

# ***New Conceptions of Teacher Effectiveness and Teacher Education in the New Century***

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## **INTRODUCTION**

In the last two decades, policy-makers, teacher education institutions and schools had implemented numerous initiatives in teacher education and development with aims to improve teacher performance. Although a lot of efforts have been made in this aspect, people, if not disappointed, still doubt very much whether the competence and performance of teachers can meet the challenges and needs in the new century. They begin to be aware of the limitations of the traditional paradigms and efforts on improving teacher performance and educational quality in schools (Cheng, 1998).

Traditionally, teaching process is often assumed to happen only at the individual level and only in classroom. That is, individual teachers perform teaching and individual students receive teacher's instruction and learn. This simplistic approach is reflected in the approaches to teacher education and development but also in most studies on teacher effectiveness which examine teacher effectiveness mainly at individual level. However, the narrow conception of teacher effectiveness is changing owing to the induction of broader concepts of educational process (Cheng, 1996b; Cheng & Tsui, 1996). School education is usually planned and implemented at the program level or the whole school level. Currently school management reforms and effective school movements emphasize whole school approach to improvement of school performance and student learning outcomes. Students are often taught not only by individual teachers but also by groups of teachers or by whole school teachers. In order to maximize school effectiveness, more attention should be given to the overall teacher effectiveness at the group level and school level. Therefore, teacher education and development should not focus solely on the individual level but also at the group, program and school levels.

The new century is an era of globalization, high technology and transformation in nearly every aspect of each society and the whole world. Schools and teachers have to face numerous new changes, uncertainties, and challenges rising from their internal and external environments. They are expected to perform a wide range of new functions to support the rapid developments in individuals, local communities, societies, and international relations (Cheng, 1996a; Tsui & Cheng, 2000). Teachers are often required to take up expanded roles and responsibilities including curriculum developer, new teacher mentor, staff development facilitator, action researcher, pre-service teacher educator, team leader, member of management board and etc. (Boles & Troven, 1996; Fessler & Ungaretti, 1994; Murphy, 1995). Also, they

are expected to be responsible for providing education quality in seven different models including the process model, the goals and specification model, the resource-input model, the satisfaction model, the legitimacy model, the absence of problems model, and the organizational learning model (Cheng & Tam, 1997).

In order to understand the changing and complex nature of teacher effectiveness and develop relevant and effective approaches to teacher education and development in a new era of globalization and information technology, this paper aims to propose that teacher education as a field of inquiry, practice and development in the new millennium should include the new conceptions of total teacher effectiveness, multiple models of education quality and multiple school functions at different levels and draw implications from them.

## **TOTAL TEACHER EFFECTIVENESS AND TEACHER EDUCATION**

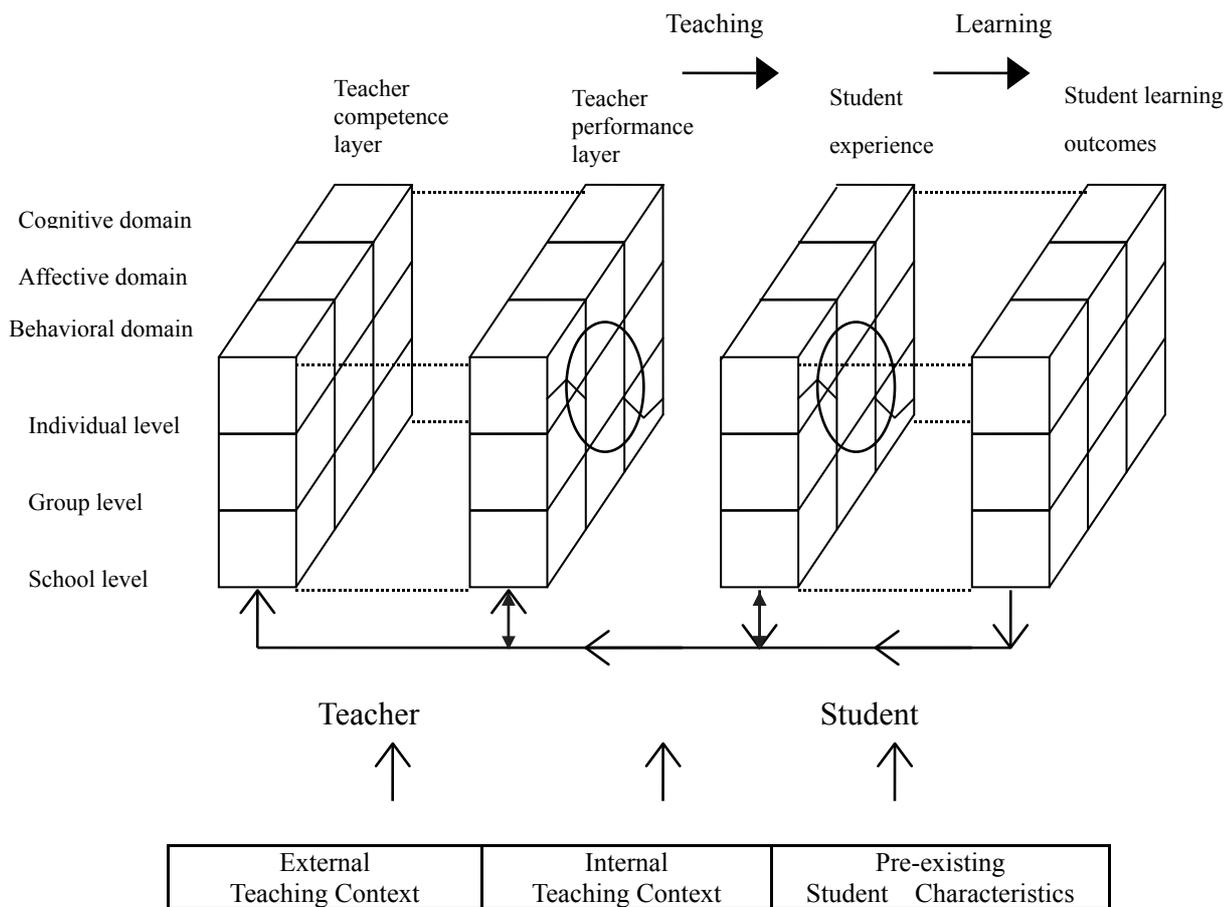
### **The Framework of Total Teacher Effectiveness**

Based on Cheng (1996a) and Cheng & Tsui (1996), the framework of total teacher effectiveness is proposed, as follows:

*Levels of Teacher Effectiveness:* As teachers work as teams or groups may not only use their energy effectively but also create new energy. It is obvious that when teachers act as a whole, they may have a better chance to influence and change the constraints given by the external and internal teaching contexts. Therefore, the consideration of teacher effectiveness should include not only the individual level but also the group and school levels.

*Domains of Effectiveness:* The consideration of teacher effectiveness should include the quality of teacher competence and performance in various domains such as the behavioral domain, the affective domain, and the cognitive domain; and that this teacher quality may exert effects on students in various domains accordingly.

*Total Teacher Effectiveness.* Taking the three domains ( affective, behavioral, and cognitive domains) and the three levels ( individual, group, and school levels) into consideration, the nature and characteristics of teacher effectiveness should be studied at multi-levels and multi-domains. The conceptual framework of *total teacher effectiveness* for describing the complicated nature of teacher effectiveness is illustrated as shown in Figure 1. (Cheng & Tsui, 1996).



**Figure 1: Conceptual Framework of Total Teacher Effectiveness**

(Adapted from Cheng & Tsui, 1996)

The conception of total teacher effectiveness involves two important categories of actors (teachers and students) at three different levels (individual, group, and school). The processes and effects of teaching and learning may happen in the behavior, affective, and cognitive domains of different actors at different levels. Specifically, teacher effectiveness should involve the behavioral, affective, and cognitive performance of all teachers and students at individual, group, and school levels. As shown in Figure 1, it is related to the teaching and learning process involving teacher competence layer, teacher performance layer, student experience layer, and student learning outcome layer. The teacher competence layer is the total behavioral, affective, and cognitive competence of teachers at the individual, group, and school levels. This layer represents the total static quality of teachers. The teacher performance layer is the total performance of teachers in the three domains at the three levels. It represents the total dynamic quality of teachers in teaching process. In general, the quality of teacher performance layer is positively associated with the quality of teacher competence layer. In addition, the relationship between these two layers can be moderated by the influence of external teaching context (e.g. organizational factors, leadership, and school environment, etc.).

The student experience layer represents the total learning experience of students in the three domains at the individual, group, and school levels. And the student learning outcomes layer represents the total learning outcomes of students in the three domains at the three levels. In general, the quality of teacher performance layer as a whole has a

positive impact on the quality of student learning experience layer and the latter has a positive relationship with the quality of student learning outcomes layer. Again, these relationships may be affected by the characteristics of internal teaching context ( including student subculture, classroom climate, student ability grouping, learning environment, etc.).

### **Implications for Teacher Education and Development.**

In order to maximize teacher effectiveness, teacher education should aim to develop whole teacher competence layer and whole teacher performance layer in addition to individual teacher competence or performance. In other words, teacher education or staff development should cover the affective, behavioral, and cognitive domains at the individual, groups, and school levels.

According to the concept of congruence in system (Cheng, 1996a), whether teacher competence is congruent across the affective, behavioral, and cognitive domains and across the individual, group, and school levels (i.e. congruence within the teacher competence layer) can affect the contribution of the teacher competence layer to the teacher performance layer. The more the congruence of teacher competence across domains and across levels, the more the contribution of teacher competence layer to teacher performance layer. The congruence across domains represents the extent to which affective competence, behavioral competence, and cognitive competence of teachers are mutually supported and reinforced in contributing to teachers' action and performance. The congruence across levels represents the extent to which the competence of individual teachers, groups of teachers, and whole school teachers is mutually supported and reinforced in contributing to teachers' action and performance. Similarly, the more the congruence of teacher performance across domains and across levels (i.e. congruence within the teacher performance layer), the more the contribution of the teacher performance layer to the student learning experience layer. Also the more the congruence of student learning experience across domains and across levels (i.e. congruence within the student learning outcomes layer), the more the contribution of the student learning experience layer to the student learning outcomes layer.

Based on the concept of congruence within layer, the approach to developing teachers and their effectiveness should include assurance of congruence within the teacher competence layer and within the teacher performance layer. This holistic approach is very different from the traditional thinking of teacher development that focuses only on fragmentary and overt aspect of teacher performance without taking totality and congruence into consideration.

According to Cheng and Tam (1994) and Cheng (1996a, b), development cycle can be used to strengthen the quality of teacher layers and ensure congruence within teacher layers. Specifically, a long-term program of teacher education and development may be established at the individual, group, and school levels to facilitate their reflection on the congruence between values and beliefs of education and management in school and the congruence of performance in their affective, behavioral or technical, and cognitive domains. And the development program supports them to make a continuous self learning cycle for their own development and improvement. This is in line with literature in the field of teacher development and school changes (Cheng, 2001; Fullan, 1992; Hargreaves, 1994; Mok & Cheng, 2001; Rosenholtz, 1989; Rosenholtz & Simpson, 1990; Whitaker, 1993).

The development cycle may start at individual teacher level and focus on overt performance, mastering teaching and classroom management techniques. Then, teachers should be supported to have opportunities at the individual, group, and school levels to reflect on their values, beliefs and meanings of education and school management. From the

reflection by themselves or among themselves, they can reorganize their cognitive structure, re-shape their teaching styles and re-establish their professional confidence and commitment. Through self-learning as an individual or as a group, they are more willing to cooperate and capable to achieve better teaching performance (Fullan, 1992; Mok & Cheng, 2001; Sergiovanni and Starratt, 1993). A substantial literature supports that no matter whether at individual level, the group level, or the whole school level, teachers' performance is linked with their beliefs, attitudes, satisfaction, commitment, sense of achievement (Cheng, 1996c). Therefore, the development cycle should include a strong component on the affective and cognitive domains in addition to the behavioral or technical component for teachers at multi-levels. Various forms of activities for teacher education and development can be designed to achieve different development objectives for teachers as well as administrators at different levels. Table 1 summarizes some examples of activities and objectives (Cheng and Tam, 1994).

In sum, from the implications of total teacher effectiveness, teacher education and development should be conceptualized as a continuous life-long process involving not only pre-service but also in-service education; not only individual teachers but also groups of teachers and the whole school; and developing not only skills or behavioral competence but also affective and cognitive domains as a community of teaching professionals.

Table 1. Activities and Objectives for Teacher Education and Development (examples)

	<b>For teachers</b>	<b>For administrators</b>	
<b>I N D I V I D U A L</b>	<b>Behavioral</b>	<ul style="list-style-type: none"> <li>• Increase knowledge, techniques and specialty of teaching and learning</li> <li>• Find out the factors hindering the full play of teacher's competence</li> <li>• Improve teaching performance</li> <li>• Encourage participation and development</li> <li>• Assist the work of colleagues</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance administrative efficiency</li> <li>• Improve leadership</li> <li>• Master techniques of planning and management</li> <li>• Improve supervision style</li> <li>• Encourage open mind and learning</li> <li>• Assist the development of colleagues</li> </ul>
	<b>Affective</b>	<ul style="list-style-type: none"> <li>• Reinforce confidence as a teaching professional</li> <li>• Enhance satisfaction in teaching</li> <li>• Increase personal commitment to education</li> </ul>	<ul style="list-style-type: none"> <li>• Reinforce confidence as an administrative leader</li> <li>• Enhance satisfaction in administration</li> <li>• Increase the concern and support for colleagues</li> <li>• Increase personal commitment to education and administrative work</li> </ul>
	<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Understand current educational trends</li> <li>• Understand current school policies and objectives of school functions</li> <li>• Recognize the values of teaching and establish personal beliefs about education</li> <li>• Provide teachers with opportunities for role clarification</li> <li>• Identify with the school mission</li> <li>• Self-evaluate and reflect on educational work</li> <li>• Responsible for outcomes of teaching</li> </ul>	<ul style="list-style-type: none"> <li>• Understand current educational trends</li> <li>• Reflection on current school policies and objectives of school functions</li> <li>• Recognize ethical and moral issues on administration</li> <li>• Recognize the values of administration</li> <li>• Establish personal beliefs about leadership</li> <li>• Clarify the role of administration</li> <li>• Self-evaluate and reflect on administration</li> <li>• Responsible for colleagues' performance and administrative results</li> </ul>
<b>G R O U P</b>	<b>Behavioral</b>	<ul style="list-style-type: none"> <li>• Provide opportunities for members to learn from each other</li> <li>• Work together to teach and develop curriculum</li> <li>• Inter-class visit</li> <li>• Learn to share and participate</li> </ul>	<ul style="list-style-type: none"> <li>• Solve internal conflicts and improve communication</li> <li>• Lead group/team work</li> <li>• Learn to delegate and distribute work</li> </ul>
	<b>Affective</b>	<ul style="list-style-type: none"> <li>• Establish team spirit</li> <li>• Encourage mutual trust of members</li> <li>• Foster friendship</li> </ul>	<ul style="list-style-type: none"> <li>• Establish team spirit</li> <li>• Encourage mutual trust of members</li> <li>• Foster friendship</li> </ul>
	<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Discuss and understand the relationship between group work and school policies</li> <li>• Evaluate the effectiveness of group work</li> <li>• Analyze strengths, weaknesses and development of the group</li> <li>• Ensure the role and value of group work</li> <li>• Commitment to group effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss and ensure the relationship between groups and school policies</li> <li>• Recognize the values of collaborative management and participative decision-making</li> <li>• Evaluate strengths and weaknesses of each policy</li> <li>• Ensure the role and value of the administrative group</li> <li>• Commitment to policy effectiveness</li> </ul>
<b>S C H O O L</b>	<b>Behavioral</b>	<ul style="list-style-type: none"> <li>• Provide opportunities for whole-school teaching collaboration</li> <li>• Improve the use of whole school resources</li> <li>• Find out whole school factors unfavorable for teaching</li> </ul>	<ul style="list-style-type: none"> <li>• Provide opportunities for whole school collaboration for teaching and management</li> <li>• Improve the management of whole-school resources</li> <li>• Find out and prevent factors unfavorable for the full development of staff</li> <li>• Develop the whole school image</li> </ul>
	<b>Affective</b>	<ul style="list-style-type: none"> <li>• Foster a sense of belonging to the school</li> <li>• Establish whole school collaborative climate among teachers</li> <li>• Develop a homely atmosphere in the school</li> </ul>	<ul style="list-style-type: none"> <li>• Establish whole school climate and a sense of belonging</li> <li>• Establish close relationship between administrators and teachers</li> <li>• Develop a homely atmosphere in the school</li> </ul>
	<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Evaluate school effectiveness</li> <li>• Participate in developing school mission and goals</li> <li>• Ensure the values of school education</li> <li>• Identify with the unique mission and vision of the school</li> </ul>	<ul style="list-style-type: none"> <li>• Lead the discussion and reflection on school policies</li> <li>• Lead the staff to develop school mission and goals</li> <li>• Lead and ensure the values of school education</li> <li>• Lead and ensure the unique mission and vision of the school</li> </ul>

## **Multi-models of Education Quality and Teacher Education**

As discussed above, teachers work not only in classrooms but also in a context of school organization. Responding to the worldwide movements of quality assurance in education, inevitably there is an urgent need to understand the complex nature of teacher performance and teacher education from a broader perspective of education quality.

According to Cheng & Tam (1997), there are seven models of education quality which researchers and practitioners often use in understanding the quality of school education. Table 2 summarizes the meanings, conditions of usefulness, and key areas of identification of these models. Each of the seven models of education quality has its own characteristics, and yet they are inherently linked to each other. School goals can reflect the expectations, needs, and specifications of school constituencies. Ensuring smooth and healthy internal school process and fruitful learning experiences (i.e. the process model) is critical to achieve the school goals and produce high quality educational outcomes. The achievement of stated school goals and conformance to given specifications (i.e. the goals and specifications model) can bring satisfaction to the school constituencies ( i.e. the satisfaction model). Also, by establishing relationship with the community, building up school image, and showing accountability, the school can achieve its legitimate position (i.e. the legitimacy model) for school survival and quality reputation. Then, by carefully monitoring its programs and checking signs of ineffectiveness, the school can ensure that no endemic problem is threatening the quality of school program (i.e. the absence of problems model). Finally, the school continues to improve and develop itself in all important aspects through learning from its errors and its environment (i.e. the organizational learning model). Then it can achieve all around education quality for students, parents and the community.

These seven models highlight different aspects of education quality. For different models of education quality, the types of teacher quality and competence for achieving education quality are often different. If teacher education aims to develop teachers to have the necessary professional quality, competence and commitment to provide education quality in school, then these models of education quality should have important implications for teacher education and development.

Each model of education quality demands teachers as well as administrators to have a specific set of knowledge, skills, behaviors, attitudes, values, and beliefs to enhance and ensure education quality. Some of these are related to the school context, some are pertained to group functioning, and some have relevancy to the individual performance. In other words, the functions of teacher education and development should serve the needs of the models of school education quality. The relationship between models of school education quality and the purpose of teacher education and development is summarized in Table 3. The implications of multi-models for teacher education are explained as follows ( Tam & Cheng, 1996):

### **Implications of The Goal and Specification Model**

This model assumes that school education quality is determined by the extent to which the stated school goals have been achieved and the given specifications have been conformed to. Therefore, teacher education and staff development should help teachers as well as education leaders:

- to understand the importance of school goals and specifications to school functioning and education quality;
- to have the competence to set clear, meaningful, long-term and short-term goals and standards for the school, work groups and individual staff to pursue;
- to communicate these goals and standards to all school constituencies and form collective forces to achieve them ;
- to have the knowledge, skills, and commitment to achieve these school goals and standards; and
- to have competence to monitor and assess whether the school, groups, and individual members have achieved stated goals or conformed to given standards or specifications.

Table 2. Models of School Education Quality

<b>Models of education quality</b>	<b>Conception of School Education Quality</b>	<b>Conditions for Model Usefulness</b>	<b>Indicators / Key Areas for Quality Evaluation (example)</b>
<b>Goal and Specification Model</b>	<ul style="list-style-type: none"> <li>• Achievement of stated school goals and conformance to given specifications</li> </ul>	<ul style="list-style-type: none"> <li>• When school goals and specifications are clear, consensual, time-bound, and measurable;</li> <li>• When resources are sufficient to achieve the goals and conform to the specifications</li> </ul>	<ul style="list-style-type: none"> <li>• School objectives, standards, and specifications listed in the school/program plans, e.g. academic achievements, attendance rate, dropout rate, etc.</li> </ul>
<b>Resource-Input Model</b>	<ul style="list-style-type: none"> <li>• Achievement of needed quality resources &amp; inputs for school</li> </ul>	<ul style="list-style-type: none"> <li>• When there is a clear relationship between school inputs and outputs;</li> <li>• When quality resources for school are scarce.</li> </ul>	<ul style="list-style-type: none"> <li>• Resources procured for school functioning, e.g. quality of student intake, facilities, financial support, etc.</li> </ul>
<b>Process Model</b>	<ul style="list-style-type: none"> <li>• Smooth internal process and fruitful learning experiences</li> </ul>	<ul style="list-style-type: none"> <li>• When there is a clear relationship between school process and educational outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership, participation, social interactions, classroom climate, learning activities and experiences, etc.</li> </ul>
<b>Satisfaction Model</b>	<ul style="list-style-type: none"> <li>• Satisfaction of all powerful school constituencies</li> </ul>	<ul style="list-style-type: none"> <li>• When the demands of the constituencies are compatible and cannot be ignored</li> </ul>	<ul style="list-style-type: none"> <li>• Satisfaction of education authorities, management board, administrators, teachers, parents, students, etc.</li> </ul>
<b>Legitimacy Model</b>	<ul style="list-style-type: none"> <li>• Achievement of School's legitimate position and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• When the survival &amp; demise among schools must be assessed</li> <li>• When the environment is very competitive and demanding</li> </ul>	<ul style="list-style-type: none"> <li>• Public relations, marketing, public image, reputation, status in the community, evidence of accountability, etc.</li> </ul>
<b>Absence of Problems Model</b>	<ul style="list-style-type: none"> <li>• Absence of problems and troubles in school</li> </ul>	<ul style="list-style-type: none"> <li>• When there is no consensual criteria of quality but strategies for school improvement are needed</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of conflicts, dysfunctions, difficulties, defects, weaknesses, troubles, etc.</li> </ul>
<b>Organizational Learning Model</b>	<ul style="list-style-type: none"> <li>• Adaptation to environmental changes &amp; internal barriers</li> <li>• Continuous improvement</li> </ul>	<ul style="list-style-type: none"> <li>• When schools are new or changing;</li> <li>• When the environmental change cannot be ignored</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness of external needs and changes, internal process monitoring, program evaluation, development planning, staff development, etc.</li> </ul>

Adapted from Cheng & Tam (1997)

### **Implications of The Resource-input Model**

This model emphasizes the importance of procuring resource-input to school education quality. It assumes that the high quality the resource-input, the high quality the school education. Therefore, teacher education aims at helping teachers:

- to recognize and understand the critical impacts of quality resource-input on the whole school functioning, educational outcomes, and education quality;
- to have the necessary competence to conduct environmental analysis and develop effective strategies to identify and attract scarce resource input to the school;
- to have sufficient knowledge and competence to use resource efficiently to achieve school goals;
- to design effective induction or orientation programs for new school members and help them become competent because they are the scarce human resources for school education quality; and
- to have social power and skills to win the support and resources from alumni, parents or the community for the school.

### **Implications of The Process Model**

This model assumes that smooth and healthy internal process and fruitful learning experiences are necessary conditions for school education quality. Inevitably, teacher education and development aim at helping teachers:

- to understand the meaning and contribution of school process to school education quality;
- to have the competence and commitment to ensure the quality of school process and learning process;
- to have the relevant knowledge and skills to design and strengthen the school's internal process which encourages participation, team work, staff collaboration, and trusting relationship;
- to improve the efficiency and effectiveness of the school operation;
- to monitor and evaluate the strengths and weaknesses of internal activities of managing, teaching, and learning; and
- to develop a positive school culture and a high quality work life for school members.

### **Implications of The Satisfaction Model**

This model emphasizes the satisfaction of powerful school constituencies as the major criterion of school education quality. Teacher education should help teachers to have competence to perform those school activities that can increase the satisfaction of school constituencies. Particularly, teacher education programs teachers:

- to identify who are the school's important constituencies and understand how these constituencies can influence school goals, inputs, processes, and outcomes;
- to identify and understand what are the major expectations and needs of powerful school constituencies;
- to have knowledge and skills to perform tasks that can meet the needs and expectations of major constituencies effectively;

- to have professional commitment and positive attitudes to serve the needs of major constituencies particularly students, parents, and the community;
- to have sufficient competence to influence the perceptions of power constituencies and win their support to the school;
- to have knowledge and skills to encourage participation of important constituencies and involve them in making decisions and developing school goals.
- to be aware of the changes in needs and expectations of different constituencies particularly students and parents and have the ability to adapt to these changes;
- to monitor and evaluate whether the school activities can satisfy the needs of major constituencies; and
- to have sufficient social skills to work with different school constituencies.

### **Implications of The Legitimacy Model**

This model assumes that achievement of school's legitimate position and reputation in the community as the critical indicator of school education quality. The assurance of school education quality is closely related to the activities of public relations, community services, marketing, promotion of school image, status, reputation, and evidence of accountability. Therefore, teacher education should inevitably have strong contribution to these activities. Specifically, it helps teachers:

- to understand the significance of community services, public relations, school image and accountability to perceptions of the public on the school education quality;
- to have positive attitudes towards promotion of school images and public relations and establishment of clear accountability system for school performance;
- to have the necessary knowledge and skills to build up school image and reputation and ensure accountability at the individual, group and the school levels;
- to be aware of the needs of the community and provide appropriate services to meet their needs;
- to foresee the environmental changes and policy changes in the community and make strategic plan to prepare these changes;
- to have competence to develop internal and external social networks to support the status of the school; and
- to maintain a good relationship with different types of bodies and organizations in the community.

### **Implications of The Absence of Problems Model**

This model emphasizes the absence of problems as the main criterion of school education quality. It is often assumed that the major role of teacher education and development to help teacher to avoid or prevent problems, defects, dysfunctions, and weaknesses in process of management, teaching and learning. Specifically, teacher education should help teachers:

- to be aware of the existing or potential problems and defects that may post as threats to school education quality;
- to have the knowledge and skills to monitor, identify, evaluate, and prevent different types of problems existing in processes of management, teaching, and learning;
- to have positive attitudes towards problem identification and solving;
- to form a constructive climate among staff for staff appraisal and program evaluation;
- to have competence to establish an effective mechanism for monitoring and evaluating performance of members at the individual level, the group level, and the school level; and
- to establish a clear reporting system that can provide systematic information for school improvement and quality control.

Table 3. Teacher Education for Multi-Models of School Education Quality.

<b>Models of Education Quality</b>	<b>Teacher Education for Teachers.....</b>
<b>Goal and Specification Model</b>	<ul style="list-style-type: none"> <li>• to understand and develop school goals and standards and have the competence and commitment to achieve them.</li> </ul>
<b>Resource-Input Model</b>	<ul style="list-style-type: none"> <li>• to recognize the importance of resources to school education quality and have the competence to procure, manage, and use scarce resource input effectively and efficiently</li> </ul>
<b>Process Model</b>	<ul style="list-style-type: none"> <li>• to understand the contribution of school process and learning experience to education quality, have the competence to improve them, and develop healthy school culture and high quality work life</li> </ul>
<b>Satisfaction Model</b>	<ul style="list-style-type: none"> <li>• to identify needs and expectations of important constituencies and have competence and commitment to satisfy them</li> </ul>
<b>Legitimacy Model</b>	<ul style="list-style-type: none"> <li>• to recognize the significance of community services, public relations, school image and accountability to perceptions of the public on school education quality and make contribution to the related activities</li> </ul>
<b>Absence of Problems Model</b>	<ul style="list-style-type: none"> <li>• to have ability to identify and avoid potential problems, defects, dysfunctions, troubles, and weaknesses in school</li> </ul>
<b>Organizational Learning Model</b>	<ul style="list-style-type: none"> <li>• to foresee and analyze environmental changes and internal difficulties and develop appropriate strategies to make continuous improvement and development</li> </ul>

Adapted from Tam & Cheng (1996)

## **Implications of The Organizational Learning Model**

Since the education environment is changing quickly and producing a great impact on school functioning, schools have to adapt to the changes and face up to challenges from the environment. The organizational learning model assumes that school's adaptation to environmental changes and internal barriers and continuous improvement are critical elements for assurance of school education quality. Therefore, teacher education should help teachers:

- to be aware of environmental changes, society developments, policy trends, and community needs;
- to have techniques to collect relevant information and perform the SWOT (strengths, weaknesses, opportunities, and threats) analysis of school's situation;
- to have the competence to plan actions for school development and educational improvement according to the results of environmental analysis;
- to create opportunities and school climate for learning from each other among staff;
- to reflect on the strengths and weaknesses of existing beliefs, values, attitudes, and practices shared at the individual level, group level, and the school level;
- to identify the gaps between espoused theory and theory-in-action and change school operations or governing values of individuals and groups of staff (Arygris & Schon, 1974, 1978); and
- to establish monitoring and evaluation system at different levels to provide feedback information for improvement and development of individuals, groups, and the whole school.

To a great extent, different models of education quality need different teacher quality, competence, and performance and correspondingly different aims and content of teacher education and development. Traditionally, teacher training programs often emphasize subject content knowledge, learning theories, and pedagogical techniques as the most important components for ensuring quality of school process. Yet, from the perspective of multi-models of education quality, there are so many important and necessary areas in teacher education that have been ignored if education quality has to be pursued and ensured. Of course, it is impossible to prepare a teacher, particularly a new teacher in a short time to be ready in providing all aspects of education quality. It seems to be *a life long process for teacher education and development to meet the needs of multi-models on teacher quality and competence* because the education environment is changing so quickly and schools as well as teachers at different stages of life cycle may have different needs in development (Cheng, 2001). Generally, in order to pursue total education quality in the seven models, the needs and characteristics of multi-models should be taken into consideration in designing teacher education and development.

## **Multiple School Functions and Teacher Education**

In the new century, schools have different functions such as technical-economic, human-social, political, cultural, and educational at individual, institutional, community, society, and international levels as shown in Table 4 (Cheng, 1996a). To a great extent, teacher effectiveness and education quality should be intimately linked with the achievement of these school functions. If teachers can help their schools to perform and achieve these school functions, they can be perceived as effective and their quality as high. Therefore the development of teacher education and development programs should aim at enhancing teacher effectiveness to achieve these school functions ( Cheng & Walker, 1997; Cheng, 1998).

### **Implications from Technical-economic Functions**

Technical-economic functions refer to a school's contribution to the technical or economic developments and needs at each of the five levels. At the individual level, teachers help students acquire the knowledge and skills necessary to survive and compete in a modern society. At the institutional level, schools provide quality service for clients, employers and others connected with the organization. At community and societal levels, schools aid the economic and instrumental needs of their local community and economy, modify or shape economic behaviors and contribute to the development and stability of the broader society. These then feed the international level through teachers and schools providing economically, technologically and environmentally sensitive adults to the constantly shrinking world community. Teacher education programs should be relevant to the development of technical-economic school functions. Through these programs teachers can further understand the economic and technical functions of school education and develop sufficient competence to help perform these functions.

### **Implications from Human-social Functions**

Human-social functions refer to the contribution of schools to human development and social relationships at different levels of the society. At the individual level, teachers help students to develop as fully as possible psychologically, socially and physically. At the institutional level, teachers help invent and reinforce the quality human relationships which frame organizational behavior. From a Functionalist perspective, teachers serve certain social functions in their local community. These functions include social integration of diverse constituencies, facilitation of social mobility within existing class structures and reinforcement of social equality. From the alternative viewpoint of Conflict Theory, teachers reproduce the existing social class structure and perpetuate social inequality (Cheng, 1995a; Blackledge & Hunt, 1985). Due to the growing global consciousness (Beare & Slaughter, 1993), teachers need to prepare students for international harmony, social co-operation, global human relationships, and work toward the elimination of national, regional, racial, and gender biases at the international level. As a whole, a new set of knowledge about the human-social school functions at multi-levels is needed to develop teacher education programs that can help teachers to understand the nature and significance of human development and how cater for this in schools.

### **Implications from Political Functions**

Political functions refer to the contribution of schools to the political developments at different levels of society. At the individual level, teachers help students to develop positive civic attitudes and skills and to exercise the rights and responsibilities of citizenship. At the institutional level, teachers support their schools to act as places for encouraging critical discussion of political issues. At the community and societal levels, schools and teachers play an important role in promoting awareness of democracy and facilitating political developments and changes. The growing awareness of international dependence reinforces the need for school education to contribute to international understanding and elimination of international conflict. In areas such as these, few teachers possess the appropriate knowledge, attitudes or competence to help their schools to perform the political functions. This appears particularly true in the rapidly developing political environment of Hong Kong or other Asia-Pacific areas. Teacher education, therefore, may be one important way to empower teachers to face this challenge from the political developments.

## **Implications from Cultural Functions**

Cultural functions refer to the contribution of schools to the cultural transmission and development at different levels of society. Teacher education and development programs can provide opportunities for teachers to understand and reflect on these cultural functions and build the skills necessary for their transmission. At the individual level, teachers help students to develop creativity and aesthetic awareness, and to become familiar with the dominant values underpinning their society. At an institutional level, teachers and schools act as agents for systematic cultural transmission, cultural integration among their multiple and diverse constituencies, and cultural re-vitalization. At the community and society levels, schools often serve as a cultural unit carrying the explicit norms and expectations of the local community. Again, Conflict Theory provides an alternative view. It suggests that schools and teachers socialize students from different levels of society with different sets of values and beliefs and, in the process, benefit some groups more than others. At the international level, schools and teachers can encourage appreciation of cultural diversity and acceptance of different norms, traditions, values, and beliefs in different countries and regions.

## **Implications from Education Functions**

Education functions of schools refer to the contribution of schools to the development and maintenance of education at different levels. Traditionally, education has been perceived as a means for achieving the economic, social, political, and cultural values only. Rapid and widespread change, however, has prompted now an acceptance that education in and of itself is a crucial goal. The content, system, and structure of education, then, need to be developed and maintained. At the individual level, teachers help students to learn how to learn, and colleagues to learn how to teach. At the institutional level, teachers work together to improve learning and teaching through mutual support and shared innovation. At the community and society levels, teachers provide service for different educational needs within their communities, facilitate developments of education as a profession, disseminate knowledge and information to the next generation, and contribute to the formation of a learning society. In order to encourage mutual understanding among nations, teachers can contribute to the development of global education and international education exchange and co-operation. Teacher education is an important means not only for teachers to learn and develop themselves, but also to understand this increasingly recognized need in school's education functions at multi-levels.

As a whole, the knowledge of above functions and accompanying levels is crucial for teacher education and development on two interrelated fronts. First, they provide a frame for teacher educators to understand and operationalize teacher education programs. And, second, the framework is useful for increased theoretical understanding of teacher education and development and may form the basis for research in this important area. Clearly, as the functions of schools become more complex, administrators and teachers need to be better prepared to face their changing roles. At present, it is unlikely that teachers have the appropriate knowledge, attitude, commitment and competence to support the multiple functions in their schools and carry out tasks effectively. Therefore, strengthening the relevance of teacher education and development to the changes in the school's role and of the multiplicity of her functions in the new century should be an important direction for educational reforms.

## CONCLUSION

The framework of total teacher effectiveness in school expects teachers effectiveness not only at the individual level but also at the group and whole school levels; not only in the behavioral domain but also in the affective and cognitive domain. The multiple models of education quality have different sets of internal and external criteria for quality that require different sets of teacher competence and knowledge to achieve them and ensure education quality. The pursuit of multiple school functions in the new century such as technical, human, political, cultural and educational functions at different levels demands different teacher roles and performance. All these new conceptions and expectations related to teacher effectiveness inevitably generates new paradigms and implications for teacher educators and policy makers to reconceptualize and redesign the policy and practice of teacher education and development. If teachers are expected to be effective in such a complex and changing environment, the aims, content, process, methodology, as well as the culture of teacher education should be changed towards a new paradigm, particularly there is an urgent need to have globalization, localization and individualization in education for the new century (Cheng, 2000).

Within the constraints of time framework and resources, it is unrealistic to expect teachers to be prepared totally effective in terms of performance in the affective, cognitive, and behavioral domains at all individual, group and school levels; or in terms of contribution to the seven models of education quality or the five school functions at different levels, through certain one off pre-service or in-service training. But, from the new conceptions of teacher effectiveness, we can identify the missing areas and linkages in our existing frameworks and programs of teacher education and development and redesign them. Also, it is clear that teacher education and development should be a life-long self learning process during which teachers can learn to become totally effective in a rapidly changing new century (Cheng, 2001).

Table 4. Implications from Multiple School Functions at Multi-levels

	<b>Technical-Economic Functions</b>	<b>Human-Social Functions</b>	<b>Political Functions</b>	<b>Cultural Functions</b>	<b>Educational Functions</b>
Individual	<ul style="list-style-type: none"> <li>• Knowledge &amp; skills training</li> <li>• Career training</li> </ul>	<ul style="list-style-type: none"> <li>• Psychological developments</li> <li>• Social developments</li> <li>• Potential developments</li> </ul>	<ul style="list-style-type: none"> <li>• Development of civic attitudes and skills</li> </ul>	<ul style="list-style-type: none"> <li>• Acculturation</li> <li>• Socialization with values, norms, &amp; beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Learning how to learn &amp; develop</li> <li>• Learning how to teach &amp; help</li> <li>• Professional development</li> </ul>
Institutional	<ul style="list-style-type: none"> <li>• As a life place</li> <li>• As a work place</li> <li>• As a service organization</li> </ul>	<ul style="list-style-type: none"> <li>• As a social entity/system</li> <li>• As a human relationship</li> </ul>	<ul style="list-style-type: none"> <li>• As a place for political socialization</li> <li>• As a political coalition</li> <li>• As a place for political discourse or criticism</li> </ul>	<ul style="list-style-type: none"> <li>• As a centre for cultural transmission &amp; reproduction</li> <li>• As a place for cultural re-vitalization &amp; integration</li> </ul>	<ul style="list-style-type: none"> <li>• As a place for learning &amp; teaching</li> <li>• As a centre for disseminating knowledge</li> <li>• As a centre for educational changes &amp; developments</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Serving the economic or instrumental needs of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Serving the social needs of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Serving the political needs of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Serving the cultural needs of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Serving the educational needs of the community</li> </ul>
Society	<ul style="list-style-type: none"> <li>• Provision of quality labor forces</li> <li>• Modification of economic behavior</li> <li>• Contribution to the manpower structure</li> </ul>	<ul style="list-style-type: none"> <li>• Social integration</li> <li>• Social mobility/ social class perpetuation</li> <li>• Social equality</li> <li>• Selection &amp; allocation of human resources</li> <li>• Social development &amp; change</li> </ul>	<ul style="list-style-type: none"> <li>• Political legitimization</li> <li>• Political structure maintenance &amp; continuity</li> <li>• Democracy promotion</li> <li>• Facilitating political developments &amp; reforms</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural integration &amp; continuity</li> <li>• Cultural reproduction</li> <li>• Production of cultural capital</li> <li>• Cultural revitalization</li> </ul>	<ul style="list-style-type: none"> <li>• Development of the education professions</li> <li>• Development of education structures</li> <li>• Dissemination of knowledge &amp; information</li> <li>• Learning society</li> </ul>
International	<ul style="list-style-type: none"> <li>• International competition</li> <li>• Economic co-operation</li> <li>• International trade</li> <li>• Technology exchange</li> <li>• Earth protection</li> <li>• Sharing information</li> </ul>	<ul style="list-style-type: none"> <li>• Global village</li> <li>• International friendship</li> <li>• Social co-operation</li> <li>• International exchanges</li> <li>• Elimination of national /regional /racial /gender biases</li> </ul>	<ul style="list-style-type: none"> <li>• International coalition</li> <li>• International understanding</li> <li>• Peace/ against war</li> <li>• Common interests</li> <li>• Elimination of conflicts</li> </ul>	<ul style="list-style-type: none"> <li>• Appreciation of cultural diversity</li> <li>• Cultural acceptance across countries/regions</li> <li>• Development of global culture</li> </ul>	<ul style="list-style-type: none"> <li>• Development of global education</li> <li>• International education exchanges &amp; co-operation</li> <li>• Education for the whole world</li> </ul>

Adopted from Cheng (1996a)

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