

Research on Teacher Professional Development Based on Growth Mindset

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Abstract

At present, the main problems in each stage of teachers' professional development can be summarized from internal and external causes. The internal causes are weak consciousness of independent development, lack of professional knowledge and ability, lack of scientific research, and lack of teaching reflection spirit. The external causes are the lack of team cooperation resources, the lack of personalized training in the education sector and the heavy burden of non-teaching. Growth thinking can fully drive the internal power of teachers, stimulate the internal potential of teachers, and mobilize the enthusiasm of teachers' professional development, so as to effectively solve the practical problems in teacher professional development. The growth mindset helps teachers' professional development. The internal factors drive the strategy as follows: continuously improve the awareness of independent development, continuously learn professional knowledge, gradually improve teaching ability, continuously strengthen practice and research ability, and carry out in-depth evaluation and reflection; The strategy driven by external factors is to comprehensively promote team cooperation, give full play to the coordinating role of educational administrative departments and set up a burden reduction team to implement institutional burden reduction.

Keywords

Growth Mindset; Teacher Professional Development; Consciousness of Independent Development.

1. Introduction

Teacher professional development has always been the focus of education reform. In order to cope with the accelerated changes of update and iteration in the information age, teachers need to continuously improve their professional development level. As the imparts of knowledge, teachers can promote the development of education only by working hard to learn new teaching knowledge, earnestly carrying out teaching practice and attaching great importance to professional development. However, in the practice of education and teaching, there are still serious "internal worries and external troubles" in teacher professional development, which seriously hinder the pace of teacher professional development. In order to better promote the professional development of teachers, this paper will use the growth mindset that attaches importance to ability, emphasizes efforts, views the development process scientifically, pays attention to self-evaluation, and faces up to failure, and formulate systematic and reasonable strategies to deal with the problems of teacher professional development.

2. Current Situation and Problems of Teacher Professional Development

Teacher professional development is the process of teachers' professional growth in the whole professional career, relying on professional organizations, applying professional knowledge and skills of education through lifelong professional training, gradually improving their teaching quality, and finally becoming a good educator.^[1] Teacher professional development is

a process combining external molding and internal revision, but it is still based on the independent development of individual teachers. Thinking mode plays an important role in the process of teacher autonomy development. Teachers' thinking mode internally determines the ability and level of teachers to recognize, understand, analyze and grasp educational phenomena and their essence, and restricts their behavior pattern and problem-solving effect. And it greatly affects the progress and level of teachers' professional development. For schools, teacher professional development is the core of improving the quality of education and the foundation of cultivating talents. For teachers, teacher professional development is the life of teachers' profession and the foundation of teachers' work. However, in view of the new requirements and challenges posed by the times development and social progress, the teacher professional development in our country still faces many problems. In this paper, the main problems in each stage of teacher professional development are summarized from internal and external causes. The internal causes are: weak consciousness of independent development, lack of professional knowledge, lack of professional ability, lack of scientific research and lack of teaching reflection and evaluation spirit; The external causes are mainly reflected in the lack of team cooperation resources, the lack of individuation of training and management in education departments and heavy burden for teachers.^{[2][3][4]}

2.1. Internal Causes

First, teachers' consciousness of independent development is weak. On the one hand, teachers do not care about their own development, and even settle for the status quo, leading to stagnation in the development of education professional; On the other hand, schools have many requirements for teachers, but seldom pay attention to the development of teachers themselves, which makes the professional development of teachers in a passive state. Second, teachers lack professional competence. After entering the new era, the education industry is also facing more new challenges. However, teachers ignore the development of their own professional ability, teaching methods and teaching strategies cannot meet the current needs, which seriously affects the process of teacher professional development. Third, it is difficult to balance teaching and research. Some teachers pay too much attention to their own teaching ability and neglect the development of scientific research ability; Other teachers spend a lot of time on research, but the level of teaching is difficult to improve. This makes teaching and research split, difficult to balance. Fourth, teachers lack the spirit of reflection in teaching. At present, the teaching still exists, the teacher's reflection spirit is not enough, the teaching reflection is not timely, the reflection is not systematic, not deep enough. Most teachers' reflections focus on teaching content, teaching method, teaching effect and so on, but there are few reflections on "how students learn".

2.2. External Causes

Lack of teamwork foundation. Novice teachers because of timidity, fear of communication, it is difficult to form teaching communication between schools, between teachers. In addition, the cooperation between teachers and industry teams is also due to the lack of implementation rules and supporting resources, making some teaching and research teams floating on the surface, unable to realize the full use of high-quality off-campus resources in team building. Second, training in the education sector lacks pertinence. In the training, many education departments do not take into account the actual situation of teachers, resulting in teachers simply cope with the training, the actual learning is not much. Third, the burden of additional tasks is excessive. In addition to the teaching and management of teachers, many teachers have other work to complete. This virtually gives teachers pressure, greatly squeezes the time and space of teachers' professional development, and consumes teachers' energy.

To sum up, teachers' professional development is affected by many internal and external factors, which seriously hinders their professional development. Therefore, scientific and

feasible thinking mode should be adopted to reasonably solve many problems faced by teachers' professional development.

3. The Value of Growth Mindset in Teacher Professional Development

3.1. The Concept and Nature of Growth Mindset

Growth Mindset: "Through practice, persistence, and hard work, humans have unlimited potential to learn and grow." People with a growth mindset approach challenges with poise, not afraid to make mistakes or be embarrassed, but focusing on the process of growth.^[5] This is a systematic mode of thinking with "malleable intelligence" as the core concept, and the goal is to focus on the mastery of a task to improve or deepen understanding. Humans are born with a strong desire to learn and start life with a growth mindset. Healthy infants do not give up the exploration of talking and walking, and can gradually master such abilities.^[5] However, with the emergence of children's self-evaluation consciousness, fixed thinking mode gradually ends this dynamic learning state. Existing studies have proved that thinking mode has a fundamental impact on the adjustment of individual behavior. Combining the three basic sub-processes of Bandura's "behavioral self-regulation", it can be found that individuals dominated by growth mindset believe that they can change themselves through continuous learning, so they will use self-observation, judge their own behavior, and set goals to "can they learn more useful knowledge". In the process of learning and practice, they perceive their own limitations and adjust the direction. Their self-reaction is generally self-confidence and continuous efforts after success or reflection and correction after failure. In this process, the individual can continue the positive self-reactive behavior and limit the production of negative self-reactive behavior. This thinking mode that attaches importance to individual internal adjustment takes the improvement of individual internal motivation as its starting point and destination. Therefore, it is fully in line with the essential needs of independent development in the professional development of teachers. Under the adjustment of such self-behavior, teachers who properly use growth thinking will naturally move forward to success.

Table 1. Comparison of two thinking modes

	Fixed Mindset	Growth Mindset
capacity	Believe in innate ability	Believe that abilities are malleable
effort	Despise effort and think that cleverness is fundamental	Attach importance to efforts and uphold the concept of lifelong learning
development process	Pursue ideal results	Pay attention to the nature of the law of development, development process and trend of things
self-assessment	Use others' evaluation to determine self-cognition and emotion	Evaluate yourself accurately and look at your current abilities objectively
failure	Poor ability to withstand pressure, attributing failure to external interference	Think failure is a necessary way to grow up
results	Full of complaints, stagnant	Thinking analysis, continuous progress

The opposite of growth mindset: fixed mindset, which believes that individuals are born with fixed values of intelligence and ability, tends to avoid challenges and failures, thereby depriving themselves of a life rich in experience and learning, and belongs to the negative defensive

mindset.^[5] This kind of thinking mode is reflected in the process of teachers' development as follows: in order to maintain the complete self-image of teachers, it leads to rigid thinking, fear of failure and change; In order to maintain the existing rules in the heart and form the "should" idea, dare not face new challenges; An "absolutist" defense to avoid potential harm, fearing the judgment of others. All these make teachers in the process of development lack of motivation, excess pressure.

As can be seen from the above table, there are significant differences between growth mindset and fixed mindset in six aspects: ability, effort, development process, self-evaluation, failure and result. Growth thinking mode has a positive attitude and scientific and reasonable cognition in these six aspects, which is conducive to promoting the continuous efforts, continuous progress and vigorous development of individuals with growth mindset.

3.2. The Value of Growth Mindset to Teachers' Professional Development

The growth mindset attaches importance to the ability reconstruction through continuous efforts, pays attention to the development process, emphasizes self-evaluation and objectively looks at failure. This thinking mode can fully drive the internal motivation of teachers, stimulate the internal potential of teachers, mobilize the enthusiasm of teachers, and thus play a good role in promoting the professional development of teachers. Therefore, specifically, first, the growth mindset attaches importance to continuous efforts, which is conducive to teachers attributing professional development to personal efforts. The growth mindset can promote teachers to realize that their professional development depends on their own inner efforts. Teachers who attach importance to efforts are more able to awaken their self-development consciousness from within individuals, conscientiously learn professional knowledge, and constantly improve their professional ability. Second, growth mindset pays attention to the development process, which is conducive to promoting teachers to pay attention to the nature and law of professional development. Only when teachers have a deep understanding of the nature and law of professional development can they know how to effectively promote their own progress and growth by using effective strategies in their career, and then grasp the best opportunity for development. Therefore, the growth mindset can improve the efficiency and effect of teachers' professional development, promote teachers to combine scientific research with practice testing, test truth with practice, and ensure the accuracy and efficiency of each development procedure. Third, the growth mindset emphasizes self-evaluation, which is conducive to teachers' comprehensive and correct self-evaluation in professional development. Accurate self-evaluation, profound personal reflection and independent self-awareness promote teachers' rational cognition of their own professional development status and determine teachers' precise orientation of development direction. Only by correctly grasping the direction of professional development can teachers guarantee the quality of development as a whole. Fourth, the growth mindset treats failure objectively, which is conducive to teachers to learn lessons from failure and continuously enhance their confidence. In the process of professional development, teachers often have to face various challenges and failures such as teaching, scientific research and assessment. Only by bravely accepting challenges and calmly facing failures can teachers continue to learn lessons in professional development and transform setbacks into forces for future success. Therefore, the growth mindset is conducive to teachers' excitement in the face of adversity, which is conducive to them gradually waking up from the vague development consciousness, reigniting their fighting spirit from the depressed mental state, and returning to the right track from the trough of professional development.

From a philosophical point of view, the development of things is mainly realized through the interaction of internal causes and external causes, with internal causes playing a decisive role and external causes playing a supporting role. Therefore, in the professional development of

teachers, we should also pay attention to internal and external factors. The external factors of teachers' professional development mainly come from the external environment, which mainly refers to the promotion of teachers' professional growth by education departments or schools through providing training, visiting students and mutual cooperation among teams.

4. The Mechanism Analysis of the Impact of Growth Mindset on Teachers' Professional Development

Teachers' thinking mode refers to the reflection of educational knowledge in teachers' brain and the way of information processing. Teachers' individual actions are affected by teachers' thinking mode. Teachers' growth thinking is based on the core concept of "malleable intelligence". It is believed that teachers have unlimited potential for learning and professional growth. Teachers' growth and potential development will be achieved through the accumulation of professional knowledge in education, the familiarity with the use of positive thinking methods, and the perseverance and courage to deal with difficulties

4.1. Teachers' Growth Mindset

The core of teachers' growth mindset, "intelligence plasticity", is realized through the adaptation of three main parts: knowledge base, positive thinking and independent belief. Psychologist Jean Piaget proposed in his research that there are two basic ways of thinking to adapt to the environment: one is assimilation, using the existing cognition of individuals to understand new things, and modifying the understanding of new things to conform to the original cognitive state; The second is adaptation, that is, not to change new things, but to change their own cognitive mode to adapt to new things. Growth mindset means that in the process of adaptation, knowledge influx, information reprocessing, positive behavior orientation and other processes are realized, so that the existing thinking is transformed into growth mindset. This is shown in Figure 2.

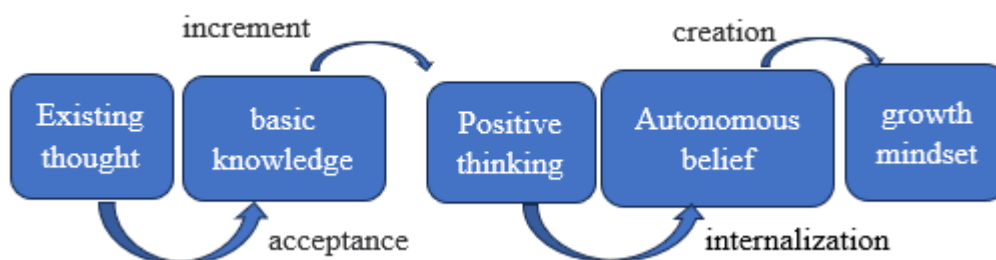


Figure 2. Transformation mechanism of teachers' growth mindset

4.1.1. Knowledge is the Basic Resource of Thinking Mode

Knowledge is the basic material and medium of thinking, which draws the horizon and level of thinking.^[6] Teachers with a growth mindset need to have a deep understanding of the concepts, judgments, skills and strategies related to growth thinking, and be willing to apply this knowledge in the process of developing their own growth thinking, cultivating healthy habits, innovating ideas, developing resources, and creating opportunities. When teachers' growth thinking knowledge is growing, their thinking mode will become more advanced and complex, which will directly enhance teachers' thinking vision and professional ability. On the contrary, the more advanced the teachers' thinking vision and professional ability, the higher their knowledge level will be.

4.1.2. Positive thinking is an Important Way to Deepen Understanding

Positive thinking means that individuals can use rational cognitive beliefs and positive styles to describe, explain and analyze events in any situation, especially in negative situations, and seek positive factors to put forward positive evaluation. Positive thinking is composed of positive and positive concepts and thinking materials, innovative thinking methods and positive and open thinking characteristics.^[7] This level is the information processing level of teachers' growth mindset, which forms the information transformation and processing procedure of teachers' knowledge of growth mindset. Based on knowledge increment, sufficient information processing process can be formed, which is manifested as internalized adaptive adjustment, to prepare for the thinking transformation process.

4.1.3. Belief in Autonomy is the Spiritual Core of Thinking

The autonomous belief level is composed of teachers' professional beliefs, values, self-efficacy and other spiritual cores, which is at the core of teachers' growth mindset, guiding teachers' professional value orientation and providing fundamental motivation and support for their development. Strong belief support can point out the direction and sort out the goal for teachers' professional development, stimulate teachers' internal motivation and realize their self-value. Teachers' professional beliefs and values are the psychological basis to determine teachers' behavior, which dictates that individual value orientation directly affects individual teachers' behavior.

4.2. The Mechanism of Teachers' Growth Mindset and Professional Development

4.2.1. Construction of Professional Knowledge System for Teachers' Growth Thinking Extension

The application of new technological means in education continues to cause profound changes in classroom teaching. In order to cope with these changes, teachers need to build new mechanisms and models of self-renewal to respond to new opportunities and challenges brought by technological changes. The role of teachers is constantly being updated. How to make teachers the motivators of students' learning motivation and interest, the diagnosers of learning behaviors and results, and the guides of learning content selection and learning styles all depend on the scientificity and professionalism of teachers' professional development. Education and teaching are a special activity with richness, complexity and context. Therefore, to improve teachers' teaching effectiveness and promote teachers' professional development, it is necessary to expand teachers' understanding of professional knowledge. Professional theory knowledge, teaching method knowledge and teaching practice knowledge are the basis and important content of teachers' professional knowledge. Growth mindset will build new connections and new knowledge network systems based on teachers' existing professional knowledge. The generation of new knowledge does not depend on external technical knowledge infusion, but on self-understanding, self-regulation and a plastic process of self-development.

4.2.2. Teachers' Growth Mindset Dynamically Improves Professional Competence

Teacher's professional competence is the core element of teacher's professional development and the key index of teacher's professional evaluation. [8] High-level teachers must have high-level professional ability, and the key goal of teacher professional ability development is to learn to teach. From the perspective of epistemology, education and teaching activities are the thinking activities of educational subjects first, so thinking is the cognitive core of teachers' professional ability. Teachers' professional ability includes: "basic ability, teaching ability, educational ability, self-development ability, teaching innovation ability", these five abilities spiral up to form a complete hierarchical structure. The formation of these professional abilities

needs to be realized through the intermediary of teacher learning, and teacher learning points to the promotion of true self-realization and school innovation through teachers' internal motivation. Growth mindset requires teachers to introduce more knowledge and information by changing thinking mode before making decisions, so as to influence individual behavior choice of teachers. The core of thinking materials and knowledge base used in the operation of growth thinking are all oriented to the positive orientation, including the connotation of encouraging teachers' behavior; The innovative way of thinking can motivate teachers to face difficulties and challenges, and help teachers successfully overcome the difficult stage of career development.

5. Teacher Professional Development Strategies Based on Growth Mindset

The following will take the growth mindset as the core, from two aspects of internal and external causes, in-depth elaboration of teacher professional development strategies.

5.1. Internal Factors Drive Strategies

5.1.1. Constantly Improve the Awareness of Independent Development

Teacher professional development refers to individual teachers' evaluation of their own development level, evaluation of work performance, and awareness of the need to change the status quo, including the awareness of the existing development results, current development status and future planning. Growth thinking focuses on promoting growth through efforts, and efforts, as an internal and changeable factor, once they become part of teachers' consciousness of independent development, will promote teachers to attach importance to continuous efforts and realize that professional development ultimately depends on their own efforts, and teachers will no longer regard meetings, training, teaching competitions and learning outside as heavy burdens. But actively participate in every activity conducive to their own development. Growth thinking pays attention to the development process, that is, pays attention to the details of development, the links between development links, once this kind of growth thinking is engraved into the consciousness of teachers, it will promote teachers to pay attention to every detail of personal development, seize every opportunity, will take the initiative to do a good job in daily education and teaching, and actively participate in scientific research activities, instead of complaining.

5.1.2. Keep Learning Your Expertise

Professional knowledge is the basis for teachers to carry out teaching work, including the professional system knowledge of teaching subjects and educational teaching knowledge, that is, the question of what teachers teach. In order to give full play to the role of growth thinking in promoting teachers' efforts to learn professional knowledge, teachers themselves should do the following three things: First, teachers need to internalize the belief that "intelligence can be cultivated and efforts need to be paid". In addition to consolidating the existing professional knowledge, teachers should have a growth mindset, enhance the awareness of active development, have a lifelong learning attitude, understand the principle and nature behind professional knowledge through constant challenges to the "personal comfort zone", constantly break the boundaries of knowledge, update and develop disciplinary expertise, and promote interdisciplinary integration. To meet the needs of the development of The Times. To be specific, you can start from reading a new book of the discipline, and actively pay attention to the development trend of interdisciplinary disciplines, insight into the frontier and hot topics of the discipline, and constantly inject new knowledge and ability into yourself, so as to promote your own professional development. Secondly, teachers should also look at the problem from the perspective of teaching and learning, implement the growth thinking in the interaction process

of teaching and learning, adapt to the advanced teaching theories and teaching methods through their own efforts, train students with scientific and targeted teaching methods, and promote them to apply what they learn, so as to achieve good teaching effects and realize the purpose of teaching and learning.

5.1.3. Constantly Strengthen Research and Practice

Research and practice ability are the wings of teachers' growth and the sharp tools for teachers' professional growth to develop in depth. Growth thinking believes that setbacks temper growth, failure is the step of development, teachers can arm themselves with growth thinking, and believe that efforts will be rewarded. I believe that after numerous failures, summarizing the reasons will eventually succeed. The specific strategies are as follows: First, promote professional research through growth thinking. Teachers with growth mindset will abandon the idea of cognitive exhaustion and emotional exhaustion, no longer think that their research strength is poor and shrink back, and will not be passive because of lack of research results. They firmly believe that failure is the only way to grow up, and learning from the failure of scientific research is the ladder to improve research strength, thereby enhancing the ability to withstand pressure. Actively break through the bottleneck of scientific research; They take the initiative to adapt to the new situation, new requirements and new tasks, conduct a profound analysis of the problems existing in teaching practice, such as the use of textbooks, student feedback and disciplinary integration, reveal their internal development laws, and enrich their own thinking and improve their own methods with new educational concepts. Second, strengthen professional research based on educational practice. Growth thinking is characterized by an open and developmental view of things, which pushes teachers to realize that without practical research, teaching content and form cannot be enriched. By participating in the activities of teaching and research teams, teachers actively create research platforms, sublimate teaching practice skills into theories, and thus embark on the development road of academic teachers.

5.1.4. Carry out in-depth Evaluation and Reflection

Teachers should be fully aware of the importance of evaluation for each teacher's professional development. On the one hand, self-evaluation is an important means for teachers to self-recognize and improve themselves. Teachers should objectively look at their current abilities and levels, face up to their strengths and weaknesses, identify their position in each stage, and accurately locate the direction of future efforts. On the other hand, teachers should humbly accept the criticism and opinions of others, and use the evaluation of others to promote self-cognition, that is, attach importance to the use of feedback information of others to establish a clear cognitive image of themselves, so that they are often optimistic and active in the development process, which is of course the focus and difficulty of evaluation work. Moreover, teachers can reflect not only when they are alone and quiet for a long time, but also during busy teaching intervals. These "fragmented reflections" can help teachers understand the feelings of teaching, constantly learn to listen to their own voices, view teaching practice from different perspectives and improve the quality of work and life. Teachers based on growth thinking establish reflective behavior habits from self-evaluation and other evaluation, fully predict the trend and change of future professional development, make reasonable judgments, adjust personal behavior timely, and become reflective teaching practitioners.

5.2. Adjustment Strategies of External Factors

5.2.1. Comprehensively Promote Team Cooperation

Teacher teamwork plays an important role in promoting teachers' information sharing, optimizing teachers' structural ability, improving teachers' reflective ability and strengthening teachers' self-education, and is an inevitable choice to promote teachers' professional

development and overall improvement of professional quality. Specific measures include: First, in the process of teamwork, teachers are encouraged to objectively evaluate their own teaching ability and level with an open mind, establish a relationship of trust and cooperation with other teachers, and learn to analyze and solve problems from the standpoint of others; At the same time, it is necessary to anticipate the depth and breadth of professional development in the process of cooperation, thus generating a continuous desire and motivation to learn. Secondly, educational administrative departments and schools should make it clear that teamwork in essence does not mean giving up independent thinking on education and teaching issues, but rather improving teachers' teaching and scientific research ability with the help of various forces in addition to independent thinking, so that teachers can objectively view the success and failure in the process of teamwork and maintain an attitude of unremitting efforts in the face of setbacks. Promote the professional growth of teachers.

5.2.2. Give Full Play to the Coordinating Role of the Educational Administration

The normalization and institutionalization of teachers' professional development mainly include the relevant training work organized by education administrative departments and schools at all levels. The educational administrative departments and schools with growth-oriented thinking should realize that the fundamental purpose of teacher training is to promote the inner awakening of teachers, provide internal driving force for the development of teachers, and promote teachers to regard teaching development as a real internal need, rather than making training a formality. First of all, education administrative departments and schools should promote teachers to actively strengthen their professional development awareness, start from their own rigid needs, actively generate the desire to learn and constantly meet challenges, and actively apply to schools for relevant training projects and visiting units in accordance with the professional development goals and training standards of teachers in the region and the profession. On the other hand, education administration departments and schools should simplify the application procedures for training and visiting students as much as possible, and build green channels to provide convenience for teachers.

5.2.3. Set up a Burden Reduction Team to Implement Burden Reduction

In order to make the work of teachers' load reduction more accurate and effective, schools should set up load reduction teams to work regularly to provide teachers with load reduction services and guarantees. Teachers will inevitably encounter some risks or challenges when performing their duties in education and teaching. The burden reduction team should provide legal and emotional support for teachers to avoid unnecessary harm and trouble. On the one hand, it can protect the legitimate rights and interests of teachers and prevent them from being treated unfairly or unreasonably. On the other hand, it can improve the psychological quality of teachers and enhance their confidence and sense of responsibility for education.

6. Conclusion

Teachers are the main builders and core forces of education. To build a high-level team of teachers is one of the important tasks in the construction of China's education and teaching. The professional development of teachers is related to the quality of personnel training and the future quality of the people. From two aspects of internal and external factors, based on the teacher's individual and team as well as the external environment to shape personal professional development, this paper points out that teachers should stimulate their own cognition of growth thinking. With the development of education in the new era, there will certainly be many problems that need to be analyzed and solved. It is expected that the majority of researchers will think and solve these problems from a broader and more profound perspective to ensure the healthy and sustainable development of teachers' profession.

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