Total teacher effectiveness: new conception and improvement

Yin Cheong Cheng
Centre for Research and Development, The Hong Kong Institute of Education, Hong Kong
Kwok Tung Tsui
Centre for Research and Development, The Hong Kong Institute of Education, Hong Kong

Teacher effectiveness is often a major issue in current movements of education reform and school improvement. No matter which wave of reform we are riding on, it is generally agreed that the teacher is the key element for the success of school education[1-3]. Traditional studies on teacher effectiveness focus largely on the performance of individual teachers in classrooms. This narrow conception of teacher effectiveness has its limitations and can no longer meet the needs of changing school environments, particularly when parents and the public are demanding high quality in school education.

In the last two decades, in order to improve the performance of teachers, policy-makers, teacher training institutions and schools have designed and implemented a great number of innovations in teaching techniques, methodologies and supervision. In Hong Kong, although a huge amount of resources had been invested into educational reforms initiated by a number of educational policies in the past decade[4], the performance of students as a whole was declining at a significant rate. The performance of students as a whole was declining at a significant rate. The performance of students as a whole was declining at a significant rate.

The policy-makers and the public began to be aware of the importance of teacher performance students’ educational outcomes and tried to make policy efforts for improving teacher quality and effectiveness[3]. Inevitably, there is an urgent need to understand the complex nature of teacher effectiveness and to develop new strategies to improve it if we wish to achieve better student learning outcomes. Therefore, this paper aims to establish a framework for understanding the nature and development of teacher effectiveness.

This paper will first review and identify the strategies and their limitations for improving teacher effectiveness that are based on traditional concepts. Then it will develop a framework of total teacher effectiveness, for understanding the process and development of teacher effectiveness, including multi-levels and multi-domains, to understand the complex nature of teacher effectiveness in school organization. It is hoped that this framework can bring a holistic approach to studying and improving teacher effectiveness.

Traditional concepts of teacher effectiveness

In recent decades, the topic of teacher effectiveness has continued to attract the attention of researchers, educators and professional organizations. However, Ornstein[5] points out that the literature on teaching effectiveness, or teacher effectiveness, is a morass of ill-defined and changing concepts. To different people, the definition of teacher effectiveness could be very different. Approaches to presenting this concept are also very different. Some researchers focus on teacher personalities, traits, behaviours, attitudes, values, abilities, competences and many other personal characteristics. Some other researchers are more concerned with the teaching process (including factors such as teaching styles, teacher-student interactions and classroom climate, etc.) or the teaching outcomes (including factors such as students’ academic achievements, personal development and learning experiences, etc.).

Despite thousands of studies conducted in the last 50 years, it is difficult, if not impossible, to arrive at generally accepted conclusions. Few powerful generalizations concerning teacher effectiveness have been established[6,7]. In different times during the past decades, the studies might emphasize different aspects of teacher effectiveness[8,9]. Some scholars have given criticisms on the underlying philosophy, methodologies and findings in these studies of teacher effectiveness. They suggested that the existing perspectives of teacher effectiveness, such as the teacher trait perspective, the teacher behaviour perspective and the process-product of teaching perspective could not be successful in explaining or analysing the complexity of teacher effectiveness[8,10].

Some key traditional concepts of teacher effectiveness can be summarized and discussed before strategies for improving teacher effectiveness are reviewed. As suggested by Anderson[11], effective teachers are those who achieve the goals they set by themselves or the goals set for them by others such as school principles, education administrators and parents. According to Ornstein[5], effective teachers must have a
body of knowledge essential for teaching, and know how to apply it. By integrating these two conceptions, effective teachers may be assumed to be those who possess the relevant competence (including necessary professional knowledge, skills and attitudes) and use the competence appropriately to achieve their set goals. From this line of thinking, the understanding of teacher effectiveness must be based on the linkages between teacher competence, teacher performance and set goals or expected educational outcomes.

**Structure of teacher effectiveness**

Medley’s structure of teacher effectiveness is a very comprehensive framework which can integrate the teacher trait perspective, the teacher behaviour perspective and the process-product of teaching perspective to explain the relationships between teacher competence, teacher performance, student learning experience and educational outcomes. He explained that:

The term “teacher effectiveness” will be used to refer to the results a teacher gets or to the amount of progress the pupils make toward some specified goals of education. One implication of this definition is that teacher effectiveness must be defined, and can only be assessed, in terms of behaviours of pupils, not behaviours of teachers. For this reason, and because the amount that pupils learn is strongly affected by factors not under the teacher’s control, teacher effectiveness will be regarded not as a stable characteristic of the teacher as an individual but as a product of the interaction between certain teacher characteristics and other factors that vary according to the situation in which the teacher works...

According to this conception, Medley proposed that the structure of teacher effectiveness should include nine important components:

1. Pre-existing teacher characteristics – the knowledge, abilities and beliefs that a teacher possesses on entering into the teacher training programme).
2. Teacher competence – the set of knowledge, abilities and beliefs that a teacher possesses and brings to the actual teaching environment on completion of the teacher training programme.
3. Teacher performance – the behaviour of a teacher when teaching that may change when the teaching environment is changed.
4. Student learning experience – the experience from interactions between teacher and the students in the process of teaching and learning.
5. Student behaviour or learning outcomes – the progress students make towards a defined educational goal.
7. External teaching context – including school organizational structure, management, culture, teaching facilities, resources, curriculum, school goal and mission, etc.
8. Internal teaching context – including class size and composition, pupil abilities, classroom climate, teacher-pupil relationship, etc.
9. Individual student characteristics – individual students' previous learning experience, physical and intellectual abilities, learning styles and other personal characteristics.

Cheng further developed Medley’s structure by the inclusion of two more components, namely teacher evaluation and professional development, as shown in Figure 1. The structure indicates the procedural interrelationships among the components of teacher effectiveness:

1. Student learning outcomes are the product of the interaction between students’ learning experience and individual characteristics.
2. Student learning experience is affected by both teacher performance and internal teaching context.
3. Teacher performance is determined by the interaction between teacher competence and external teaching context.
4. Teacher training and pre-existing teacher characteristics can contribute to teacher competence.
5. Teacher evaluation activities that are based on the information from teacher performance, student learning experience and learning outcomes can facilitate the development of teacher competence.
6. Professional development activities which are supported by the characteristics of external and internal teaching context, teacher performance, students' individual characteristics, learning experience and outcomes can contribute to development of teacher competence and teacher education.

All the components of the structure can directly or indirectly relate to teacher effectiveness.
Strategies for improving teacher effectiveness

From the above structure of teacher effectiveness, Cheng [13] suggested there may be three different strategies which can be used to improve or enhance teacher effectiveness: the short-term strategy, the long-term strategy and the dynamic strategy.

The short-term strategy

The short-term strategy is the traditional and most commonly-used strategy for improving teacher effectiveness. It focuses on changing overt teacher performance (mainly in terms of teaching behaviours) to adapt to the teaching context. Short-term training or piecemeal practical advice are used to correct teachers’ weaknesses and undesirable behaviours. The strategy is based on three assumptions. First, teaching context is something “given” and not alterable. In order to achieve a good quality of student learning outcomes, teachers must accommodate or adjust their behaviours to the internal teaching context. Second, teacher behaviour in classrooms must be corrected or changed if unsatisfactory student learning experience and outcome are identified. Third, some straightforward prescriptions such as standard teaching behaviours and methods could readily be used by all teachers: curriculum planners and teacher trainers often develop and introduce a great number of standard teaching behaviours to schoolteachers. School inspectors and administrators give practical advice on teaching behaviours to teachers during school inspections and teacher assessment. This strategy assumes that the teacher is an implementer, subject to being improved for better educational outcome and, inevitably, the role of teacher is very passive and externally managed. To a certain extent, some fragmentary, superficial and tangible effects may be achieved by correcting certain teacher behaviours in the classroom. However, the effects often cannot be internalized and the usefulness of this traditional strategy is quite limited. It may not successfully induce any long-term and systematic improvement in teacher effectiveness because it ignores the importance of teacher competence to teacher performance in the classroom. Without development in teacher competence, persistent and effective change in teaching behaviour is almost impossible.

The long-term strategy

The long-term strategy focuses on strengthening teacher competence so that teachers can have sufficient professional knowledge, techniques and confidence to develop their own teaching styles, adapt to the external and internal teaching contexts and perform effectively in the classroom. Strengthening teacher competence is a continuous long-term process involving systematic learning and reflection. As shown in Figure 1, establishment of the teacher evaluation system and the professional development system is necessary for developing teacher competence and building up long-term teacher effectiveness. Through summative, formative and
diagnostic teacher evaluation, teachers may learn continuously and develop repertoires of professional competence which can be used to adapt to different teaching contexts and carry out teaching tasks effectively[14]. Through systematic professional development teachers can grow and develop to acquire new knowledge, skills and attitudes which in turn promote or improve their teaching performance at different stages of their careers. Obviously, this strategy is much better than the short-term strategy because it may have long-term, systematic and internalized effects on teachers’ competence and performance. But the strategy still has limitations. Similar to the short-term strategy, it assumes that the external and internal contexts of teaching are “givens” and static. Teachers are considered as developing implementers, and they need to adapt their teaching behaviours to teaching contexts. To some extent, the role of the teacher is passive and moderately externally managed. Therefore, this strategy does not expect the active role of teachers in changing the internal and external contexts of teaching and creating an improved environment for teaching and learning. In other words, teacher effectiveness may not be maximized.

The dynamic strategy
In view of the limitations of short-term and long-term strategies, a dynamic strategy can be proposed for improving teacher effectiveness. It assumes that most of the components associated with the structure of teacher effectiveness (Figure 1) can be altered. In order to maximize teacher effectiveness, both teachers’ competence and performance and teaching contexts should be changed. Also, teachers should not only adapt to the teaching contexts but also adopt the role of change agent. Therefore, this strategy aims at empowering teachers as change agents, educational leaders and professional implementers, such that they can play an active role in improving both external and internal teaching contexts and maximizing their effectiveness at both organizational level and classroom level. The activities of professional development and teacher evaluation should be further developed and strengthened to help teachers to develop not only knowledge, skills and attitudes but also critical minds and self-reflection and self-management skills[15]. Following this line of thinking, the concept of teacher effectiveness should not be confined to teacher behaviour or performance in the classroom. It should be extended to incorporate organizational aspects such as teacher involvement and leadership in curriculum changes and education reforms. In other words, improving teacher effectiveness should be a long-term and dynamic process involving not only teachers’ professional growth and also schools’ continuous change and development. The effects of this strategy on teachers and schools are long-term, systematic and can be internalized and institutionalized.

Based on the above discussions, the characteristics of the short-term, long-term and dynamic strategies are summarized in Table I. Of the three, the dynamic strategy appears to be preferable.

Limitations of the traditional concepts and strategies
Since all the above strategies are based on the traditional concepts of teacher effectiveness, with the focus primarily on individual teachers, particularly in a classroom context, inevitably there is a serious conceptual barrier limiting the effectiveness of these strategies, even the dynamic strategy. Traditionally, the teaching process is often assumed to happen only at the individual level. That is, individual teachers perform teaching and individual students receive teachers’ instruction and learn. This simplistic approach is reflected in most studies on teacher effectiveness, which examine teacher effectiveness mainly at an individual level. However, this narrow conception of teacher effectiveness is changing, owing to the induction of broader concepts of educational processes[16,17]. First, school education is usually planned and implemented at the programme level or the whole school level. Currently, school management reforms and effective school movements emphasize the whole school approach to the improvement of school performance and student learning outcomes[18-20]. It assumes that students are 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 paid to overall teacher effectiveness at group and school levels. Second, based on our previous discussion, a successful teacher effectiveness programme relies on a staff development programme which brings about not only individual teacher development but also group and school development[21]. Therefore, teacher effectiveness should not be studied solely at the individual level but also at the group, programme and school levels. Obviously, the strategies based on the traditional concept at the individual level have limitations and are not sufficient to enhance teacher effectiveness at the group and school levels.
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<td>Develop teacher competence so that teacher can improve teaching contexts and maximize effectiveness</td>
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<td>Assumption about teaching context</td>
<td>External and internal context are “givens” and static</td>
<td>External and internal context are “givens” and static</td>
<td>External and internal contexts are alterable and dynamic</td>
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<td>Design</td>
<td>Discrete, piecemeal</td>
<td>Systematic, long-term planning</td>
<td>Systematic and dynamic, long-term planning</td>
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<td>Means</td>
<td>Provide short-term training or piecemeal practical advice</td>
<td>Establish teacher evaluation system</td>
<td>Develop teacher evaluation system</td>
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<td>Implementation</td>
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<td>Ends</td>
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<td>Facilitate teacher to change and adapt to external and internal</td>
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<td>Passive, to adapt to teaching context</td>
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teacher effectiveness at the group and school levels.

**Conceptual framework of total teacher effectiveness**

Taking the limitations of the traditional concepts into consideration, a new conceptual framework of total teacher effectiveness can be proposed, as follows.

**Levels of teacher effectiveness**

Traditional teacher effectiveness improvement programmes focus on individual teacher performance in a classroom. Principals and administrators try to manipulate individual teachers' competence and performance in an attempt to improve students' behavioural outcomes. It is assumed that when individual teacher performance is improved, individual students, then the whole class and, finally, all students in the school will have a corresponding improvement in learning outcomes. In reality, the situation is much more complicated. First, the Coleman study may be used as an illustration. The study findings had been interpreted as proof that schools had little effect on student learning, although according to Barr and Dreeben[22] it was misinterpreted. However, it demonstrates that when teachers, school and student characteristics were all aggregated to the school level (or class level), the individual teacher effectiveness or contribution would be diminished and deteriorated.

Good et al.[23] argue that: "If teachers make a difference, and if pupils are to be exposed to both good and poor teaching, then it should not be surprising that many schools (classes) are found to be quite similar in their effects on students". Obviously, the improvement of individual teachers does not necessarily promise overall school effectiveness. Second, teachers often work in isolated conditions where they seldom see or hear one another teach[14,24]. This isolation and privacy will hinder teachers' learning and sharing of their successes with colleagues. Owing to these constraints, individual teachers must work alone to identify problems, develop solutions and choose alternatives[25-27].

Further more, as school settings become more complex and demand greater accountability, individual teachers' efforts have less impact. On the contrary, in order to increase teacher and school effectiveness, a group effort is required[28]. It is believed that the synergy of a group is potentially greater than the sum of the energies of its members. In other words, a group effort would produce greater effect than the group's most competent members could have achieved alone. In fact, teachers who work as teams or groups not only use their energy effectively but also create new energy[29,30]. It is obvious that when teachers act together they may have a better chance of influencing and changing 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**

Medley[12] suggests that teacher competence refers to the set of knowledge, abilities and beliefs a teacher possesses and that teacher performance is the use of knowledge and skill in the classroom. Ornstein[5] claims that every teacher has his/her own teaching style, which is a composite of personality and philosophy, evident by behaviour and attitude. Rubin[31] argues that teaching style involves choices among alternatives, and the choices teachers make actually demonstrate their perceived images and roles. Through their style, teachers integrate the theories or pedagogy in which they believe and the practices they adopt in the classroom. From the literature, it is clear that teacher competence and performance should involve the elements of beliefs, values, perceptions, attitudes, knowledge, skills and behaviours. Furthermore, teachers' teaching processes influence students' learning experience and outcomes; and student learning outcomes are usually recognized as the result of learning processes in terms of cognitive, affective and behavioural change and development. Following this line of thinking, we may assume that the consideration of teacher effectiveness should include the quality of teacher competence and teacher performance in various domains such as the behavioural, the affective and the cognitive; and this teacher quality may have effects on students in various domains accordingly.

The concept of total teacher effectiveness

Taking the three domains (affective, behavioural and cognitive) 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. Borrowing Cheng's[16] idea of the school process matrix, we can propose a new conceptual framework of total teacher effectiveness for investigating the complicated nature of teacher effectiveness. This framework is illustrated as shown in Figure 2.

The framework assumes that teacher effectiveness is inevitably related to teachers'
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Teaching processes and students’ learning processes. Therefore, the concept of 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 occur in the behavioural, affective and cognitive domains of different actors at different levels. Specifically, teacher effectiveness should involve the behavioural, affective and cognitive performance of all teachers and students at individual, group and school levels. This concept of teacher effectiveness is different from the traditional thinking, which focuses mainly on the individual level of teacher or student and ignores the multiplicity of performances of teachers and students. The new concept can be called total teacher effectiveness because it can provide a holistic picture of the nature of teacher effectiveness by taking into consideration multi-domains of competence and performance of teachers and students at the multi-levels. The characteristics of this total teacher effectiveness framework are further illustrated in the following sections.

Layers of teacher effectiveness

As shown in Figure 2, teacher effectiveness is related to the teaching and learning processes involving teacher competence, teacher performance, student experience and student learning outcome layers. The teacher competence layer is the total behavioural, 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 dynamic quality of teachers in the teaching process. In general, the quality of teacher performance layer is positively associated with the quality of the teacher competence layer. In addition, the relationship between these two layers can be moderated by the influence of the 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. 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 the teacher performance layer as a whole has a positive impact on the quality of the student learning experience layer, and the latter has a positive relationship with the quality of the 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.).

Teacher competence layer

The teacher competence layer, interacting with the external teaching context, affects the teacher performance layer. When teachers work independently as individuals, the external teaching context may often dominate the
performance of individual teachers. Individual teachers may have to adapt to the environment in order to achieve a certain level of teaching performance. In this respect, the role of teachers tends to be passive and teacher effectiveness is limited. It is not surprising that most improvement and enrichment programmes implemented to improve some behavioural aspects of individual teacher performance are often not successful, if not failures[21]. Therefore, we suggest that the teacher competence layer should be improved (including competence in multi-domains at multi-levels) so that teachers can be empowered to work collaboratively, as a group or as a whole school team. In these circumstances, teachers can act as a strong collective force to influence and change the conditions of the external teaching context, not just adapt to it. The higher quality of teacher competence layer can promise better opportunities for teachers to act as a change agent and initiate education reforms which, in turn, promote overall teacher performance and student learning outcomes.

Teacher performance layer
The teacher performance layer, interacting with the internal teaching context, influences the student learning experience layer. Currently, the most common approach to improving the quality of students’ learning experience and outcomes is to improve and change the behaviours of a certain teacher at a certain point in or period of time. This approach is often ineffective. There are two reasons for this. First, student performance at any point in time is the cumulative effect of the performance of a number of teachers. Let us take a local secondary school as an example. There are about ten to 12 subject teachers teaching the same class at secondary one, another ten to 12 subject teachers at secondary two, and some more teachers at the remaining years. It is clear that individual student performance at any point in time should be a cumulative effect of his or her past and present teachers; and should not be the sole effect of any particular teacher. Therefore, if we want to improve students’ learning experience, we should improve the whole teacher performance layer, including the three levels and the three domains. Second, in a normal teaching environment, teaching and learning processes take place in the classroom. This means that, most of the time, the teacher will teach a group of students as a whole. If we take the teacher-student ratio into consideration, we can see that an individual teacher’s influence on individual students may not be as strong as when compared with the influence from the internal teaching context (e.g. students’ peer groups, classroom climate, class size, etc.). In order to have a stronger influence on the internal teaching context and the student learning experience layer, the improvement of the whole teacher performance layer, not just individual teachers, should be important.

In short, when teacher performance as a whole layer can act on the students at the same time and in the same direction, there will be a greater chance to develop a greater learning environment and have better student learning experiences and outcomes.

Student experience layer and student learning outcomes layer
Under the influence of the teacher performance layer and internal teaching context, all students at individual, group and school levels can achieve learning experience in their affective, behavioural and cognitive domains. Through students’ further learning processes, the learning experience can be converted into student learning outcomes in multi-domains at multi-levels. The student learning outcomes layer in Figure 2 represents the total student learning outcomes. Obviously, the pre-existing student characteristics (e.g. IQ, family background, etc.) may also affect the conversion process of learning experience into learning outcomes and the quality of outcomes. The assessment of total teacher effectiveness is based mainly on the quality of the student learning experience layer and the student learning outcomes layer, taking the teacher competence layer and teacher performance layer into consideration. The results of assessment can be used to improve the learning experience layer, the teacher performance layer and the teacher competence layer. In other words, there should be feedback loops from the latter layers to the former; the student learning outcomes layer to the student learning experience layer to the teacher performance layer to teacher competence layer, as shown in Figure 2.

A holistic approach to improving teacher effectiveness

The above framework of total teacher effectiveness provides a holistic approach to improving teacher effectiveness. In order to maximize teacher effectiveness, improvement of whole teacher competence layer and whole teacher performance layer should replace fragmentary improvement of teacher competence or performance. In other words, the improvement effort on teacher competence and performance should cover the
affective, behavioural and cognitive domains at the individual, group and school levels.

According to the concept of congruence in system[17,32,33], whether teacher competence is congruent across the affective, behavioural 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 greater the congruence of teacher competence across domains and across levels, the greater the contribution of the teacher competence layer to the teacher performance layer. The congruence across domains represents the extent to which affective competence, behavioural 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 are mutually supported and reinforced in contributing to teachers’ actions and performance. Similarly, the greater the congruence of teacher performance across domains and across levels (i.e. congruence within the teacher performance layer), the greater the contribution of the teacher performance layer to the student learning experience layer. Also, the greater the congruence of student learning experience across domains and across levels (i.e. congruence within the student learning outcomes layer), the greater the contribution of the student learning experience layer to the student learning outcomes layer.

Based on the concept of congruence within layers, the approach to improving teacher effectiveness should include assurance of congruence within the teacher competence layer, within the teacher performance layer and within the student learning experience layer. This holistic approach is very different from the traditional thinking which focuses only on fragmentary and overt aspects of teacher performance without taking totality and congruence into consideration.

**Teacher effectiveness development cycle**

According to Cheng[17,20] and Cheng and Tam[21], the development cycle can be used to strengthen the quality of teacher layers and ensure congruence within teacher layers. Specifically, a long-term programme of staff (teacher) development may be established at the individual, group and school levels to facilitate their reflection on the congruence between the values and beliefs of education and management in school and the congruence of performance in their affective, behavioural or technical, and cognitive domains. The development programme supports them to make a continuous learning cycle for their own development and improvement. This is in line with the literature in the field of teacher development and school changes[24,34-37].

The development cycle may start at the 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 the meanings of education and school management. From the reflection by themselves or among themselves, they can reorganize their cognitive structure, reshape 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 co-operate and more capable of achieving better teaching performance[35,38]. A substantial literature supports the idea 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 and sense of achievement[14,24,39-41]. Therefore, the development cycle should include a strong component on the affective and cognitive domains in addition to the behavioural or technical component for teachers at multiple levels.

Similarly, at the student learning experience layer, teachers can help to establish continuous student development cycles at the individual, group and school levels across the behaviour, affective and cognitive domains that help students to learn, experience, reflect and develop to achieve maximum learning outcomes. Obviously, the student learning experience layer is driven by the teacher performance layer. Development of teacher layers will result in desirable development in student learning experience and end up with desirable student learning outcomes.

**Conclusion**

Based on the traditional concept of teacher effectiveness, there are three strategies for improving teacher effectiveness: the short-term strategy, the long-term strategy and the dynamic strategy. Comparatively, the dynamic strategy is preferable but all of them have limitations because these strategies...
ignore the complexity of teacher effectiveness and narrow the conception of the individual teacher, particularly in a classroom context.

The conceptual framework of total teacher effectiveness provides a new perspective for investigating the process and development of teacher effectiveness. This framework suggests that the process and effect of teaching and learning should be represented by layers, including the behavioural, affective and cognitive domains of different actors (teacher and student) at different levels (individual, group and school). There are four layers: the teacher competence layer, the teacher performance layer, the student learning experience layer and the student learning outcomes layer. The layer concept provides a more comprehensive unit to consider the complexity of teacher effectiveness.

The total quality of the teacher competence layer contributes to the total quality of the teacher performance layer, and the latter contributes to the total quality of the student learning experience layer and then to the quality of the student learning outcomes layer. The framework suggests a holistic approach to improving teacher effectiveness, with emphasis on the improvement of whole layers of teacher competence and performance instead of fragmentary improvement of teacher behaviour. In order to ensure total layer quality and maximize teacher effectiveness, congruence assurance across domains and across levels within the teacher competence layer, the teacher performance layer and the student learning experience layer are important. The teacher effectiveness development cycle established within the teacher layers should be necessary to ensure congruence and pursue total teacher effectiveness.

Since the conception of teacher effectiveness is different from traditional thinking, the implications and strategies advanced for research may be more comprehensive and sophisticated, taking multi-domains and multi-levels into consideration. Some new and significant research areas and topics can be proposed for studying total teacher effectiveness, including:

• the relationship of the external teaching context and the teacher competence layer to the teacher performance layer;
• the relationship of the internal teaching context and the teacher performance layer to the student learning experience layer;
• the relationship of the student learning experience layer and pre-existing student characteristics to the student learning outcomes layer;
• the congruence within the teacher competence layer and its impacts on the teacher performance layer;
• the congruence within the teacher performance layer and its impacts on the student learning experience layer;
• the congruence within the student learning experience layer and its impacts on the student learning outcomes layer;
• the contribution of the development cycle to the total quality of teacher layers and student layers; and
• the further theoretical development of total teacher effectiveness, based on the research on the above areas.

Hopefully, the proposed conceptual framework can provide a new direction for studying and improving teacher effectiveness in particular and school effectiveness in general. The ongoing worldwide educational reforms can benefit from the research and practice of this new framework.

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