

*Full Length Research Paper*

# The Teachers' Perspective on Teacher Professional Development Evaluation

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This study constructs indicators and weights that can be used in the professional development evaluation (PDE) of elementary school teachers. The indicators were constructed using data collected from literature reviews, interviews with experts, and questionnaire surveys. The Fuzzy Analytic Hierarchy Process (FAHP) was used to analyze the collected data. The survey subjects were school principals, administrative directors, and teachers who were part of the teacher professional development evaluation (PDE) trials that have been started in Taiwan since 2005. They were selected as seed lecturers of teacher PDE in 2008 by the Ministry of Education. Therefore, purposive sampling was adopted, which yielded 24 (86%) valid questionnaires from a total of 36 questionnaires. The final results indicate three hierarchies for teacher PDE, which include 4 evaluation perspectives in the first level, 11 evaluation dimensions in the second level, and 47 evaluation indicators in the third level. Finally, some implications are presented for school administration when undertaking teacher professional development evaluation and for teachers who are interested in enhancing their professional development.

**Key words:** professional development evaluation (PDE), indicator, weight, Fuzzy Analytic Hierarchy Process (FAHP).

## INTRODUCTION

Despite the crisis in education that has developed in many countries, the belief is central to most societies that school is 'a critical space, a complex crossroads of legitimate ambitions' (Gaspar, 2006) wherein citizens may become more knowledgeable, active, and useful to society, and teachers are regarded as nuclear actors in the provision of education (Margado and Sousa, 2010). As the most significant resource in schools, teachers are critical to raise education standards (OECD, 2009).

In 1996, the Education Reform Committee proposed the Consultants' Concluding Report after a two-year discussion. Specifically, discussions of education reform included teachers' professional development evaluation (PDE), which brought the controversy about teachers' professional status to the forefront again. A series of educational reform plans were implemented in Taiwan

after the report. One famous plan announced by the Ministry of Education in 2000 was "Grade 1-9 Curriculum Temporary Guidelines", which was formally implemented in 2001. Another plan, "Grant for teacher professional development evaluation for trials", was proposed in 2006; it encouraged schools and teachers to voluntarily participate in teacher professional development evaluation (PDE) in order to equip teachers with tools and resources necessary to provide quality instruction (Buczynski and Hansen, 2010), enhance teachers' professional literacy, and improve students' learning (Song, 2008). Baker, Palmer, and Kerski (2009) pointed out that high-quality professional development programs that include intellectual growth as well as the improvement of teachers' knowledge and skills must be expected as essential features in the careers of all teachers. In 2009, the

Ministry of Education established the “Implementation points of grant for teacher professional development evaluation for trials” to actively put teacher PDE into practice and to continue promoting professional growth.

A teacher evaluation system should give teachers useful feedback on classroom needs, the opportunity to learn new teaching techniques, and counsel from principals and other teachers on how to make changes in their classrooms (Boyd, 1989). To help teachers recognize their instructional outcomes, enhance instructional efficiency and promote overall quality, this study aimed to construct PDE indicators and weights for elementary school teachers that can function as objective and effective criteria to evaluate a teacher’s professional development. The research data was collected from literature reviews, interviews with experts and questionnaires and analyzed using the Fuzzy Analytic Hierarchy Process (FAHP).

### **Teacher professional development**

The term “teacher professional development” has generally been referred to as formal learning opportunities for teachers (Bellanca, 1995; Fenstermacher and Berliner, 1985). However, teacher professional development is not only the enhancement of teachers’ personal professional knowledge and instructional skills but also teachers’ cognition, self-awareness and reflection on the environment (Wu and Chang, 2002; Jian, 2002). More recently, teacher professional development has been broadened to include informal learning opportunities as well, as formal learning opportunities are narrow in scope and detached from real-time during the normal workday (Fullan, 1995; Knapp, 2003). Teachers’ professional development is based on the quality of the education they received to get their teaching degrees and constant improvement; in other words, only by participating in continuous formal and informal learning opportunities will a teacher’s professional capabilities be enhanced.

### **Teacher professional development evaluation**

Teacher knowledge and teacher professional development are critical in improving student achievement (Song, 2008). The research clearly shows a critical link between effective teaching and students’ academic achievement (Mathers et al., 2008). Teaching practices and student learning will be improved when teachers acquire a deep understanding of content knowledge and skills through effective and on-going professional development (Ball and Cohen, 1999; Corcoran, 1995). Teacher professional development is essential in efforts to improve schools (Borko, 2008) and has played a pivotal role in the successful implementation of educational reform in the U.S. (Song, 2008). For the past two years, teacher evaluation

has been the most visible aspect of educational policy in Portugal (Margado and Sousa, 2010). Mathers et al., Laine (2008) indicated that the role of teacher evaluations has surfaced only recently as an underutilized resource that might hold promise as tool to promote teacher professional growth and measure teacher effectiveness in the classroom. Due to the impact of fewer children (Huang, 2007), educational reform is also being actively undertaken in Taiwan in 21<sup>st</sup> century. To help teachers survive and be successful in the future, the study of professional development evaluation (PDE) for teachers is essential.

When used appropriately, teacher evaluations should identify and measure instructional strategies, professional behaviors, and delivery of content knowledge that affect student learning (Danielson and McGreal, 2000; Shinkfield and Stufflebeam, 1995). There are two types of evaluations-formative and summative. Formative evaluations are meant to provide teachers with feedback on how to improve performance and what types of professional development opportunities will enhance their practice. Summative evaluations are used to make a final decision on factor such as salary, tenure, personnel assignments, transfers, or dismissals (Barrett, 1986). The researchers defined that professional development evaluation (PDE) for teachers is conducted by collecting evaluation data and returning the results to teachers in the form of feedback in order to increase teacher self-awareness, increase professional knowledge, and improve instructional quality (Tseng et al., 2007; Weng and Lin, 2004; Jian, 2002). Kirkwood and Christie (2006) indicated that with the apparent emphasis on accountability and performance, teacher PDE has become instrumental to measuring increases in the effectiveness of delivering specified learning outcomes to the consumers of education. The Ministry of Education (2007) suggested that PDE allows teachers to reflect on their instruction through diagnosis and guidance. Through teacher guidance systems, PDE strengthens teachers’ cooperation with colleagues, encourages professional growth and literacy, and improves instructional quality. To summarize, the purpose of teacher PDE is to enhance teachers’ professional efficacy and instructional quality by helping them examine their strengths and weaknesses through systematic diagnosis and multi-nested data collection as well as through appropriate on-the-job training and professional development plans.

### **Construction of PDE indicators for teachers in Taiwan**

A deficit of formative devices in teacher PDE reduces opportunities for teachers’ professional development (Margado and Sousa, 2010). Without proper evaluation indicators, it is impossible to collect suitable data for teacher evaluation. What follows is a brief description of

the construction of PDE indicators for teachers in Taiwan in the last decade.

Using the Delphi Method, Lu and Lin (2001) studied professional growth indicators of elementary school teachers. Weng and Lin (2004) combined five stages of teachers' career development to establish PDE indicators suitable for Grades 1-9 Curriculum. Pan et al. (2004) also explored the construction of professional competence indicators for secondary and elementary school teachers.

The Department of Education of the Taipei County Government planned formation-oriented PDE for trials that lasted from February 2005 to July 2006 and included three stages. Three dimensions, with 25 evaluation indicators and 65 key points, were included under the PDE to evaluate teachers' performance.

Cheng (2006) used elementary schools in Kaohsiung City as subjects to construct a study of elementary school teachers PDE indicators and weights. The evaluation indicators included three hierarchies. The main indicators in the first hierarchy were teachers' professional growth, teachers' instructional efficacy and administration and collaboration performance; the second hierarchy included 11 indicators, and the third hierarchy included 65 indicators. The indicators in the second and third hierarchies could be adjusted according to the conditions encountered in the school. To meet the requirements of the "Grant for teacher professional development evaluation for trials" supported by the Ministry of Education, Pan et al. (2007) modified the number of PDE indicators of secondary and elementary school teachers from four categories that systematically expanded the focus to classroom management as well as teachers' on-the-job study, professional growth, professional attitude and service devotion.

According to the literature review of indicator construction discussed above, early studies on teacher evaluation indicators in Taiwan, excluding the one by Pan et al. (2007), tend to focus on teaching skills, curriculum design and instruction. The current study attempts to expand the scope of PDE by reclassifying the content of teacher PDE indicators into four perspectives: curriculum design and instruction, classroom management and guidance, research development and advanced study, and professional spirit and attitude. Based on the three hierarchies "perspectives-dimensions-indicators" framework, table 1 shows the initial draft of teacher PDE indicators.

The Ministry of Education encouraged schools to volunteer to participate in trials that began in 2006. The number of schools participating in the trials from 2006 to 2008 is shown in Table 2.

## RESEARCH DESIGN AND IMPLEMENTATION

The data for this study was collected from reviews of the literature, interviews with experts, and questionnaire surveys. The data were analyzed using Fuzzy Analytic Hierarchy Process (FAHP).

## Research subjects

The subjects for this study consisted of principals, administrative directors, and teachers in selected schools that voluntarily participated in research trials which were made possible through grants given by the Ministry of Education for teacher professional development evaluation. A total of 36 questionnaires were distributed, and 24 valid questionnaires were returned, resulting in a valid rate of 86%.

## Research scope

To explore teacher PDE indicators, this study adopted the "Teacher professional development evaluation standard" announced by the Ministry of Education (2007) as the criterion. Based on a review of the literature and the results of interviews with experts on teacher PDE indicators, a draft of 3 hierarchies of evaluation indicators, perspectives-dimensions-indicators, was developed for elementary school teachers (shown as table 1). This study produced relative items and weights of indicators based on the Analytic Hierarchy Process (AHP) questionnaire survey of teachers in selected schools who engaged in teacher PDE for trials.

## Research tools

To achieve the research purposes, this study designed a draft of a questionnaire using AHP (Chen and Huang, 2007). The researcher interviewed five scholars and principals with experience with teacher PDE indicators to modify and confirm items on the draft.

Finally, the hierarchical structure of teacher PDE indicators consisted of four perspectives--curriculum design and instruction, classroom management and guidance, research development and advanced study, professional spirit and attitude—as well as 11 evaluation dimensions and 47 evaluation indicators.

## Data Analysis

FAHP was used to analyze 24 valid questionnaires, and Power Choice, a FAHP software, was used for data processing and analysis. First, the opinions of research subjects were extracted using triangular fuzzy numbers. Power Choice was then used to integrate their views and to calculate fuzzy weights for the teacher PDE indicators. Finally, defuzzication was conducted to obtain the weights, and normalization was performed to acquire relative weights (fuzzy weighting values) for the indicators in the hierarchies in order to construct overall weights for the teacher PDE indicators (Table 3).

## RESULTS AND DISCUSSIONS

Based on a review of the literature, expert interviews, the questionnaire survey and research findings, this study constructed teacher professional development evaluation indicators and weights that included three hierarchies. The first hierarchy includes 4 evaluation perspectives, the second includes 11 evaluation dimensions, and the third is comprised of 47 evaluation indicators. The conclusions are shown below:

### Evaluation "perspectives" and weights in the first hierarchy

In the system of teacher professional development

**Table 1.** Indicators for teacher professional development evaluation (PDE)

<b>Perspectives</b>	<b>Dimensions</b>	<b>Indicators</b>
Curriculum design and instruction	Curriculum planning	<ol style="list-style-type: none"> <li>1. To recognize the concept and framework of school-based curriculum plan</li> <li>2. To develop school-based curriculum with colleagues</li> <li>3. To implement school-based curriculum with colleagues</li> <li>4. To participate in planning school-based curriculum evaluation with colleagues</li> </ol>
	Instructional planning	<ol style="list-style-type: none"> <li>1. To plan proper instructional plan</li> <li>2. To design curriculum according to instructional requirements</li> <li>3. To select/edit textbooks and teaching materials</li> <li>4. To adapt multiple learning evaluation methods</li> <li>5. To do self-evaluation of instruction</li> </ol>
	Instructional performance	<ol style="list-style-type: none"> <li>1. To focus on learning objectives during instruction</li> <li>2. To clearly present instructional contents</li> <li>3. To select effective instructional approaches</li> <li>4. To value learning principle and individual difference</li> <li>5. To adapt instructional resources to assist instruction</li> <li>6. To conduct collaborative instruction</li> <li>7. To do self-examination on instruction</li> </ol>
	Learning evaluation	<ol style="list-style-type: none"> <li>1. To clearly explain implementation of learning evaluation</li> <li>2. To properly conduct learning evaluation</li> <li>3. To properly use the results of learning evaluation</li> <li>4. To diagnose learning outcome and conduct compensatory instruction</li> </ol>
Classroom management and guidance	Classroom management	<ol style="list-style-type: none"> <li>1. To build fine classroom atmosphere or characteristics</li> <li>2. To create safe and learning-oriented situation</li> <li>3. To make rules for students' learning</li> <li>4. To deal with occasional incidents in classroom</li> </ol>
	Student guidance	<ol style="list-style-type: none"> <li>1. To immediately recognize students' psychological or behavioral problems on learning</li> <li>2. To possess required competence to guide students</li> <li>3. To direct students to construct proper concepts and behavior well</li> <li>4. To provide extra assistance to guide ill-learning students</li> <li>5. To keep close relationship with parents while guiding students</li> </ol>
Research development and advanced study	Research ability	<ol style="list-style-type: none"> <li>1. To possess comprehensive knowledge of what you teach</li> <li>2. To actively absorb new knowledge of what you teach</li> <li>3. To carry instructional research and innovation by new knowledge</li> <li>4. To systematically manage teaching portfolio</li> </ol>
	Professional growth	<ol style="list-style-type: none"> <li>1. To actively participate in seminars and studies</li> <li>2. To be willing to share professional work with colleagues</li> <li>3. To actively participate in school-based instruction</li> <li>4. To respond to education reform and follow the trend</li> </ol>
Professional spirit and attitude	Professional spirit	<ol style="list-style-type: none"> <li>1. To follow occupational ethics</li> <li>2. To reflect on and accept self</li> <li>3. To construct good relationship with parents and community</li> <li>4. To equally treat students with different backgrounds</li> </ol>
	Professional attitude	<ol style="list-style-type: none"> <li>1. To be responsible and willing to spend time and efforts</li> <li>2. To treat students in accordance with their uniqueness, aptitude and special needs</li> <li>3. To have intention to improve and develop instructional activities</li> </ol>
	School affair participation	<ol style="list-style-type: none"> <li>1. To fulfill teachers' obligation according to the agreement on contract</li> <li>2. To follow resolution of school policies and assist with school affairs</li> <li>3. To contribute to school activities</li> </ol>

**Table 2.** Number of schools participating in teacher PDE for trials

Year	2006	2007	2008
No. of schools*	124	164	174

\*It means the number of schools which engaged in the trials on that year.

evaluation indicators, there are 4 evaluation perspectives in the first hierarchy. The order of relative weights (from high to low) is as follows: curriculum design and instruction (27.8%), classroom management and guidance (26.7%), professional spirit and attitude (25.0%), and research development and study (20.5%). According to the results, in the first hierarchy of teacher PDE indicators, curriculum design and instruction and classroom management and guidance are the first two. Curriculum and instruction are related to the teachers' level of expertise in their specialization, like math. Classroom management and student guidance are critical tasks in classroom affairs. The results indicate that teachers should possess sufficient knowledge of the curriculum and be devoted to instruction in order to combine theory and practice in their efforts to enhance students' learning outcomes. Good classroom management allows teachers to create safe learning situations, enhance learning efficacy and provide appropriate guidance while instructing students.

### Evaluation "dimensions" and weights in the second hierarchy

In the second hierarchy, curriculum design and instruction includes four evaluation dimensions. They are as follows (from high to low weights): instructional performance (26.9%), instructional planning (26.1%), curriculum planning (24.0%) and learning evaluation (23.0%).

Classroom management and guidance includes 2 evaluation dimensions. They are as follows (from high to low weights): classroom management (52.3%) and student guidance (47.7%).

Professional spirit and attitude includes 3 evaluation dimensions. They are as follows (from high to low weights): professional spirit (34.4%), professional attitude (34.0%) and school affair participation (31.6%).

Research development and study includes 2 evaluation dimensions, which are as follows (from high to low weights): professional growth (55.5%) and research ability (44.5%).

According to the above order, in curriculum design and instruction, instructional performance and planning are more significant than curriculum planning and learning evaluation; in classroom management and guidance, classroom management is more significant than student guidance; in professional spirit and attitude, professional

spirit and professional attitude are more significant than school affair participation; in research development and study, professional growth is more significant than research ability. After content construction and the ordering of relative weights of evaluation dimensions in the second hierarchy, this study found that evaluation content could be defined under four major evaluation perspectives. Upon confirmation of evaluation perspectives, it was found that schools or teachers implementing teacher PDE can effectively control the direction of evaluation and key to teacher preparation. Teachers are able to enhance their professional knowledge, affection and skills according to important evaluation dimensions, which serve to enhance their overall performance and professional development.

### Evaluation "indicators" and weights in the third hierarchy

In the third hierarchy, curriculum planning includes 4 evaluation indicators. They are as follows (from high to low weights): To recognize the concept and framework of school-based curriculum plan (26.5%), to develop school-based curriculum with colleagues (25.5%), to implement school-based curriculum with colleagues (24.9%) and to participate in planning school-based curriculum evaluation with colleagues (23.1%).

Instructional planning includes 5 evaluation indicators. They are as follows (from high to low weights): to design curriculum according to instructional requirements (23.5%), to construct proper instructional plans (21.0%), to adopt multiple learning evaluation methods (20.4%), to perform self-evaluation (19.1%) and to select/edit textbooks and teaching materials (16.0%).

Instructional performance includes 7 evaluation indicators. They are as follows (from high to low weights): to clearly present instructional contents (17.5%), to select effective instructional approaches (16.9%), to focus on learning objectives during instruction (16.7%), to value learning principle and individual differences (14.6%), to adapt instructional resources to assist instruction (13.2%), to perform self-examination (13.2%) and to conduct collaborative instruction (7.9%).

Learning evaluation includes 4 evaluation indicators. They are as follows (from high to low weights): to properly conduct learning evaluation (26.9%), to diagnose learning outcome and conduct compensatory instruction (26.6%), to properly use the results of learning evaluations (24.5%) and to clearly explain the implementation of learning evaluations (22.0%).

Classroom management includes 4 evaluation indicators. The order of relative weights (from high to low) is as follows: to create safe and learning-oriented situation (25.6%), to make rules for students' learning (25.4%), to build a productive classroom atmosphere (25.0%) and to deal with occasional incidents in the classroom (24.0%).

Student guidance includes 5 evaluation indicators.

**Table 3.** Indicators items and weights of teacher PDE

First hierarchy evaluation perspectives	Second hierarchy evaluation dimensions	Third hierarchy evaluation indicators	Normalized weights	Sequence
A1 Curriculum design and instruction 0.278	A21 Curriculum planning 0.240	A311 To recognize the concept and framework of school-based curriculum plan	0.265	1
		A312 To develop school-based curriculum with colleagues	0.255	2
		A313 To implement school-based curriculum with colleagues	0.249	3
		A314 To participate in planning school-based curriculum evaluation with colleagues	0.231	4
	A22 Instructional planning 0.261	A321 To plan proper instructional plan	0.210	2
		A322 To design curriculum according to instructional requirements	0.235	1
		A323 To select/edit textbooks and teaching materials	0.160	5
		A324 To adapt multiple learning evaluation methods	0.204	3
		A325 To do self-evaluation of instruction	0.191	4
	A23 Instructional performance 0.269	A331 To focus on learning objectives during instruction	0.167	3
		A332 To clearly present instructional contents	0.175	1
		A333 To select effective instructional approaches	0.169	2
		A334 To value learning principle and individual difference	0.146	4
		A335 To adapt instructional resources to assist instruction	0.132	5
		A336 To conduct collaborative instruction	0.079	7
		A337 To do self-examination on instruction	0.132	5
	A24 Learning evaluation 0.230	A341 To clearly explain implementation of learning evaluation	0.220	4
		A342 To properly conduct learning evaluation	0.269	1
		A343 To properly use the results of learning evaluation	0.245	3
		A344 To diagnose learning outcome and conduct compensatory instruction	0.266	2
B1 Classroom management and guidance 0.267	B21 Classroom management 0.523	B311 To build fine classroom atmosphere or characteristics	0.250	3
		B312 To create safe and learning-oriented situation	0.256	1
		B313 To make rules for students' learning	0.254	2
		B314 To deal with occasional incidents in classroom	0.240	4
	B22 Student guidance 0.477	B321 To immediately recognize students' psychological or behavioral problems on learning	0.231	1
		B322 To possess required competence to guide students	0.190	3
		B323 To direct students to construct proper concepts and behavior well	0.222	2
		B324 To provide extra assistance to guide struggling students	0.167	5
		B325 To keep close relationship with parents while guiding students	0.190	3
C1 Research development and study 0.205	C21 Research ability 0.445	C311 To possess comprehensive knowledge of what you teach	0.272	1
		C312 To actively absorb new knowledge of what you teach	0.260	2
		C313 To follow current instructional research	0.241	3
		C314 To systematically manage teaching portfolio	0.227	4
	C22 Professional growth 0.555	C321 To actively participate in seminars and studies	0.267	1
		C322 To be willing to share professional work with colleagues	0.259	2
		C323 To actively participate in school-based instruction	0.223	4
		C324 To respond to education reform and follow the trend	0.251	3

Table 3. Contd.

D1	D21	D311 To follow occupational ethics	0.247	3	
Professional spirit and attitude 0.250	Professional spirit 0.344	D312 To reflect on and accept self	0.262	1	
		D313 To construct good relationship with parents and community	0.240	4	
		D314 To equally treat students with different backgrounds	0.251	2	
		D22	D321 To be responsible and willing to spend time and efforts on teaching	0.349	1
	Professional attitude 0.340	School affair	D322 To treat students in accordance with their uniqueness, aptitude and special needs	0.328	2
			D323 To have intention to improve and develop instructional activities	0.323	3
			D23	D331 To fulfill teachers' obligation according to the agreement on contract	0.334
	School participation 0.316	School affair	D332 To follow resolution of school policies and assist with school affairs	0.328	3
			D333 To contribute to school activities	0.338	1

They are as follows (from high to low weights): to immediately recognize students' psychological or behavioral problems (23.1%), to direct students to construct proper concepts and behavior (22.2%), to possess required competence to guide students (19.0%), to maintain close relationships with parents while guiding students (19.0%) and to provide extra assistance for struggling students (16.7%).

Research ability includes 4 evaluation indicators. They are as follows (from high to low weights): to possess comprehensive knowledge of what you teach (27.2%), to actively absorb new knowledge of what you teach (26.0%), to follow current instructional research (24.1%) and to systematically manage a teaching portfolio (22.7%).

Professional growth includes 4 evaluation indicators. They are as follows: (from high to low weights): to actively participate in seminars and studies (26.7%), to be willing to share professional work with colleagues (25.9%), to respond to education reform and follow the trend (25.1%) and to actively participate in school-based instruction (22.3%).

Professional spirit includes 4 evaluation indicators. They are as follows (from high to low weights): To reflect on and accept one's self (26.2%), to treat students with different backgrounds equally (25.1%), to follow occupational ethics (24.7%) and to construct good relationships with parents and the community (24.0%).

Professional attitude includes 3 evaluation indicators. They are as follows (from high to low weights): to be responsible and willing to spend time and effort on teaching (34.9%), to treat students in accordance with their uniqueness, aptitude and special needs (32.8%) and to attempt to improve and develop instructional activities (32.3%).

School affair participation includes 3 evaluation indicators. They are as follows (from high to low weights):

to contribute to school activities (33.8%), to fulfill teachers' obligation according to the contract (33.4%) and to follow school policies and assist with school affairs (32.8%).

The 47 evaluation indicators developed by this study are the specific evaluation content under 11 evaluation dimensions and 4 perspectives, which are summated results of Cheng 2006) and Pan et al. (2007). After confirming evaluation perspectives, schools and teachers implementing teacher PDE can set up evaluation dimensions and select the suitable indicators according to the indicator items, weights, and orders of indicators.

## CONCLUSIONS AND RECOMMENDATIONS

Excellent teachers are the key to enhancing educational quality. In recent years, Europe and U.S. have paid attention to teacher evaluation and treated it as an important element in education reform. Evaluations should provide all teachers with regular feedback that helps them grow as professionals, no matter how long they have been in classroom. Evaluations should give school the information they need to build the strongest possible instructional teams, and help districts hold school leaders accountable for supporting each teacher's development. Teacher performance is seen as part of educational performance, highlighting the importance of teacher evaluation (Beerens, 2001). The devotion of time for teachers to implement feedback from PDE was significant for promoting teacher PDE (Penuel, Fishman, Yamaguchi, and Gallaher, 2007).

Professional development may be pursued through a variety of strategies, including consultation, teacher training courses and informal reflection on practice (Morgado and Sousa, 2010). The study results show that it is important to focus more attention on how teacher PDE is

actually encouraged in multi-nested contexts, including both formal and informal activities. This study provides valuable information for education administration and teachers, which is discussed in the next section.

### For educational administration

Using evaluation results to create and implement professional development plans may improve how current resources are being spent, send a message to teachers that their professional growth is valued (Mathers et al., 2008). Teachers are more likely to learn cumulatively and substantively when they have regular contact with principals who have the requisite expertise to diagnose and exhibit productive instructional practices, guide school achievement, and provide teacher feedback on classroom practices (Knapp, 2003; Youngs and King, 2002). Song (2008) indicated that principals' instructional capacity, which is developed through professional development programs, can improve teacher professional development. Also, the use of performance indicators rather than the use of rewards or sanctions related to performance predicted teachers' increased engagement in professional development. Consequently, based on the study findings, we make the following recommendations for administrators:

- (1) The active promotion of the essence and concept of teacher PDE to help teachers construct correct cognition and recognize the positive function of evaluation.
- (2) The proper planning of pre-service and on-the-job training and the construction of professional growth support systems to demonstrate the essence of teacher PDE.
- (3) The measurement of school-based characteristics and careful construction of evaluation indicators to meet practical development.
- (4) The consideration of the structure characteristics and limitations of indicators as well as the demands and views of teachers to ensure the completeness of school-based evaluation indicators.
- (5) The identification of teachers who are not meeting performance standards in order to provide them with guidance or assistance.

### For teachers

The results of teacher PDE may increase teacher professional development because they can provide useful information on weaknesses that need to be addressed. The analyses of the study sample have the following implications for teachers:

- (1) The opportunity to become familiar with the content of evaluation indicators in order to actively address teacher

PDE.

- (2) Self-evaluation according to the evaluation indicators constructed by this study in order to actively enhance professional development and progress.
- (3) Requiring reflection as part of an evaluation process (Ministry of Education, 2007) may encourage teachers to continue to learn and grow throughout their career.
- (4) Teachers and administrators often favor the use of portfolio because they enable teachers to reflect on their own practice, allow evaluators to identify teachers' instructional strengths and weakness, and encourage ongoing professional growth.

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