International Journal of Education and Learning
Vol. 5, No. 3, December 2023, pp. 140-151
ISSN 2684-9240

Teachers' learning driven by "multi-subject needs": Implication, mode, and strategies

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ARTICLE INFO

Received 2023-10-25
Revised 2023-11-13
Accepted 2023-12-01
Published 2023-12-13

Keywords
Multi-subject needs
Teachers' learning
Activity Theory
Learning mode

ABSTRACT

Under the influence of the concept of lifelong learning, teachers' learning has become the main paradigm of teacher development. The traditional training for primary and secondary school teachers often pays too much attention to the transmission of theories and ignores the practical needs of teachers, resulting in the dilemma of low learning efficiency and poor effect. In order to break through the current learning dilemma of primary and secondary school teachers and meet the needs of students' growth and long-term development of schools, on the basis of clarifying the basic implication of teacher learning driven by "multi-subject needs", this paper introduces the Activity Theory to discuss the implications of teacher learning, constructs the teacher learning mode driven by "multi-subject needs," and analyzes the operating mechanism of this learning mode. In order to promote the effective operation of this mode, teachers should set up the concept of lifelong learning, adhere to the self-orientation of learning, and pay attention to learning reflection. The school level should create a cultural atmosphere for teachers' learning, make clear the purpose of teachers' learning, let teachers' pay attention to the practical situation, and make teachers' learning become a normal activity.

1. Introduction

In recent years, under the influence of the concepts of Lifelong Learning, Ubiquitous Learning, and Blended Learning, the development paradigm of teachers has gradually changed from "education" to "learning," and teacher learning has become an important topic for discussing teacher professional development. The concept of teacher learning has national and international implications for teacher training, for teaching assessment, and for the design and implementation of educational policies [1]. In order to adapt to the new changes in social development and students' learning styles and to meet the new requirements of education and teaching reform, the construction of primary and secondary school teachers in the new era requires teachers to have higher professional qualities, especially to strengthen the awareness of lifelong learning and daily learning ability. Only by effective and deep teacher learning can teachers' professional quality be improved fundamentally. At present, primary and secondary school teachers mainly learn through the "Acquisition Mode" of expert lectures or book reading and the "Participation Mode" of emphasizing mentoring, school-based research, and field learning [2]–[4].

Although the "Acquisition Mode" has improved the theoretical level of teachers to a certain extent, it is difficult to ensure the effective use of theoretical knowledge in work practice due to the lack of attention to the actual needs of teachers and the "Participation Mode" is conducive to promoting the exchange and sharing of experience among teachers, but it is easy to stay in the inefficient circular communication state among peers. The lack of teachers' individual education teaching practice,

students' growth, and long-term development of the school need to take care of teacher learning, which easily leads to the situation of teachers' learning low efficiency and poor effect. Understanding teacher learning and the relations between that learning and practice has become a research priority in the quest for quality [5]–[7]. In order to optimize the effect of teachers' learning, teacher learning should be closely linked with the needs of self-growth, students', and schools' development. Starting from the learning rules and working characteristics of teachers, this study analyzes the basic meaning of "multi-subject needs," introduces Activity Theory, constructs an effective teacher learning mode driven by the needs of teachers, students, and schools, presents the constituent elements of the teacher learning mode, and proposes promoting strategies for the effective operation of the learning model.

2. Analysis of "multi-subject needs" in Teacher Learning

Teachers' post-service learning is related to the development of themselves, their students, and schools. In the person, the cognitive, affective, and motivational sources of behavior are intertwined and embedded in a social context, and therefore, teacher learning is multi-dimensional learning [8]. Carrying out targeted teacher learning can enrich teachers' theoretical knowledge, influence teachers' attitudes and values, and enhance teachers' professional quality. The improvement of teachers' quality has a profound impact on promoting students' all-round development and optimizing the quality of school education and teaching.

2.1. The internal needs of teachers' individual development

Learning is an important way for human beings to acquire knowledge and realize their own development. Everyone has the right to study for their own, social, political, economic and cultural development [9], [10]. Japanese educator Satou Gaku believes that learning is the communication and dialogue between individuals and the objective world, others and themselves [11]–[13]. Teachers are special groups who specialize in educating people. Their knowledge base, values and abilities are the core elements of professional quality. The special professional characteristics require teachers to constantly enrich their own knowledge reserves in order to better serve the education activities. At present, the development of information, networks, and intelligence in education has brought unprecedented opportunities and challenges to teachers' learning. On the one hand, teachers can easily and conveniently obtain a lot of useful information to enrich their knowledge. On the other hand, teachers have to face the dilemma that the knowledge they already have may be outdated soon, so they must update their knowledge through rapid, efficient, and continuous learning to cope with the uncertainty of the future. Traditional receiving training and thinking mode can hardly help teachers keep up with the pace of The Times. Teachers should change passive training to active learning and improve their critical thinking ability and innovative level.

Maslow divided human needs into basic needs and developmental needs, and only the satisfaction of developmental needs can bring happiness to people. The individual development of teachers is different, and their individual internal development needs are also different. Therefore, as adult individuals, teachers should consciously carry out self-directed learning activities according to their own internal development needs and become "enlightened people" in self-directed learning. Self-directed learning refers to the learning process in which learners set learning goals, choose learning resources, motivate themselves, and evaluate themselves [14], [15]. Self-directed learning is an ideal learning method for adult learning, an inevitable manifestation of human development and maturity, and also the main guarantee for people to realize independent learning, continuous learning, and lifelong learning. The essential state of learning demonstrates the importance of adult learning theory, in which it is important for the learners to determine what, when, and how to learn [16]. It has the characteristics of autonomy, flexibility, universality, and lifetime. The so-called "enlightened person as a teacher" refers to the teacher's conscious protection, pursuit, and realization of the value of life, education, and culture [17].

To be specific, as a special group engaged in educational and cultural undertakings, teachers should pursue themselves more consciously than other groups to achieve a higher level of healthy personality development, equal development, and happy life. The teachers' consciousness of education is embodied in the teachers' consciousness of educational goals, subject teaching, and educational methods and is the pursuit of what and how to train people at present. As the existence of cultural bodies, teachers are the mechanism to carry out cultural inheritance and promote cultural reproduction. They should have a sense of mission, consciously assume the educational mission of cultivating morality and cultivating people, get close to, understand, and practice the inheritance and development

of national culture, and use all excellent human civilization to nourish themselves and educate students. To achieve self-achievement, teachers need to practice the concept of "the awareness of the teacher" and adhere to the self-oriented development path.

2.2. External needs for students' and schools' development

The professional value of teachers lies in meeting the needs of society, that is, meeting the needs of cultivating people. Whether students' healthy personality is formed and their all-round development is realized depends on whether various reasonable needs are satisfied in the process of their education and growth. Students need refers to an unbalanced psychological state in which students want to get something according to their learning situation and their own development. This unbalanced state is the driving force to promote learning action and has an important impact on students' learning performance and learning effect. In learning, students mainly produce needs of emotional belonging, respect, communication, performance, knowledge, academic achievement, aesthetics, and other aspects. Students in school study and life will produce a lot of common and personalized needs; these needs have reasonable and unreasonable differences. Unreasonable needs should be timely and properly guided, and reasonable needs should be met to the maximum extent. The solution to this problem depends on teachers' view of students and their professional quality, and the improvement of teachers' professional quality and the cultivation of their ability to respond to students' needs are mainly achieved through targeted learning, practice, and reflection.

Teacher learning based on students' needs refers to a purposeful, planned, and diversified learning activity initiated by teachers on the basis of their awareness, analysis, and understanding of students' needs, knowing that they cannot guide or satisfy students' needs by relying on their current knowledge reserve and practical experience. To guide or meet students' needs is the starting point and landing point of teacher learning. Communicating or interacting with the students is the main way to understand the special needs of the students. Communication and interaction between teachers and students is significant to make cooperative learning successful, and adequate communication and interaction satisfying for both participant groups [18]. "Understanding students' needs, carrying out learning actions, guiding or meeting students' needs, learning reflection" is the logic of this type of teacher learning. In addition, the development of education in different regions is different, and the school situation of each school is also different. To carry out school-based teacher learning and improve school-based teacher strength is an important link to promote the high-quality development of school education and teaching. Teacher learning based on the school's learning situation and the school's situation effectively balances the school-based student development with the needs of school education reform, which is not only conducive to showing the school's teacher development characteristics to the society, but also conducive to attracting social attention, supporting the school's development and construction, and improving the school's social reputation.

3. Construction of Teacher Learning Mode Driven by "Multi-subject needs"

Traditional teacher learning mainly adopts the mode of expert training. Under the influence of the traditional learning mode, people tend to simplify the understanding of teacher learning and think that teachers can realize learning by accepting theoretical knowledge and imitating practice. However, learning is carried out in a complex context, and a systematic view of learning is needed to examine teacher learning. Activity Theory is a theoretical tool to analyze the process of human activity and knowledge production from a holistic and systematic point of view, and it has important guiding value for us to renew our learning concept and build a teacher learning mode based on "multi-subject needs".

3.1. The learning view of Activity Theory

Activity Theory, also known as "Historic-cultural Activity Theory", was put forward by Vygotsky, a former Soviet psychologist, and gradually matured after being enriched and perfected by Leontiv, Rulia and others. Activity Theory is widely used in contemporary human activity researches and analysis, and is regarded as a theoretical tool to overcome the duality of mind and body in social science [19]. In the field of education, Activity Theory is often used in the studies of teacher learning and student interaction [20], [21]. Activity Theory holds that the interaction between people and environment is realized through activities, and people obtain cultural conditions and develop ability through activity system. As a part of culture, people also affect the development of culture. Only the behaviors that people strive to pursue and have clear goals can be called activities. Activities are composed of different behaviors and operations. The tools people rely on in activities include not only

material appliances and equipment, but also language, social customs, theories and other symbols [22], [23]. It can be seen that people interact with society and cultural situations through tools, symbolic intermediaries and cultural connotations to promote social development and knowledge generation.

Activity Theory brings a new perspective for researchers to study cognitive learning activities. According to Activity Theory, learning is not a mechanical transfer and passive acceptance of knowledge but a process in which learners promote personal mental development in the interaction between inner activities and the external environment, and the result of continuous interaction between people and the surrounding environment through tools. The "Zone of Proximal Development" proposed by Vygotsky has been widely used in the study of classroom teaching and the discussion of learning. Vygotsky believes that there are two levels of student development: the current level at which students can solve problems independently, and the potential level at which they can solve problems through teaching or with the help of others [24], [25]. The gap between the two levels is the zone of proximal development. The recent development area includes the gap between individuals in cognitive activities, the gap between individuals, and the gap between individuals and social culture. It is the interaction system between learners and the outside world in which people solve problems cooperatively.

The proximal development zone is not invariable; it is constantly generated and changed with the interaction between individuals in learning activities, and the purpose of learning is to continuously cross the old proximal development zone and constantly generate a new proximal development zone. In the learning process, individuals need to rely on various "scaffolds" built by teachers or peers to solve problems and successfully cross the zone of proximal development. The "scaffold" here is not a material scaffold in the physical sense, but refers to various interactive behaviors in learning activities, including communication, cooperation, guidance, practice, demonstration and other intermediaries. In general, Activity Theory regards learning as a system of interactive activities. To understand the learning process systematically and as a whole, learners are required to have various interactions in learning practice, which reflects the sociality and practicality of learning. This will help us to examine the shortcomings of current teacher learning and provide a theoretical basis for us to seek a more effective teacher learning model.

3.2. The teacher learning mode driven by "multi-subject needs"

According to the activity theory, it is found that the current situation of teacher learning is separated from teacher development needs, teacher training, and teaching practice. The reason is that teachers' learning process is artificially divided. Teacher learning is simply understood as the one-way transmission of knowledge and skills. The narrow view of learning believes that teachers can learn the corresponding theoretical knowledge by participating in various training, and can use the relevant theoretical knowledge to guide the teaching practice and solve the problems of education and teaching. It is believed that teachers can transfer relevant practical knowledge to their own education and teaching field through imitation and reference in mentoring systems, learning communities and on-site learning [26], [27]. It is believed that teachers can create teacher knowledge after reflection. However, from the actual situation, the effect of this mode of teacher learning is not very ideal. In order to improve the current reality of poor learning effect of teachers, we should effectively combine teachers' personal development, education and teaching practice problems, students' needs and teacher learning according to the core viewpoints of Activity Theory, and integrate teachers' needs, students' needs, school development needs, teachers' learning behaviors, learning communities and learning tools into a holistic activity system.

In the system of teacher learning activities, teachers are formed into a learning community, taking the problems generated in education and teaching practice as their learning tasks so that teachers can learn and carry out teaching practice in the learning community, so as to achieve the purpose of creating teachers' practical knowledge, solving problems in education and teaching practice, and meeting the development needs of students and teachers. This mode of teacher learning can be called "Teacher Learning Mode Driven by 'Multi-subject Needs." Activity is the basic analysis unit of Activity Theory, and the activity system consists of core components and secondary components. The core components are subject, object, and community, and the secondary components are tools, rules and division of labor, and the interaction between each component is the guarantee of the smooth development of activities. Drawing on the activity system structure diagram of Vygotsky, Leontiev, Rulia *et al.*, combining the existing research results and the basic implication of teacher learning driven

by “Multi-subject Needs”, the framework of teacher learning mode driven by “multi-agent needs” is constructed (see Fig. 1).

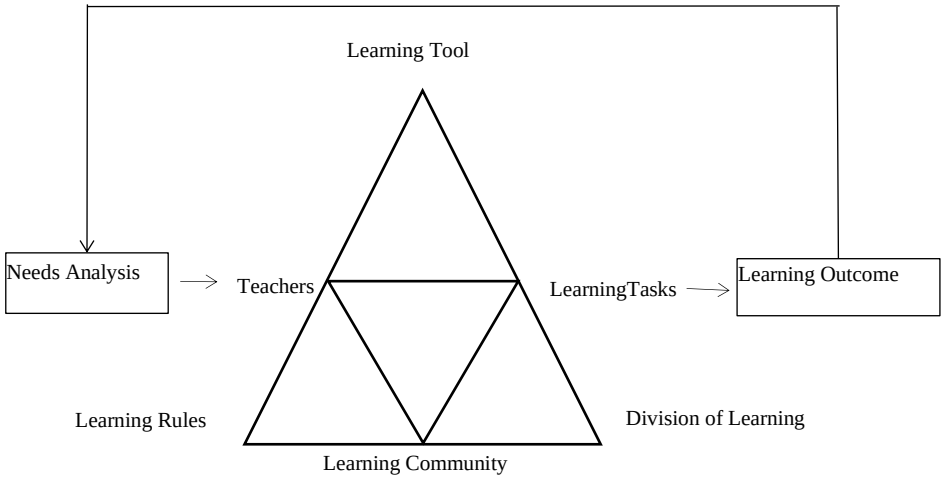

Fig. 1. Teacher Learning Mode Framework Driven by “Multi-subject needs”

As can be seen from the Fig.1, this learning mode is composed of three core elements: teacher, learning community, and learning content, and three secondary elements: learning tools, learning rules, and division of learning. Each element is interrelated to form the whole dynamic teacher learning system. In this mode, teachers are the main body of learning, the community is the driving force of learning activities, task is the carrier of learning activities, tools are the coordinating elements of learning activities, rules are the normative conditions of learning activities, and division of learning is an important operating form of learning activities. To be specific, as the subject of learning, teachers’ subjectivity is embodied in independently determining learning goals, developing and utilizing appropriate learning resources, choosing appropriate learning tools and learning tasks, and coordinating the division of learning and cooperation of the learning community in the operation of the learning activity system according to the actual needs of the development of themselves, students and schools. Teachers work and learn in real school situation and social environment, during which they must interact and communicate with students, school leaders, other teachers and other specific personnel. Teacher learning driven by “multi-subject needs” needs to build a learning community composed of teachers, students, school leaders and even parents. The building of communities of practice and the organizing of individual or group coaching, including peer coaching, seems pivotal to success [28]. This may also be an explanation of the positive outcomes of communities of learners in which teachers collaborate, as scholars studying teacher change emphasize [29].

Learning content is extracted according to the needs of teachers’ development, students’ learning and school development. Meeting the needs of multi-subjects is the driving source of learning activities. The development and utilization of learning tools is an important guarantee for the smooth operation of learning activities. Teachers’ learning tools include physical tools and cultural tools. Physical tools include environmental resources, learning materials, media tools, physical conditions, learning space, *etc*. Cultural tools mainly refer to community culture, such as the formation of cooperation, sharing, democracy, a pleasant cultural atmosphere among the members of the learning community and the positive mental state of each member to achieve the learning goal. The rules of the learning community can guide teachers’ learning activities, regulate collective interactive behaviors, and promote the healthy operation of learning activities. The formulation of rules should reflect the spirit of democracy and equal consultation, and the content of rules should reflect the common will and interests of all members of the community. Moreover, the feasibility and convenience of activities should be taken into account. Division of learning is an activity form to improve the effectiveness of teachers’ learning. The division of labor is to give play to the subjective initiative of learning subjects and avoid inefficient repetition. The division of learning should reflect the characteristics of specificity, effectiveness, interaction and development. Students need to communicate more with teachers and give feedback on their own learning needs. School leaders need to pay attention to the reasonable needs of teachers and students, help teachers review practical problems, and provide guidance in practice and theory improvement. The process of teachers’ learning

activity consists of three stages: pre-learning activity, during-learning activity, and post-learning activity. The pre-learning activity stage is the driving stage for teachers to carry out learning activities.

In this stage, teachers trigger individual or collective learning activities from the actual needs of themselves, students, or the school. Meeting the needs of multi-subjects is the motivation for teachers to carry out learning activities, and they formulate clear learning goals according to the needs of multi-subjects. Make use of the existing conditions of oneself and the surrounding environment or create new conditions according to the actual needs to pave the way for the smooth development of teaching activities. The during-activity stage is the main stage of the teacher learning activity system, which includes three core components: individual teacher, learning community, and learning tasks, and three secondary components: learning tools, learning rules, and learning division of labor. The post-learning stage is the third stage of teachers' learning activity system, which is the output and summary stage of teachers' learning outcomes. In this stage, teachers need to summarize and reflect on the activities of the previous two stages and give feedback on the results to the pre-activity stage of a new round of learning activities. Based on new needs and motivations, teachers need to formulate a new round of learning goals, create new learning conditions, trigger new learning behaviors, and carry out new learning activities, and so on. The interaction of the three stages makes teacher learning become meaningful learning. Meaningful learning is understood as a concept describing personally valued, rich, and worthwhile learning experiences from the perspective of the learner [30]. The teachers' learning behavior and effect are constantly improved and optimized in the cycle of the whole system.

4. The Promotion Strategies of Teacher Learning Mode Driven by "multi-subject needs"

The teacher learning mode driven by "multi-subject needs" integrates teacher learning with practice, combines individual learning with group learning, and combines learning activities with learning content, promotes the construction and development of teacher learning community, and guides teachers' learning from simple theoretical acceptance to practical observation. The construction of a teacher learning mode driven by "multi-subject needs" provides a new learning path for teachers, but the transformation from ideal to reality requires teachers to form a correct understanding of their own learning activities and external environment to provide effective support for teachers' learning. In order to solve the current difficulties, such as insufficient continuity of teachers' learning, weak awareness of learning reflection, insufficient pertinence of teachers' learning training, and lack of school learning culture, and promote the effective operation of teacher learning mode driven by "multi-subject needs," the following countermeasures are proposed:

4.1. Establish the concept of lifelong learning and promote teachers' continuous learning

Nowadays, all aspects of people's lives, work, and studies are constantly changing due to the rapid development of society and the acceleration of globalization, and the society we face is changing rapidly. No matter from the micro level of the individual, or the middle level of the organization, group, or region, or from the macro level of the nation or country, only by continuous learning individuals can calmly cope with the various changes and requirements brought by the development of the times. Lifelong education, lifelong learning and learning society have become important themes in education development and research. As adults, the subject knowledge accumulated by teachers before service is not enough to solve all the problems in today's educational situation. The deep integration of the Internet and education makes learning no longer limited by time and space. Ubiquitous learning is also more convenient. Students do not just acquire knowledge in the school classroom, they can receive knowledge and information from different channels. If teachers want to ensure that they are always giving students the right guidance in learning, they must continue to learn. In the digital age, online learning requires that learners cannot simply adopt the linear learning mode of "one teaches, the other learns". The development of the Times has also endowed teachers with more roles. Teachers are not only imparting knowledge but also partners, guides, and facilitators of students' learning. They should not only assume the responsibility of education and teaching but also undertake various tasks outside of teaching, such as home-school communication and coping with various inspections. In the implementation of curriculum reform aimed at developing students' core competencies, teachers should not only understand new ideas, learn new knowledge and skills, but also deal with various new problems in teaching practice [31]. The behavior of problem solving needs to be guided by the corresponding philosophy. Therefore, in the face of various requirements, teachers should consciously establish the concept of lifelong learning, constantly learn new knowledge, form

new skills, and realize self-sustainable development in order to cope with various challenges in life. Taking learning as a way of life and habit can promote the construction and formation of teachers' learning community.

4.2. Adhere to the self-orientation of learning, pay attention to the reflection and feedback of learning results

According to the teacher learning mode driven by "multi-subject needs", the teacher learning activity system consists of three stages: pre-learning activity, during-learning activity and post-learning activity. In the post-learning activity stage, teachers need to summarize and reflect on the learning results, examine the advantages and disadvantages in the learning activity process, and provide feedback on the summary and reflection results to the pre-learning activity stage of the new learning activity system so as to improve the pertinence of the new round of learning activities and provide a reference for optimizing the new learning activities. Confessore and Kops believe that teacher learning is not a simple acceptance and internalization of information but a process in which teachers constantly reflect and evaluate their own learning, constantly clarify learning goals, and adjust and optimize learning strategies and methods [32].

Therefore, teachers should realize that they are not only the learning subject in the learning activity system but also the thinker and evaluator of the learning activity process and result. Studies have shown that in learning, adults have independent self-concepts and can guide their own learning characteristics [33]–[35]. As adult learners, teachers have mature and stable personality characteristics and independent self-concept and have a clear understanding of their own ability and character, so they can arrange and regulate their own learning. In self-directed learning, teachers are oriented to meet the needs of students and their own development needs, have clear learning goals, and know clearly what to learn and how to learn.

On the basis of the analysis of learning needs of students and themselves, determine learning tasks, select or develop appropriate physical and cultural tools according to the learning resources needed to complete the tasks, strengthen goal orientation, clarify the phased and overall goals, formulate and debug learning plans, and ensure the effective implementation of learning activities. In the process of learning, teachers need to observe the learning behaviors and states of themselves and members of the community, and record, judge, evaluate and reflect on the learning behaviors of learners. Teachers also need to guide the development direction of learning behavior through critical thinking reflection and summary, adjust learning practice activities, and make their own and the community's learning activities a planned and consciously regulated process.

Teachers should also pay attention to reflection from the perspective of the correlation between practice and theory, find a breakthrough in solving practical problems from theory, and then rise from practical problems to theoretical discussion, so as to continuously develop their learning adjustment ability. On the basis of reflection, the original concept and cognitive structure are reconstructed. Teacher learning always includes the process of teacher self-regulation, self-evaluation and self-reflection. Every reflection will produce new problems, and teachers' existing knowledge system will also be updated in the continuous generation of problems [36]. Therefore, teachers insist on self-orientation of learning and pay attention to the summary and feedback of learning effect is the driving force to achieve effective learning.

4.3. Create a supportive and cooperative school learning culture, promote the sustainable development of teachers

Teachers' motivation and conditions for learning are diverse, with both internal needs and external support. The formation of teacher learning motivation depends not only on individual teachers, but also on social expectations and the construction of learning organizations in their environment [37]–[39]. As a subsystem of teacher learning activity system, school culture and environment can either create opportunities for teacher learning or hinder the development of teacher learning. At present, teachers' heavy workload and heavy work pressure are the main reasons that teachers have no time to pay attention to their own learning and professional development. The evaluation of professional title and performance appraisal lead to the utilitarian, superficial, inefficient and even ineffective learning of teachers. Therefore, building a supportive school learning culture is the key to break through the current learning dilemma of teachers.

First of all, leaders should focus on reducing the workload of teachers, so that teachers have more time to conduct researches about teaching and concentrate on learning. Leadership seemed to play an

important role in the achievement of positive outcomes in all domains [40]. Schools can reduce the burden on teachers by letting special affairs in schools be handled by special personnel, reducing teachers' non-teaching tasks, and allocating work reasonably. Secondly, optimize teacher management and improve the evaluation system. Schools need to establish a developmental teacher evaluation system, and urge teachers to change the utilitarian learning view for professional title evaluation and performance evaluation, and use the evaluation model combining group assessment and individual assessment. In addition, the school also provides more than one-time training support from the perspective of student development needs and teacher professional development. Schools also need to strengthen support for teachers' learning, make overall plans, provide targeted and supportive training according to students' learning needs and teachers' development rules and needs; build a platform for teachers at different development stages and with different needs for communication; display and three-dimensional development; and promote teachers' progressive and sustainable development.

Learning is a process of individual experience as well as an interactive activity with others, groups and the environment. The practice of teacher learning mode based on "multi-subject needs" requires effective interaction and cooperation among members of the learning community. In cooperative learning, members of the community provide each other with learning support [41]–[43]. This kind of cooperation not only includes cognition and rationality but also has important emotional characteristics. Both teachers and students have practical knowledge, and the cooperation between them is conducive to the analysis and solution of teaching and learning problems and also promotes the formation of harmonious and mutual trust between teachers and students. The teacher learning mode driven by "multi-subject needs" provides members of the learning community with the opportunity to share practical knowledge and build a cooperative community culture, and provides a good cultural tool for the effective operation of the teacher learning system. Therefore, in the reciprocal learning exchange and cooperation, the members of the community can not only fully express their own views, but also express their own views on the views of others; learn from each other's strengths and make common progress in the interaction, and truly establish a "learning and practice community", so that teachers and students can move from marginal participation to positive practical actions. The expectations associated with communities and networks is that active collaboration leads to learning of teachers, and ultimately to improved student learning, also in the wider community in which the participating teachers work [44]. Therefore, if schools are committed to creating a collaborative campus learning culture, it will help promote the sustainable development of teacher learning.

4.4. Clarify the purpose of learning and emphasize the localization and normalization of teachers' learning

The traditional teacher training is inaccurate in the orientation of teachers learning objectives, resulting in the learning content is often too theoretical. The content design that avoids the problems of first-line teaching is difficult to enter the heart of teachers and arouse their inner passion for learning. The lack of equal interaction in teacher educators' presumptive learning content design often frustrates teachers' learning initiative, while participating teachers attend training with the mentality of completing tasks, resulting in a formalization tendency in their own learning. Already in 1904, Dewey (1904) noted this gap between theory and practice, and he discussed possible approaches to bridging it [45]. Teacher learning should be based on the field of school educational to realize the localization of teacher learning. Teachers' practical knowledge depends on the situation, and teacher learning has real significance only when it takes place in the real teaching situation [46].

The problems of education and teaching arise in practice, and the solution of the problems also depends on practical wisdom, so the teacher learning should be context-oriented and practice-oriented. Teacher learning needs to be based on the education and teaching problems in the school field, so as to meet various urgent and reasonable needs of different subjects. Educationalists need a more realistic vision, which means that not only practice, but most of all the human beings working in the contexts of their schools become the starting point for change processes [47]. In the process of interaction and communication, members of the community need to work together to seek solutions to problems and resolve contradictions. Teachers learn in teaching practice, practice in learning, and integrate work practice with study. Schools should pay attention to problem-oriented teacher learning activities, carry out thematic learning with embedded practical problems, and make the learning process a process of problem solving and ability improvement, so as to help teachers improve their professional competence and practical ability.

5. Conclusion

Teacher learning is not only to promote the professional development of teachers, but also to improve the quality of life of students. Therefore, teacher learning should accompany their educational career, and even become their lifelong conscious action. Today's education world is changing rapidly, complex, and changeable, teachers need to constantly update the teaching views and knowledge system, and to achieve the renewal of teachers' cognitive structure and teaching concepts; teacher learning needs to become a normal activity. According to the teacher learning mode driven by "multi-agent needs", schools should integrate teachers, students, and school leaders into the learning community according to the actual needs. In the learning activities, the members of the learning community communicate with each other and work together to complete various learning tasks. After the completion of the phased learning activities, the teacher learning community should continue to cooperate, summarize, and reflect on the learning activities, and feedback to the new round of learning activities to adjust and optimize the implementation of the new round of activities, and so on. The needs of different subjects in the school have always existed, and the problems of teaching practice will continue to arise, so learning should become a normal activity of teachers. There is a general consensus in the educational community that "learning to learn" is an important educational goal. The above construction of teacher learning mode driven by "multi-subject needs" according to Activity Theory only provides an alternative perspective for teachers to carry out practice-based learning. Activity Theory focuses on the analysis of the operating mechanism of teacher learning in the learning activity system, which can provide a basis for us to better improve the current situation of teacher learning.

Acknowledgment

The author would like to thank School of Economics, Guangxi Minzu University and Department of Education Science, Nanjing Normal University, China for the granted supports.

Declarations

Author contribution	:	YY, JX, ZN have equal contributions to the paper. All the authors have read and approved the final manuscript.
Funding statement	:	No financial support for the research.
Conflict of interest	:	The authors declare no conflict of interest.
Additional information	:	No additional information is available for this paper.
Ethics Approval & Informed Consent Statements	:	Not applicable.

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