commercial publishers	x		
School-based curriculum development	x		
Too many administrative duties	x		
Lack of parental support	x		
Student learning differences		x	
Lack of recognition in school curriculum		x	
Lack of support from administrative staff		x	
Lack of instant outcome			x

Note. Appropriate project theme refers to project theme that provides students with the capacity for inquiry. Lack of recognition in school curriculum refers to school authority's indifference to Project Learning.

There are many challenges or difficulties encountered by teachers in the three schools in teaching Project Learning, as can be seen in Table 4. The common ones are: "Identification of appropriate project theme", "Lack of teaching resources" and "Lack of professional development". The first challenge may be resolved by identifying themes from the current issues of student interest. Teachers may also refer to research or survey findings in relation to student interest on interesting themes of Project Learning provided by scholars in universities.

As for the lack of teaching resources and professional development, the Education Bureau (EDB) of Hong Kong government should review the current support to school teachers and evaluate, from time to time, the qualities and quantities of the current practice of professional development programmes. Although the EDB has provided much support in terms of teaching resources and training programmes since the start of implementation of curriculum reform in 2001, they are by no means sufficient and it is possible that they are assumed to be satisfactory without a continuous monitoring process for quality assurance.

5. *What are the effects of Project Learning on the students, their teachers and other parties concerned?*

Table 5a.
Student benefit of Project Learning

Student benefit	School A	School B	School C
Better learning atmosphere	x	x	x
Enhancement of relationship with parents	x	x	x
Communication skills	x		x
Self-confidence/esteem		x	x
Collaboration skills	x	x	
Problem solving	x		x
Creativity		x	
Study skills			x
Inquiry and learning to learn	x		
Self-evaluation		x	
Support subject learning	x		
Pleasure of learning			x

Note. Better learning atmosphere refers to interactions between teacher and students and among students themselves.

Table 5b.
Teacher benefit of Project Learning

Teacher benefit	School A	School B	School C
Better knowledge of students	x	x	x
Better catering for student needs	x	x	x
Interactive teaching and learning	x	x	
Teacher collaboration	x		x
Improving teaching skills		x	x
Job satisfaction		x	x

Note. Better knowledge of students refers to teachers are more knowledgeable to students' whole person development.

As Tables 5a and 5b show, teachers and students benefit in a number of ways from the teaching and learning process of Project Learning. The common student benefits are "Better learning atmosphere" and "Enhancement of relationship with parents" while the common teacher benefits are "Better knowledge of students" and "Better catering to student needs". On one hand, if the learning atmosphere in a school is enhanced, it may also help students in subject learning and lead to the development of generic skills. When parents find that their children are more active in learning, the student-parent relationship will be enhanced; and if the student-parent relationship is improved, it may be regarded as a positive stimulation to the all round development of student. On the other hand, when teachers know their students better, it will be an advantage for them and allow them to better cater to the individual needs of students for all round development. As a consequence, teachers in the three schools perceived the benefits that both teachers and students obtain from the implementation of Project Learning, which echoes the goals of curriculum reform aiming learning to learn, development of generic skills and all round development of students.

6. *In teaching Project Learning, to whom do teachers turn to get support?*

"School library" and "ICT resources" are the two common resources that teachers in the three schools turn to get support, as shown in Table 6. It will be very critical whether the school library and computer centers are well-equipped on one hand; and on the other hand, whether the collaboration among school teachers, school librarians and the ICT coordinators is established. Genuine support to teachers should comprise of hardware, software, as well as the staff collegiality within individual schools. Therefore, teachers teaching Project Learning should enhance the collaboration with the staff from school libraries and computer centers with the common goal of providing quality learning activities and support for their students.

Table 6.
Support to teachers

Support	School A	School B	School C
School library	x	x	x
ICT resources	x	x	x
Teacher collaboration/teaching	x	x	
Team preparation		x	x
Community resources and Curriculum experts		x	x
Peer observation of teaching	x		
Commercial publisher			x
Parental support		x	

Note. School library refers to teaching and learning resources in terms of references, literature and multi-media.

7. Are teachers adopting similar or different practices in teaching Project Learning in different schools?

It can be seen in Table 7a that there are some similar practices in terms of challenges and student and teacher benefits among the three sample schools. However, regarding the implementation of Project Learning in the said schools, there are also many different practices in terms of essential qualities, curriculum development, teaching strategies, student assessment, teacher support, challenges to teachers and student benefits, as indicated in Table 7b. As a consequence, there is a genuine need for the EDB in Hong Kong to support the establishment of school networks in order to enhance the sharing and disseminate the good practices in the implementation of Project Learning among schools in Hong Kong. The support from the EDB may include seminars or talks, websites, and interactive workshops or

Table 7a.
Similar practices of schools

Similar practices	School A	School B	School C
Challenges: Identification of appropriate project theme	x	x	x
Student benefits: Better learning atmosphere, Enhancement of relationship with parents	x	x	x
Teacher benefits: Better knowledge of students, Catering for student needs	x	x	x

Table 7b.
Different practices of schools

Different practices	School A	School B	School C
Essential qualities: inquiry learning	x		
Curriculum development: school-based curriculum material			x
cross-curricular approach	x		
peer observation of teaching	x		
Teaching strategies: Parental support		x	
Student assessment: Formal reporting	x		
Dissemination of student work		x	
Teacher Support: team collaboration/teaching	x		
commercial publishers			x
Challenges to teacher: lack of professional development		x	x
lack of teaching resources	x	x	
Student benefits: inquiry learning/learning to learn, support subject learning	x		

programmes for school teachers or representatives. The EDB has indeed provided the support to teachers as mentioned; however, the major area of neglect by the EDB is the publication of a "Project Learning Series" which updates the current and latest development of student learning by project approach in the local and global education community. Through this, teachers in Hong Kong may enhance their professionalism in teaching Project Learning with reference to the good practice from their colleagues in local and overseas schools.

8. What are teachers' concerns regarding the implementation of Project Learning as a key element of curriculum reform?

In Table 8, teachers in the three schools raised two major common concerns regarding the implementation of Project Learning as a key element of curriculum reform. They are "Heavy workload in teaching Project Learning" and "Special time and resources allocation for Project Learning". With reference to the 5-stage SoCQ developed by Cheung and Ng (2000), the former concerns can be categorized as "self-concerns" (Indifference, Informational/Personal) and the latter as "task concerns" (Management). However, as seen in Table 1b, majority of the sampled teachers show their "impact concerns" (Consequence/ Collaboration, Refocusing) on Project Learning in the questionnaire survey of this study. Consequently, by comparing the results of the questionnaire survey on teachers' SoC and the findings of the interviews, there are certain implications. Teachers are in a dilemma that they are very much concerned with the impact of Project Learning as a key element of the curriculum reform on their students as well as the possibilities of improving the curriculum reform; however, they are also worried about some general aspects of the reform such as personal commitment, scheduling and time factors. This can be interpreted that the teachers approve of the implementation of Project Learning as a key element of curriculum reform if they are supported with appropriate resources in terms of organization, scheduling, and time.

Table 8.
Other concerns of teachers

Other concerns	School A	School B	School C
Heavy workload in teaching Project Learning	x	x	x
Special time and resources allocation for Project Learning	x	x	x
Need on-site support from curriculum experts	x		x
Need support from senior management/ administrative staff	x	x	
Need balance between subject learning and Project Learning	x		
Need to implement cross-curricular approach	x		
Need to focus on certain generic skills		x	
Need to empower curriculum leaders regarding allocation of resources		x	

Note. Heavy workload refers to preparing, teaching, assessing and managing Project Learning. Special time and resources allocation refers to block lesson/teaching time and additional manpower/ administrative support for Project Learning.

CONCLUSION

Generalization of the results of the present study may be limited by the choice of sampling, sample size, time factor and method of data processing. However, the results may be used as reference for preparing teacher education programmes in Hong Kong and other regions implementing the curriculum reform and project approach. By highlighting the major findings for teachers to discuss, analyze, synthesize and reflect, based on the views shared, it is expected that the study will exercise an impact on policy makers as well as regarding teacher concerns about curriculum reform in primary school by means of Project Learning.

By referring to the findings of this study, several significant implications for the implementation of Project Learning as a key element of the curriculum reform in Hong Kong can be drawn.

First, regarding how teachers conceptualize Project Learning, it was found through the questionnaire survey as well as through the interviews that teachers have major concerns regarding the impacts of implementing Project Learning in their schools. The impacts refers to the consequences of implementing Project Learning for student learning, the collaboration of teaching Project Learning among teachers, and the refocusing of the teaching approach for Project Learning by means of cross-curricular approach. These findings about teachers' concepts are advantages for the future implementation of curriculum reform by Project Learning.

Second, regarding how Project Learning has been integrated into curriculum activities in schools, teachers highlighted the importance of the organization of various activities for life wide learning and developing generic skills of students. In the development of Project Learning curriculum in schools, teachers are aware of the link between subject teaching and Project Learning for better student learning. Since catering to individual differences is a common concern of teachers, it is crucial for them to develop school-based curriculum material, rather than rely too much on the commercially published teaching material. Moreover, peer observation of teaching may have great impact as regards managing the curriculum, professional development, and staff appraisal; it should be considered as an area needs for further exploration and study for the implementation of Project Learning in schools. As for the strategies for student learning, neglecting support from parents is surely an obstacle to the implementation of Project Learning in relation to life wide learning. It is rather arguable as to whether Project Learning needs various support in terms of parental care, finance consideration and social experiences of students which may be linked with life wide learning and the use of ICT for learning; therefore, school teachers may need to consider how to support students from poor families or those from a lower social class. The adoption of formal reporting student achievement may indicate the recognition of Project Learning in the formal school curriculum while the lack of parent-involved assessment may be pointing to an obstacle to the implementation of Project Learning.

Furthermore, there are a number of challenges and benefits for the implementation of Project Learning in schools. The critical issues are the difficulties in identifying an appropriate project theme and the lack of teaching resources and appropriate professional development for teachers. However, these challenges can be resolved with the utilization of university research findings as well as the enhanced and continuous professional development programmes with quality assurance. Despite the challenges, there are also a number of benefits in implementating Project Learning in schools. The enhanced learning atmosphere in schools can help much in other subject learning, development of generic skills, student-parent relationship, student-teacher relationships, catering to student needs and all round development of student. As a final point, the importance of the collaboration between teachers and the staff from school libraries and ICT/computer centers aiming at the common goal of providing quality learning activities and support for student learning in Project Learning should be emphasized.

Third, regarding Project Learning in Hong Kong schools since 2001, there are similar as well as different practices among schools. Similar practices are with regard to challenges encountered, student benefits identified, and teacher benefits experienced. Different practices are with regard to teachers' conception of essential qualities of Project Learning, curriculum development, teaching and assessment strategies, and support for/challenges to teachers. Since the school practices are diverse, in addition to the previous support to schools, the EDB of Hong Kong government should not take it for granted but continue to provide necessary support to teachers, in collaboration with the universities and other parties concerned, such as the launch of publications of teacher references with updates on the latest local and global development of student learning by project approach. Cheung and Ng (2000, p.120), on teacher concerns on curriculum reform, have suggested that a "systematic monitoring of teacher concerns by the government is necessary during the process of curriculum change; with the aid of information about teachers' stages of concern, change agents can design effective interventions."

Finally, the findings of this study imply that many school teachers are at the later Stages of Concern and they are much concerned about the impacts of Project Learning on their students as well as the possibilities of improving the implementation of curriculum reform. However, teachers are also worried about the self-concerns and task concerns. Self and task concerns mainly refer to heavy workload in teaching Project Learning, and special time and resources allocation for Project Learning. As a consequence, it implies that the success of implementation of Project Learning as a key element of the "Learning to Learn" curriculum reform depends much on how the policy-makers provide on-going and quality support for catering the teacher concerns. The critical factors will also provide useful references for other countries or regions implementing curriculum reform and project approach.

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**Appendix A
Sample (biographical data)**

School A				
Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5
Sex: male Educational level: Master of Philosophy Teaching experience: 6-10 years Teaching Project Learning experience: 2 years	Sex: female Educational level: degree Teaching experience: 11-15 years Teaching Project Learning experience: 2 years	Sex: male Educational level: Higher diploma Teaching experience: 11-15 years Teaching Project Learning experience: 2 years	Sex: female Educational level: higher diploma Teaching experience: 21 years or above Teaching Project Learning experience: 2 years	Sex: female Educational level: Master of Education Teaching experience: 0 to 5 years Teaching Project Learning experience: 5 years or above

School B				
Teacher 6	Teacher 7	Teacher 8	Teacher 9	Teacher 10
Sex: female Educational level: diploma Teaching experience: 6-10 years Teaching Project Learning experience: 5 years or above	Sex: female Educational level: degree Teaching experience: 6-10 years Teaching Project Learning experience: 4 years	Sex: female Educational level: degree Teaching experience: 16-20 years Teaching Project Learning experience: 3 years	Sex: female Educational level: degree Teaching experience: 21 years or above Teaching Project Learning experience: 3 years	Sex: female Educational level: degree Teaching experience: 21 years or above Teaching Project Learning experience: 5 years or above

School C				
Teacher 11	Teacher 12	Teacher 13	Teacher 14	Teacher 15
Sex: female Educational level: diploma Teaching experience: 6-10 years Teaching Project Learning experience: 3 Years	Sex: female Educational level: degree Teaching experience: 11-15 years Teaching Project Learning experience: 1 year	Sex: female Educational level: master Teaching experience: 11-15 years Teaching Project Learning experience: 3 years	Sex: female Educational level: degree Teaching experience: 11-15 years Teaching Project Learning experience: 3 years	Sex: female Educational level: diploma Teaching experience: 0-5 years Teaching Project Learning experience: 2 years

Appendix B
Questionnaire (Stages of Concern – Project Learning)

(PART A)

0	1	2	3	4	5	6	7
Not true of me now ⟵		**Somewhat true of me now**		⟶		**Very true of me now**	

No. * Subscales/ Items	0	1	2	3	4	5	6	7
**Stage 1 – Indifference (Mean =)								
1.1 Do not know what Project Learning is.								
1.2 Not concerned about Project Learning.								
1.3 Occupied with other teaching duties.								
1.4 Not interested in learning more about Project Learning.								
**Stage 2 – Informational/Personal (Mean =)								
2.1 What teachers are required to do in teaching Project Learning?								
2.2 How Project Learning differs from my subject teaching.								
2.3 Why Project Learning is better than my subject teaching.								
2.4 Time and energy commitments required to teach Project Learning.								
2.5 How my teaching role will change.								
**Stage 3 - Management (Mean =)								
3.1 Not having enough time for preparation of teaching Project Learning.								
3.2 How to accomplish effectively the requirements of Project Learning.								
3.3 Inability to manage the teaching resources of Project Learning.								
3.4 Time spent on non-academic matters related to Project Learning.								

**Stage 4 – Consequence/Collaboration (Mean =   )

4.1 Concern about the impact of
       Project Learning on students.
4.2 Develop working relationships with other teachers
       in teaching Project Learning.
4.3 Familiarize others with the progress of
       Project Learning.
4.4 Develop professionally in teaching Project Learning.

**Stage 5 – Refocusing (Mean =   )

5.1 Use feedback from students to adapt the curriculum
       of Project Learning
5.2 Revise the teaching strategies of Project Learning
       to improve its effectiveness
5.3 Modify certain practices in student assessment of
       Project Learning.
5.4 Adjust the learning arrangement/resources of
       Project Learning based on students' experiences.
5.5 Supplement, enhance, or replace Project Learning
       with students' learning experiences from other
       KLAs/subjects.

*Subscales/ Items are mixed up in administering the questionnaire survey.
**not indicated in teachers' copy

(PART B)

1. Sex/Gender
2. Type of school
3. Educational level/ Academic attainment
4. Teaching experience (in years)
5. Teaching experience of Project Learning (in years)

Appendix C
Interview Questions

Curriculum Development of Project Learning –

- What are the essential qualities of Project Learning?
- How do you formulate curriculum planning of Project Learning in relation to curriculum reform?
- How do you develop curriculum of Project Learning so as to provide students with "Life-wide Learning" experiences and cultivate their "Generic Skills"?
- Which mode of Project Learning have you adopted and why?
- In order to facilitate students' Project Learning, what factors does the curriculum planning take into account?
- How do you plan the time-table & resources flexibly so as to facilitate the implementation?

Curriculum Management of Project Learning -

- How do you or the teacher concerned coordinate the curriculum policies across individual Key Learning Areas (KLAs) or subjects?
- What are the channels for teachers to participate in curriculum decisions?
- What is the mechanism to monitor the teaching of Project Learning?
- What are the follow-ups conducted for evaluation of the effectiveness of implementing Project Learning?

Strategies and Skills in Teaching Project Learning –

- How do you plan the teaching strategies of Project Learning?
- How do you organize inquiry learning activities in Project Learning?
- What do you take into account for catering learner differences in Project Learning?
- What do you adopt for effective interaction and communication with your students in Project Learning?
- How do you effectively utilize the learning resources in Project Learning?

Student Learning of Project Learning –

- What are the learning attitudes of your students in Project Learning?
- What kinds of learning strategies your students apply in their Project Learning?
- How is the learning performance of your students in Project Learning?
- What are the differences in student learning of Project Learning in different Key Stages?

Student Assessment of Project Learning –

- What is the assessment policy you adopt for Project Learning?
- What are the assessment practices you design or plan?
- How do you report students' performance?
- How do you provide students with feedback?
- What are the functions of assessment information?

Implementation of Project Learning and Curriculum Reform: Teachers' Overall Concerns –

- What are the difficulties in the implementation of Project Learning in your school?
- What are the benefits or impacts to various parties regarding the implementation of Project Learning?
- What are the dos or don'ts of teaching Project Learning in your school?
- What are the major differences between Project Learning and subject knowledge?
- What are your expected professional knowledge, skills and attitudes for teaching Project Learning?
- What are the possible modes of teachers' professional development programmes for teaching Project Learning?
- Have you any ideas about the implementation of Project Learning in comparison with other curriculum initiatives?
- What are your suggestions to the future policy on Project Learning as a key element of curriculum reform?