

# Strategies for Improving Professional Development of Teachers in Primary and Secondary Schools in Taiwan after the Implementation of 12-Year Basic Education Curriculum

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**Abstract** Taiwan's 12-Year Basic Education, which was implemented in 2014, claims that primary and secondary school teachers must promote their professional development to improve students' learning. This study analyzes existing literature to achieve the following research aims: 1. To understand the connotations of professional development for teachers and the current situation in Taiwan, and to analyze the planning strategy for professional development for teachers after the implementation of the 12-Year Basic Education in Taiwan. 2. To analyze the main issues with the professional development of teachers in Taiwan after the implementation of the 12-Year Basic Education. 3. To analyze the main strategies to promote the professional development of primary and secondary school teachers after the implementation of the 12-Year Basic Education. Using a literature review, this study explores the direction and implications of professional development for teachers in Taiwan, the issues that affect teacher professional development after the implementation of Taiwan's 12-Year Basic Education and proposes strategies for professional development of primary and secondary school teachers. The recommended strategies for promoting the professional development of teachers are: (1) establishment of teacher professional standards and

pre-service teacher professional literacy, (2) use of international surveys as a guide, (3) strengthening the effectiveness of educational leadership and (4) implementation of the Teacher Professional Development Support System.

**Keywords** 12-Year Basic Education Curriculum, Teacher Professional Development, Teacher Professional Learning Communities

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## 1. Introduction

The early 21st century is characterized by rapid developments, permeating digital technologies and increasing numbers of students. The extent and pace of economic, social, technological, scientific, spiritual and environmental change mean that students today face uncertainties and possibilities on an unprecedented scale (Craft, 2010). The greatest danger to society may not be the economic or social crises, but pervading spiritual emptiness, meaninglessness and hopelessness. A new code of rational values that is based on the humanization of man and society is required (Danica & Sazhko, 2013).

The Taiwanese education system focuses on the practicalities of science and engineering and neglects humanistic ideals. Post-modern society has seen an increase in the suicide rate for adolescents and the middle-aged. Suicide is a major concern in Taiwan and some do not care about their own lives and other people's lives (Shih, 2020). However, this humanization must be practiced through education. In addition, the educational field nowadays has been gradually expanding. The range of learning is not limited to campus anymore, and the related issues have also extended to both society and the workplace. Moreover, education fosters students to become active participants in public affairs (Shih, 2019), and become a good citizen in the future, in which teachers play an essential role.

The quality of teachers is the foundation of student achievement and the key to successful educational innovation. In 2012, the Taiwanese Ministry of Education published a *White Paper on Teacher Education*, which promotes the cultivation of core values of responsibility, conscientiousness and sustainability in teachers to instill a love for education and professionalism and to encourage effective curriculum implementation (Shih, Chen, & Ye, 2020).

Successful education often depends on teacher quality, which should be centered on the expansion of professional knowledge and strategies to promote professional development. As professional development for teachers improves, so does teaching effectiveness, which benefits students' learning because professional development for teachers is closely linked with teaching effectiveness and the success or failure of student learning (Huang, 2003; Shih, Chen, & Ye, 2020).

Taiwan's 12-Year Basic Education Curriculum, which was implemented in 2014, extends basic education to secondary education. The scope of this reform reaches beyond general education, technical and vocational education, special education and other types of education; 12 years of educational content spanning primary and secondary school must be integrated into overall curriculum planning (Hung, 2019; Ministry of Education, 2014).

The government is actively promoting the quality of education in primary and secondary schools. The general guidelines for this reform recommend that teachers encourage adaptive development and lifelong learning in all students and promote the development of potential, knowledge of life and civic responsibility. Teachers must also equip students with the necessary skills to face present and future challenges and to become lifelong learners who can perform activities independently and cooperate with others (Hung, 2019; Ministry of Education, 2014). Most importantly, the holistic development of the person is an issue for education in Taiwan. To achieve these goals, teachers must participate in professional development.

This study analyzes existing literature to achieve the

following research aims: 1. To understand the connotations of professional development for teachers and the current situation in Taiwan, and to analyze the planning strategy for professional development for teachers after the implementation of the 12-Year Basic Education in Taiwan. 2. To analyze the main issues with the professional development of teachers in Taiwan after the implementation of the 12-Year Basic Education. 3. To analyze the main strategies to promote the professional development of primary and secondary school teachers after the implementation of the 12-Year Basic Education.

## 2. Directions and Issues for Teacher Professional Development

### 2.1. Teacher Professional Development in Taiwan: Directions and Implications

At the 1990 Congress, the World Confederation of Organizations of the Teaching Profession emphasized that 'teachers should continue to improve their knowledge and experience and develop their indispensable quality'. Teachers must engage in continuous professional development through lifelong learning (Chang, 2012).

There are diverse strategies for professional development for teachers. The Teaching and Learning International Survey (TALIS) for the Organization for Economic Co-operation and Development lists four types of teacher professional development (Ko, Chen, Lee & Chen, 2019):

- (1) The status of teacher participation in induction activities and teaching guidance, such as the induction activities designed for novice teachers and teachers in new schools.
- (2) The current status of teacher participation in professional development activities (i.e. the types of professional development activities in which teachers have participated in the past year).
- (3) Content and benefits of professional development activities in which teachers have participated in the past year and their effect on teaching effectiveness.
- (4) Demands and obstacles for teacher participation in professional development activities: refers to the degree of demand for teacher professional development activities for different topics and the obstacles that may be encountered.

The above four types of teacher professional development focus on the support of novice teachers, the influence of self-professional growth on teaching, and the needs and possible obstacles to professional development. These do not particularly emphasize the government's "top-down" support system for teachers' professional development.

TALIS surveys teachers and principals about the learning environment and teachers' working conditions in

schools in various countries. In total, 48, 15 and 11 countries participated in the middle, primary and high school stages of TALIS 2018, respectively. Taiwan participated in all three stages (Ko, Chen, Lee & Chen, 2019).

The professional development of teachers in Taiwan has long been supported by the government's "top-down" system. This policy helps to improve teachers' professional growth. However, if such a system lacks review, and excessive administrative work, visits, evaluations, and research activities will be generated, which will result in an excessive burden on teachers (Ministry of Education, 2016a).

After the implementation of the 12-Year Basic Education, the Ministry of Education began to review the content of the "support system for teacher professional development", hoping to establish a "top-down" partnership with teachers, reduce the workload of teachers, implement teaching professions, and improve students learning quality. The overall plan of the "support system for teacher professional development" includes six main items (Ministry of Education, 2016a):

- (1) Integration of teacher professional development-related plans and resources from top to bottom.
- (2) Promotion of teacher professional development with the support of local governments to meet the needs of teachers and schools.
- (3) Planning of the time that is allotted for each field of learning on a cross-school, cross-city or cross-country basis.
- (4) Provision of diverse models for teacher professional development and continuation of professional feedback and the certification of personnel.
- (5) Collaboration between universities for teacher education and primary and secondary schools to improve the quality of teacher education and local education.
- (6) Strengthening of guidance mechanisms for new principals, curriculum implementation and educational leadership.

In general, support system for teacher professional development in Taiwan's primary and secondary schools is in line with international trends. The planning direction is partially defined by the 12-Year Basic Education Curriculum (Ministry of Education, 2016a).

The 12-Year Basic Education Curriculum also emphasizes a literacy-oriented approach to adaptive teaching, integrated curriculum development and implementation and a diverse and adaptive curriculum that promotes school spirit and an integrated support system. Curriculum reform depends on teachers' professional practice so this reform emphasizes teacher professional development with the following goals (Ministry of Education, 2014, p.34):

- (1) Establishment of professional learning communities that enhance professional knowledge and the effectiveness of student learning through collaborative lesson planning, open classroom observation and debriefing, the development of course and teaching material, workshops, the arrangement of special lectures, field trips, online learning, action research, classroom research and sharing and discussion.
- (2) Enrichment of teacher knowledge of multiculturalism and special education and the development of teaching and counseling skills for students from various cultural backgrounds and for students with special needs.
- (3) Promotion of open teaching to establish peer learning: principals and teachers must use open teaching at least once in the overall planning for the school or community and submit feedback.
- (4) Teachers of indigenous cultural education must participate in relevant courses to enhance their knowledge and to encourage cultural connection.

From the above goals, the 12-Year Basic Education Curriculum attaches great importance to teachers' collaboration at the teaching profession, encourages teachers to communicate with each other in a professional culture, possesses multicultural teaching and counseling qualities, and has the ability to implement differentiated instruction and adaptive counseling.

## 2.2. Issues for Teacher Professional Development

There are two paths to promote the professional development of teachers in Taiwan. One path is to develop a support system for teacher professional development; the other is to improve teachers' professional competencies.

### 2.2.1. Growing Importance of Teacher Professional Learning Communities

Teacher collaboration and the establishment of professional learning communities are becoming increasingly important. For TALIS 2018, Taiwan performs poorly in terms of 'whether there are experienced teachers to support novice teachers and new teachers in schools' and 'whether they provide teaching guidance for novice teachers and teachers in new schools'. Taiwan's performance in other categories is similar to that of other countries (Ko, Chen, Lee & Chen, 2019).

### 2.2.2. Efficiency of Online Courses for Professional Learning

In terms of the professional development of middle school teachers, TALIS 2018 demonstrates that for different types of induction programs, significantly more middle school teachers in Taiwan participating in online courses and activities than in Finland or Japan. Taiwan's

current Teacher Professional Development Support System emphasizes the importance of mentor teacher programs and teacher professional learning communities. Whether online courses and activities can promote these programs warrants investigation (Ko, Chen, Lee & Chen, 2019).

#### 2.2.3. Effect of a Declining Birth-rate on Professional Development Activities

In general, relatively few primary and secondary school teachers in Taiwan participate in professional development activities (Ko, Chen, Lee & Chen, 2019). Few teachers also participate in teaching and counseling activities that are arranged by the schools (Ko, Chen, Lee & Chen, 2019), perhaps because Taiwan has a declining birth-rate and a low demand for teachers. Most teachers are enthusiastic instructors with experience, so there is a low demand for novice teachers and teachers who are new to the school system.

#### 2.2.4. Common Problems for Teacher Professional Development

Common problems for teacher professional development are centered on the lack of systematic, meaningful professional development activities that are arranged by local governments or schools. The activities may not be easily applicable to actual teaching and may not meet individual needs because they do not account for differences in teaching ability (Shih & Shih, 2019).

#### 2.2.5. Effect of Teachers' Complex Roles on Professional Development

The most commonly reported obstacles to professional development for primary and secondary school teachers in Taiwan for TALIS 2018 are 'too much work' and 'family responsibilities', for which the percentages are higher than those in many other countries (Ko, Chen, Lee & Chen, 2019). Numerous subjective and objective factors, including increasingly complex and diverse educational reforms, the growing complexity of the management and guidance of student behavioral problems, teacher conflicts over multiple roles, heavy teaching and administrative workloads, teacher-student interactions and external pressure from the community contribute to these two obstacles. In general, teachers' complex roles affect their professional development (Chen, 2011).

The above five issues reflect the direct impact of policy implementation, social trends, support systems and personal factors on the professional development of teachers. In terms of policy implementation, it is necessary to construct teacher professional standards to enhance teachers' ability to self-evaluate their needs for professional development. In terms of social trends, it is advisable to combine the results of international surveys to explore how other countries respond to the social trend of declining birthrates and improve teachers' professional

competencies. In the support system, education leadership can be used to tailor the needs for professional growth of individual teachers, and through reorganization, teachers can reduce the burden of multi-tasking and make them more willing to pursue professional growth. In terms of personal factors, teachers can be encouraged to form learning communities to enhance their motivation for professional growth through collaboration.

### 3. Implementation of the 12-Year Basic Education Curriculum and Strategies for Professional Development for Primary and Secondary School Teachers

Continuing from the previous paragraph, this section proposes the following specific strategies for teacher professional development for the implementation of 12-Year Basic Education Curriculum. It is hoped that primary and secondary school teachers should encourage adaptive development and lifelong learning in all of their students and promote the development of their potential, knowledge of life and civic responsibility. In addition, teachers should equip students with the necessary skills to face present and future challenges and become lifelong learners who can perform activities by themselves as well as cooperate with others.

#### 3.1. Establishment of Teacher Professional Standards and Pre-service Teacher Professional Literacy

Taiwan's Ministry of Education has implemented a standards-based teacher education evaluation system since 2005. At the 8th National Education Conference in 2011, this standards-based model was emphasized (Ministry of Education, 2012, 2016b).

In 2016, after the implementation of the 12-Year Basic Education Curriculum, the Ministry of Education released the *Guidelines for Professional Standards for Teachers*, which proposed 10 standards including: professional knowledge of education, knowledge of relevant educational issues and disciplines and abilities in curriculum and instructional design, effective use of teaching strategies, use of appropriate methods for learning evaluation, efficient class management, creation of a supportive learning environment, understanding and recognition of student differences for relevant counseling and professional growth and demonstrable collaboration and leadership skills (Ministry of Education, 2016b).

When the general guidelines on the reform were released, the Ministry of Education released the *Guide to the Professional Literacy of Teachers in the Republic of China—Pre-service Teacher Education Stage and Pre-service Teacher Education Courses Benchmark*,

which details five aspects of professional literacy for pre-service teachers: understanding of concepts and practice of educational development, understanding and respect for students' development and learning needs, planning appropriate courses, teaching and multi-evaluation, establishing a positive learning environment and providing adaptive counseling and complying with professional ethics (Ministry of Education, 2019).

At present, professional standards for teachers are still mainly used for the support system for teacher professional development promoted by the Ministry of Education. The system itself lacks specific measures to reward teachers' participation, so teachers generally do not use them as a tool to check their professional development.

As for professional literacy for pre-service teachers, it can be implemented through teacher pre-service education because it has a combined teacher education system. However, because it is extremely difficult to become a formal teacher in Taiwan, even if teacher pre-service education has implemented a quality-oriented teacher education, many teachers are still rejected from school work.

In general, professional standards for teachers and professional literacy of pre-service teachers allow teachers to be responsible for their own professional development and become active learners and to establish collaborative relationships with other teachers. They can also be applied to the accreditation, verification of qualifications and the certification of mentor teachers (Pan, 2014) to create better quality education for students.

### **3.2. Use of International Surveys to Improve Teacher Professional Development**

The TALIS 2018 results show that Taiwan's primary and secondary schools can improve their professional development in teaching and counseling programs for novice teachers and teachers who are new to the school system. This cannot be considered only from the educational perspective because both central and local governments are affected by the effect of declining birth-rates on education. Improvements in the quality of work and family responsibilities for primary and secondary school teachers are interrelated and have mutual effects. The implications of teachers' work and personal lives in terms of the social and economic aspects must be determined a work-life balance must be established from the institutional perspective to enhance motivation to participate in professional development.

The TALIS 2018 technical report states that Taiwan's advantage in terms of the professional development of primary and secondary school teachers is in the fact that the degree of educational democratization is higher than the international average. Most teachers accept differences

in students' socioeconomic status. Taiwan has implemented policies against socioeconomic discrimination and gender discrimination in schools and provides support measures for disadvantaged students. Most teachers believe that schools should encourage multicultural activities and organizations and enforce policy measures to teach students about ethnic and cultural discrimination (Ko, Chen, Lee & Chen, 2019). The professional development of teachers in Taiwan should consider these issues and the relevant countermeasures.

The self-efficacy assessment scores for Taiwan's primary and secondary school teachers for multiple teaching strategies and multiple assessments are lower than the international average (Ko, Chen, Lee & Chen, 2019), possibly because Taiwan's educational system is not conducive to the use of multiple assessments. Most teachers acknowledge that teaching is becoming more difficult. Teachers favor and are more adept at direct teaching strategies and tend to neglect indirect teaching strategies and differentiated instruction and assessment (Chang, 2018). Therefore, hard work is required to achieve the competency-based goal of professional development within the 12-Year Basic Education Curriculum. This is the current direction of professional development for teachers in Taiwan to create better quality education for students.

### **3.3. Strengthening of Educational Leadership**

The measures for the promotion of teacher professional development in the general guidelines for the 12-Year Basic Education Curriculum are as follows: (1) assisting schools in the design and development of curricula and in research and development of teaching materials, teaching strategies, learning evaluation and learning guidance; (2) supporting and providing relevant resources (e.g. equipment and funds), by establishing teaching research associations or professional learning communities and supporting the professional development of novice teachers; (3) encouraging the integration of cross-disciplinary and subject courses in the curriculum, promoting collaborative teaching and allowing teachers to make use of communities, non-profit organizations, industries, universities and research institutes to support adaptive learning; (4) assisting teachers in obtaining or renewing teaching certification, mastering the content that is outlined in the curriculum guidelines and developing professional literacy in terms of cross-disciplinary or subject courses, and (5) facilitating the professional development of teachers (Ministry of Education, 2014, p.34).

These measures require active participation and educational leadership of teachers. Educational leadership emphasizes the cultivation of student-centered learning through the professional development of teachers and

improvement of the teaching environment to enhance teaching and learning effectiveness (Chang, 2015, p.6).

In practice, mentor teachers encourage quality learning at the course, curricular and classroom management levels. Mentor teaching programs can also be combined with collegial leadership or professional learning community programs, which can involve the establishment of research groups and reading clubs, collaborative lesson planning, observation and discussion and overall guidance to allow novice teachers to improve. Encouraging continuous professional dialogue, mentor teaching and establishing professional learning communities enhances learning effectiveness for novice teachers. Frequent evaluation of teaching and counseling effectiveness through assessments of the quality of students' learning outcomes is essential for the professional development of teachers (Chang, 2015, pp.11-17).

The key to educational leadership development for teachers in Taiwan is a supportive and distributed leadership that promotes collaborative learning for teachers. The specific strategy encourages schools to promote learning communities and leadership learning so mentor teachers, directors, team leaders, field conveners and conveners of various teacher communities play middle leadership roles and each teacher has the opportunity to grow professionally, contribute expertise, assume professional responsibility and exercise educational leadership (Pan, 2017). This creates better quality of education for students.

At present, in order to improve the effectiveness of educational leadership in the professional development of teachers, we still need to work in some directions: First, we must encourage formal teachers to form a learning culture, because of the lack of specific incentive measures, it is difficult to form a general learning culture. Second, it is necessary to avoid the frequent flow of informal teachers, so as to build a stable collegial leadership or professional learning community. Third, it does reduce the burden on school administrators so that they have enough time to operate the learning community and play the role of education leadership. Fourth, provide specific incentives for teachers who are serving as educational leadership and mentor teachers to improve their self-affirmation and self-efficacy for educational leadership.

### **3.4. Implementation of the Teacher Professional Development Support System**

In 2006, Taiwan's Ministry of Education began conducting a Professional Development Assessment for teachers to promote professional growth for primary and secondary school teachers and to improve student learning outcomes. In 2017, this became the Teacher Professional Development Support System. Specific strategies include professional growth for teachers, initial teacher training

and the establishment of a networks supporting professional growth and training certification for teaching professionals (Ministry of Education, 2017). The specific goals are detailed in the following.

#### **3.4.1. Establishment of a Regional Network for Teacher Professional Growth**

The Ministry of Education plans to establish a regional network for teacher professional growth with local characteristics at the local government level that promotes professional development activities for teachers across schools, municipalities, cities, counties and regions. This network will include rural educators and consider their needs, establish study and training activities, arrange counseling personnel for teachers and provide relevant information for professional development. Local governments will establish a local counseling group and cooperate with central government to integrate the functions of relevant units (Ministry of Education, 2017).

At present, if the regional network for teacher professional growth is to operate better, it is still necessary to strengthen the connection between primary and secondary schools and teacher education university. Because there are a variety of departments related to teaching majors in universities, which can help teachers obtain: the subject knowledge, counseling skills, bilingual expertise, and cross-disciplinary teaching ability. The teacher education university can also provide outdoor teaching places for teachers to guide students to experience and experiment in special classrooms to improve the quality of teaching

#### **3.4.2. Improvement of Guidance Mechanisms for Novice Teachers**

Novice teachers are those who have been employed for three years or less. They are first-career teachers who are beginning to develop a teaching philosophy, personal teaching style and classroom management skills. They have three years of teaching experience or less and are newcomers to the teaching profession. Novice teachers are certified teachers with 3 years or less of teaching experience. The Ministry of Education requires local governments to nominate mentor teachers as counselors for novice teachers. These are certified teachers with at least 5 years of teaching experience who have excellent teaching and classroom management skills. Mentor teaching uses various channels, including talks, seminars, course discussions and community operations. Novice teachers and mentor teachers in the same domain participate in collaborative lesson planning, observation and discussion (Ministry of Education, 2017).

To implement guidance mechanisms for novice teachers, schools should first improve the bad habit of requiring novice teachers to perform administrative work, and arrange for novice teachers with mentor teachers with the same profession, good character, and adult education

literacy. Educational authorities should supervise public and private schools to implement guidance mechanisms for novice teacher, and punish school principal who let novice teacher handle unrelated teaching professions. In this way, novice teachers can improve their professionalism through various paths for further professional education to create better quality education for students.

#### 3.4.3. Practice of Professional Learning Communities

The Teacher Professional Development Support System implements collaborative lesson planning, open classroom observation and debriefing and teacher professional learning communities, as outlined in the general guidelines of the 12-Year Basic Education Curriculum. School conferences, field conferences, reading clubs, peer coaching and action inquiry increase teacher collegiality between teachers and promote student learning (Huang, 2019; Ting & Wang, 2018).

The Ministry of Education has also appointed a professional feedback panel for the training and certification system. The team will engage in public observation and discussion to establish a consensus on professional feedback (Ministry of Education, 2017).

Related research issues concern professional feedback for teachers to reflect through teaching and to plan teacher-based professional growth programs and participate in courses for the Compulsory Education Advisory Group, teacher professional learning community, teaching research association, Internet community and professional dialogue with professors (Wu & Shiung, 2018, p.121).

Dialogue between teachers promotes critical consciousness. Teacher education must instill this attribute. Critical consciousness is at the heart of critical pedagogy and advocates the educational philosophy of Freire, who studied critical consciousness as a means of self-liberation and stressed that critical consciousness is cultivated through collegial dialogue in an educational setting, which enlightens the self. Freire was primarily concerned with education as a means of freeing people from the bondage of the culture of silence (Taylor, 1993).

Since the implementation of the 12-Year Basic Education Curriculum in 2014, county and municipal governments have promoted professional teaching plans and a school-based professional learning community for teachers. Collaborative lesson planning, open classroom observation and debriefing allow the establishment of a professional learning community. If the pressure of teachers' teaching progress can be alleviated, and students' autonomy can be elevated, and improve teachers in large schools are not easy to build consensus, and increase formal teachers in small schools, it will greatly improve the effectiveness of professional learning community for teachers (Wu, Wu, Chi, & Jiang, 2016, p.164).

In summary, the professional development of teachers in Taiwan has long been supported by the government's "top-down" system. After the implementation of the 12-Year Basic Education Curriculum, the universal implementation of this "top-down" system has become more important than before. At present, it is extremely difficult to become a formal teacher in Taiwan, and the Ministry of Education still adopts a conservative strategy of controlling the number of teachers in response to the trend of declining birthrates. As a result, the number of informal teachers in schools has increased year by year and the flow of teachers is frequent. It directly affects the effectiveness of the implementation of the teacher professional development support system and indirectly affects the quality of student learning. In the future, if the teacher professional development support system can remain flexible to changes in social trends, combine the results of international surveys, and review the implementation of this "top-down" system in school education at any time, it will be possible to improve the above problems and promote the quality of teacher professional development.

## 4. Conclusions

The Chinese examination system was developed during the Han dynasty (219 BCE to 201 CE). It emerged because of the emphasis that society placed on educational and academic pursuits and the empire's need for intellectuals to serve as public officials. This was the first time that Confucian ideology was tested in national examinations. Those who passed were appointed as government officials. This open examination system was fairly popular, especially among people of lower classes, who viewed it as a springboard to advance their social standing. Passing the examinations had dual implications: a sudden upward shift in socioeconomic status and the achievement of prestige and the bestowal of honor on one's family and ancestors. Taiwan has inherited this thousand-year history of valuing education and schools and parents place great importance on education, from kindergarten through university (Lai, 2000).

In fact, students should have a broad base of knowledge, independent thinking, art appreciation and problem-solving ability, which are the aims of education. So education must be managed by specialist professionals to enable the establishment of a learning environment using appropriate tools and methods to guide changes in student behavior and knowledge. These professionals must be aware of current cultural mores and further their own professional development. Teacher education is critical to education so teachers must increase their critical consciousness. Teacher education must also allow teachers to realize that the ever-changing flow of information in today's society profoundly shapes the

evolution of education. It must also encourage teachers to educate themselves and to engage in professional development (Shih, 2019; Shih, Chen, & Ye, 2020).

The current era features a rapid change in the generation of new knowledge, so there is a gap between many people's knowledge and the environment in which they live. Teachers must continue to enhance their own learning and their professional knowledge, to benefit students.

The implementation of the 12-Year Basic Education Curriculum has driven increasing demand for teacher professional development, including the establishment of professional learning communities, the enrichment of knowledge of multiculturalism and special education, the encouragement of open teaching and the cultivation of teachers of indigenous cultural education.

Theory without practice is an abstract process and practice without theory encourages naive action (Freire & Vittoria, 2007). Theory is often conceived as an abstract idea or phenomenon. Practice involves an active component that goes beyond the abstraction of theory (Breunig, 2005).

The tensions between educational theories and practices, which was termed by Freire as 'praxis', can either buoy a classroom to great heights or sink it entirely. Teachers must constantly balance teaching philosophies with actual classroom constraints. This study examines the praxis of teacher professional development in terms of specific strategies and professional standards and in terms of professional literacy standards for pre-service teachers. International surveys must be used to enhance teachers' multicultural literacy, gender equality awareness and awareness of social justice and to expand the scope of mentor teaching programs. Educational leadership must also be strengthened. The measures that are outlined in the general guidelines of the 12-Year Basic Education Curriculum must be combined with leadership learning and peer learning for maximum effectiveness and the Teacher Professional Development Support System must be implemented, guidance mechanisms for novice teachers must be improved and a regional network for professional growth must be established for teachers.

Teachers can further their professional development using the strategies that are detailed, to optimize student learning outcomes and to contribute to the human capital base of educational development. This will secure a better future for Taiwan.

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