Research on the Construction of Teacher Professional Learning. Community in the Web 3.0 Era: Based on the "Spiral of Silence" Theory.

Junjiao Zhang [1]

ABSTRACT

China's teacher education reform has always advocated the establishment of a teacher-professional learning community to promote teacher professional development and school progress. In the Web 3.0 era, the increasingly open, secure, and fair network has created conditions for the teacher professional learning community to conduct data confirmation. However, in China, the phenomenon of a "silent spiral" has emerged in the professional learning community of teachers, that is, the inferior opinions of teachers in the professional learning community turn to "silent", and the superior opinions shout, which to a certain extent hinders the creation, protection, and sharing of teacher metadata, affects the development of data right confirmation in the field of education, and slows down the pace of teacher education practice. This study mainly focuses on the value of building a Chinese teacher professional learning community in the Web 3.0 era, the specific difficulties and reasons, and how to develop a Chinese teacher professional learning community in the future. This study mainly adopts the method of documentary review and draws on the "spiral of silence" theory, which regards the expression of opinions and the spread of "silence" as a spiral process of social communication, and influences and restricts public opinion by creating an "opinion environment". It is found that under the background of the Web 3.0 era, there is an information cocoon in the professional learning community of teachers, and teachers are affected by the diversity of information. Teachers fear independence and generally produce a herd mentality. It is easy to ignore the disadvantageous climate in the professional learning community of teachers, resulting in the continuous silence of teachers. In addition, teacher groups tend to be too stressed and unable to resist the opinion environment. Therefore, the research draws the following conclusions, the construction of teacher professional learning community should adhere to positive guidance, cultivate the correct learning concept, and build the core value concept; Strengthen teachers' group consciousness, establish a common vision, and make teachers have a sense of belonging to the community; Coordinate the "online + offline", build a learning mechanism, and salvage the silent voice of the group in the professional learning community of teachers; Provide supporting conditions around the key development issues of the community to promote the growth of opinion climate.

Keywords: In the Web3.0 era, teachers' professional learning community, the spiral of silence.

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[1] Doctoral student, China Institute of Education Policy, Faculty of Education, Beijing Normal University, Beijing, China, e-mail: gzyxjudy2022@163.com

1 INTRODUCTION

Since Hodder first proposed the concept of a "teacher-professional learning community" in 1997, China's teacher education reform has advocated the establishment of teacher teacher-teacher-professional learning community to promote teacher professional development and school progress. Teacher Professional Learning Communities are self-organized groups of teachers based on a common vision and goal to promote teacher professional development through activities such as shared collaboration, communication, and dialogue (Hodder, 1997). A teacher's professional learning community is an important way to realize a teacher's professional development (Du & Chang, 2020), and a teacher's professional mutual assistance should become the basic communication mode and professional status of teachers. To bring more happiness to teachers is one of the important roles of shared leadership (Chris & Nathaniel, 2022), and it is also one of the goals pursued by the teacher professional learning community. However, teachers do not pay enough attention to professional communication, often lack cooperation and sharing culture (Chang, 2007), and there is a gap between common affairs and professional sharing (Li & Wang, 2022). There is a phenomenon of "silent participation" under the hegemony of professional discourse, the communication between primary and secondary school teachers and university experts is insufficient, the phenomenon of "being persuaded" and "being brainwashed" is serious (Bao & Li, 2019), and the lack of discourse power in the field of young teachers in universities and colleges has become top of silent aphasia (Cai et al., 2018). The loss of teachers' "right to speak" leads to a state of "staff silence" (Li & Lv, 2018), with various behaviors of obedience and abandonment.

With the rapid development of the three generations of the Internet (Web 1.0 era -Web 2.0 era -Web 3.0 era), the development of the teacher professional learning community has ushered in different changes. The first generation of the Internet (Web 1.0) from 1994 to the present, is the PC (personal computer) Internet, which improves the efficiency of global information transmission, and reduces the threshold of information access. The advantage of the first generation of the Internet is the efficient transmission of information, so network news, online search, E-mail, instant messaging, e-commerce, MMS, RBT, client and web games, and other applications are popular, and Internet teachers are quickly connected. However, in the Web1.0 era, teachers passively accept the content of the Internet and rarely participate in the construction of the Internet in depth. The second generation of the Internet (Web 2.0) from around 2008 opened the curtain, is the mobile Internet, today is still wonderful. The "always on" and "anytime, anywhere" features of smartphones have made mobile Internet an important part of many people's lives. The concept of "surfing the Internet" gradually disappeared at this stage, and teachers lived in the network all the time. Social relations were introduced to the Internet in large numbers, and more new social relations were established. Smartphones have popularized all kinds of sensors, accelerated the mapping of the physical world to the Internet to achieve digitalization, and also allowed various services on the Internet to be applied to social life, and online and offline began to interact closely. In the Web 2.0 era, teachers can create content on the Internet independently, but traffic entry and profit distribution are controlled by various Internet giants, and privacy and security issues are difficult to protect. The third generation of the Internet (Web 3.0) is a decentralized Internet that aims to create a new system of contracts and upend the way individuals and institutions reach agreements. Web 3.0 is a replica of the decentralized

infrastructure of the first version of the Internet, Web 1.0, which featured teachers setting up their blog sites and RSS feeds, on top of that, Web 3.0 combines the rich interactive experiences of Web 2.0, such as social media platforms. The combination of Web 1.0 and Web 2.0 has resulted in a digital ecosystem of Web 3.0, where teachers can truly own their data and transactions are secured by encryption. Instead of trusting brand endorsements, teachers can rely on determined software code logic to enforce protocols rigorously. In the Web 3.0 era, teachers will become the real creators and builders of the Internet, and the data information and data assets created by teachers will be owned by themselves. In other words, Web 3.0 is a more open, fair and secure web. The network form of Web 3.0 is not a simple upgrade of the current Web 2.0, the core problem it needs to solve is mainly the distribution of platform benefits, and every individual participating in Web 3.0 will enjoy their dividends.

Web 1.0 is the first generation of the Internet, developed in 1994, mainly refers to the personal computer, its advantage is the efficient transmission of information. However, in the era of Web 1.0, teachers mainly passively accept content on the Internet and rarely participate in the construction of the Internet. Web 2.0 is the second generation of the Internet, starting around 2008, with a focus on the mobile Internet. At this stage, "surfing the Internet" gradually disappeared, teachers lived in the network all the time, social relations were fully introduced, and more new social relations were established. In the era of Web 2.0, teachers can create Internet content independently, but traffic entry and profit distribution are controlled by Internet giants, and privacy and security issues are difficult to guarantee. Web 3.0 is a decentralized Internet that aims to create an entirely new system of contracts that will upend the way individuals and institutions reach agreements. Web 3.0 builds on the decentralized infrastructure of Web 1.0, combined with the rich interactive experiences of Web 2.0, such as social media platforms. The combination of Web 1.0 and Web 2.0 forms the digital ecosystem of Web 3.0, where teachers can truly own their data, and transactions are protected by encryption. Teachers no longer need to rely on brand recognition and can rely on determined software code logic to strictly enforce protocols. Web 3.0 is a more open, fair, and secure network, and teachers will become the true creators and builders of the Internet, owning the data and information assets they create.

Entering the Web 3.0 era, the open, safe, and fair network has created conditions for the creation, protection, and sharing of metadata in the teacher professional learning community. The development of the teacher professional community goes beyond the development limitations of the web1.0 and web2.0 eras, and teachers achieve professional development through self-creation and mutual sharing. However, in the Web3.0 era, China has seen the phenomenon of a "silent spiral" in the professional learning community of teachers, that is, the inferior opinions of teachers in the professional learning community turn to "silent", the superior opinions shout and the exploration and information sharing in the field of metadata are hindered, which to a certain extent hinders the development of teacher education practice. The research on teacher professional development in the Web3.0 era focuses on teacher information training (Li & Chen, 2018), the construction of school-based training platforms (Liang, 2013), and the construction of a teacher professional development resource base (Xing & Yao, 2009), but there is a lack of research directly focusing on teacher professional development. The discussion on the group vocalization of the teacher-professional learning community is conducive to enriching and improving the existing research and giving full play to the value of the teacher-professional learning community.

This study draws on the "spiral of silence" theory, which holds that mass media has a powerful effect in influencing public opinion, and it calls the mechanism that plays an important role in the generation of public opinion the "spiral of silence". The basic point of view of the theory is that the expression of individual opinions is a social psychological process, and the expression of opinions and the diffusion of "silence" is a spiraling social communication process, and mass communication influences and restricts public opinion by creating an "opinion environment". This study discusses the construction of teachers' professional learning community in the Web 3.0 era and specifically examines the phenomenon of teachers' inferior opinions turning to "silence" and superior opinions Shouting in the professional learning community. Applying the spiral theory of silence to the specific problems of the teacher professional learning community, this study focuses on the following problems: 1. What is the important value of teachers' professional learning community in the era of Web 3.0? 2. What are the dilemmas of teachers' professional learning community? 3. What are the paths of teachers' professional learning community? The solution and breakthrough of the above problems are related to the effectiveness of the learning and growth of the teachers in the new era, and more related to the quality of the construction of China's education power.

2 CONSTRUCTION SIGNIFICANCE: SYNTHESIS OF THEORY AND PRACTICE

2.1 Implement teacher development policy requirements

In recent years, the Chinese government has issued several policy documents to comprehensively deepen the reform of teacher-team construction and promote the revitalization of teacher education (CPCC & State Council, 2018; Educational Ministry et al., 2018). The policies have proposed the establishment of learning communities, such as teaching and research departments, teacher education and teacher communities, tutorial systems, and the college system. These policies aim to create teacher-student learning, living, and growing communities that are conducive to teacher professional development in the information age. One significant policy introduced in 2019 recommended establishing a research and training community based on the school informatization development plan (Educational Ministry, 2019). In 2020, the Ministry of Education and other six departments proposed the Opinions on Strengthening the Construction of Rural Teachers in the New Era, which emphasized the need for teachers in rural schools and normal colleges to form a learning community, research community, and development community (Educational ministry et al., 2020). The above policies issued by the Chinese government indicate that it is very necessary to carry out research on teacher professional learning communities in the Web 3.0 era. At the same time, the research should also fully consider the specific requirements of the above policies, so that the research can be more rigorous and standardized. The construction of teacher-professional learning communities can lead to greater teacher collaboration and professional development, ultimately promoting the development of a better-educated society and meeting the challenges.

2.2 Conform the trend of the era of network self-creativity

The Internet has experienced the evolution from Web1.0 to Web2.0 and Web2.0 to Web3.0 (Sun, 2009). The emergence of completely independent APIs, the creation of OpenID, the standardization and structuring of micro-content, and the existence of associated data have made the Internet a fully open environment (Xiang et al., 2012). In the Web 3.0 era, media rights are transferred to the stage of user creation, user ownership, and user participation in distribution. The main task is "read + write + own", which is essentially a rights-confirming process, emphasizing that "build" is what you get. The Web 3.0 era will highlight the value of network data and can turn data into assets back to the hands of data producers. In this process, the media has penetrated the social fabric, the society has entered the stage of deep media and begun to de-organize and re-organize. The essence of "Web 3.0" is deep participation, life experience, and the value of user participation (Liu, 2008). The Internet can connect both "information" and "value" (Yu, 2022). Web 3.0 has achieved many breakthroughs in technology. It takes "personalization" as the center, emphasizes user participation and user experience, and provides a wide range of services to provide deep human services (Yu & Chen, 2019). Web 3.0 "provides customized services" for the professional learning community of teachers, that is, using crowdsourcing technology, learners can realize self-service without the perception of data annotation in the process of online learning. In the context of the Web3.0 era, the teacher professional learning community especially emphasizes the emotional calculation degree of users(Zhai et al., 2022), which is conducive to responding to teachers' concerns about self-progress and common development and activating the development motivation of teachers.

2.3 Solve the practical problem of teacher-group silence

Paying attention to teachers' expression of problems related to curriculum reform is related to whether the problems in the process of reform can be creatively solved (Yan & Zhou, 2008). However, the atmosphere of equal communication among teachers is missing, and communication between teachers with different qualifications, ages, and professional abilities often presents the phenomenon of "up to down" and "unilateral speech". Teachers will keep silent consciously or unconsciously and gradually become the silent majority. The regular teaching and research activities of the school lack substantive exchange and communication, only reflect the surface harmony, and generally appear in the situation of "going through the motions" and "saying one thing" (Lin & Wang, 2009). Some teachers have low participation in the organization and sense of belonging and a lack of discourse power. The current rigid educational discourse system and the lack of discourse space of free speech power in schools have imperceptibly affected the expression and behavior of teachers, so that teachers are forcibly shaped in the existing discourse space, and their "language habits" are created in such circumstances and living conditions (Yang, 2008). This study uses the spiral theory of silence to explore the deep causes of teacher-group silence, which is conducive to promoting the development of a teacher-teacher-professional learning community and providing a new perspective and method for related research on teacher professional development.

3 CONSTRUCTION DILEMMA: AFFECTED BY FOUR FACTORS

3.1 Information cocoons appear, resulting in differences in teachers' information

Nowadays, the abundance of information leads to information overload and the formation of "information cocoons", making it difficult for teachers to search for and select information. As a result, the premise of a "silent spiral" is formed, where people's choices are negatively related to their freedom. The diversity of network information affects the dominant position of core values and creates a situation where teachers only perceive the wrong "opinion climate" when exposed to fresh experiences or debates. In the cocoon room, under the dual influence of diversified information selection and relatively insufficient information discrimination ability of teachers, individuals tend to choose the information that is consistent with their cognition but also tend to choose multiple information, resulting in the fragmentation and superficiality of teachers' knowledge system, which is difficult to transform into the ability and value of analyzing and solving specific problems (Xie, et al., 2024). This, in turn, makes it difficult to develop the ability to analyze and solve concrete problems and values. The information cocoon often results in a one-sided cognitional view and promotes opinion opposition, leading to a variety of contradictions (Sun, 2024).

3.2 To fear independence, teachers generally produce a herd mentality

The teacher professional learning community is a small society, there is close interaction between teachers' frequent contacts, teachers interact, respect and recognition, and expectations are not "isolated", appeared a herd mentality (Ma, 2024). Conformity is one of the common phenomena in social psychology, in real life is a "parrot" phenomenon such as "go with the flow", everyone cannot do without the influence of the surrounding environment. As indicated in the "spiral of silence" mechanism, individuals' expression of their own opinions is a psychosocial process, and when they find themselves in the "majority" or "dominant" opinion, they tend to express their opinions. Under the influence of social psychological effects, collective silence can also occur, the individual has a fear of social isolation, and when the individual is excluded from his group, he often experiences great pain. But people can find links to individual and collective bonds, feeling some of the characters, behavior way, and ideas are for and against environmental capacity, and respond accordingly to these phenomena, the change of the ability to adjust their behavior, not to be isolated.

3.3 Ignore the disadvantageous climate, resulting in persistent silence

In most situations, to obtain a greater sense of identity from their environment, people will more or less follow the direction of the mainstream opinion in the environment and ignore the disadvantageous climate. According to the "spiral of silence" theory, in the community environment of teacher professional learning, every teacher has his or her own "quasi-sensory statistics" ability. According to the "quasi-sensory statistics", teachers in the community judge the opinion climate of the community, acquiesce in opinions and blindly follow them. When most teachers first joined the community, they held a serious, responsible, and conscientious attitude, and then measured and judged the overall situation in the specific work practice, and selectively determined their attitudes and methods. As time goes by, teachers will constantly judge various situations around them, focus

their attention on judging strong opinions, and then choose their attitudes and behaviors. Such a cycle will continue to ignore the disadvantageous climate, strengthen the "strong opinion", and fall into the "spiral of silence" phenomenon.

3.4 The group pressure is too large to resist the opinion environment

The voice of teachers in the professional learning community is affected by many factors, and they cannot resist the "public opinion environment", mainly considering the following three reasons. One is the pressure brought about by "strong relationships". The online communication of teachers in the Community relies on WeChat, Weibo, and other platforms to express opinions and disseminate information with their real names or online identities in daily learning and exploration, especially the "opinion leaders" formed among leaders and teachers in various circles, whose opinions and ideas will directly influence other teachers' independent analysis and online expression. The second is the pressure brought by information transparency. China has developed into a network country with the largest number of Internet users in the world, and the openness and transparency of teachers' information enable teachers' personal information to be retrieved. If the teacher speaks slightly improperly or expresses views that are different from the dominant opinions, the speaker is easily concerned, besieged, and sometimes even touches the moral bottom line. The third is the impact of group belonging. When discussing teacher professional development events, teachers will evaluate the psychological pressure of opinion climate on individuals, and then decide whether to make comments and what comments to make. Especially in the "principal responsibility" school teacher professional learning community, the involvement of the principal is likely to weaken genuine dialogue and reflection between teachers and other colleagues(Zheng et al.,2022). Therefore, in actual life, the views expressed by teachers are mostly consistent with the mainstream views of society, while the views inconsistent with the mainstream views of society are often ignored or not expressed.

4 CONSTRUCTION PATH: CONCEPT GUIDANCE AND MEASURES FOR IMPLEMENTATION

4.1 Adhere to positive guidance, cultivate correct learning concepts, and build core value concepts

4.1.1   Improve the quality of teachers and emphasize active guidance

Teachers' professional learning has initiative, continuity, and lifelong nature, emphasizing continuous self-reflection, grasping the core points of education, and improving their comprehensive quality (Bi & Zhang, 2019). Teachers should conduct self-care and professional development, be the soul of ideals and beliefs, and the disseminator of knowledge, independently seek and expand professional development paths, formulate and gradually improve personal growth plans, clarify specific behavioral points, and constantly reflect, hone and learn from experiences in activities, scientific research, and communication. As the subject of teacher image construction, teachers need to realize that image construction is a long-term planning process. Only through the establishment of accurate goals, and comprehensive and meticulous planning and implementation, can they truly

realize the realistic construction of an ideal teacher image by taking the initiative and persevering in self-improvement (Guan, 2011).

4.1.2   Establish core values and adhere to people-oriented

The teacher professional learning community is the cradle of continuous cultivation and training of excellent teachers. It is necessary to unify the core value concept of the community with the socialist core values and the fundamental task of cultivating people with virtue, respecting the development law of society, people, and education, and constructing a value concept system that develops with The Times and society. Adhere to the responsibility as the first, committed to training educators to take on the great responsibility of national rejuvenation, so that teachers have a strong sense of value, the formation of respect, care, and understanding of the atmosphere. Adhere to the cooperation-oriented, emphasize the service for the development of the community, constantly shape and condense the spirit of publicity, solve the actual needs and concerns of teachers, and provide teachers with more happiness, security, and a sense of identity. Adhere to personality development as the foundation, grasp the personalized law of teacher training, take teacher development as the starting point and landing point, and fully consider, respect, and guide the teacher's personality needs

4.1.3   Uphold community thinking and focus on rational exchanges

Community thinking is holistic thinking based on the win-win situation of teachers to seek common development. It realizes the core deconstruction and paradigm transformation of teacher cooperation, realizes the creative transcendence of teacher cooperation development, and is the basic concept paradigm and fundamental value to achieve teacher growth. Improve the understanding of the role of the community, grasp the essential connotation and core meaning of the community, and strengthen the understanding of the value significance. Actively change the traditional concept of cooperation, rationally communicate based on equality and democratic code of conduct, constantly strengthen the vitality and vitality of teacher cooperation in social interaction, timely adjust the community strategy, and recognize the complementary characteristics of the community. Teachers should communicate rationally based on equality and democratic rules of conduct, allow members to share certain common values, and encourage internal organizations to constantly dissolve and reconstruct new communities. Guide teachers to unify their own ideological cognition and practical behavior with the ideological principles and specific requirements of the community, and correctly deal with the coexistence of harmony and conflict in the process of communication.

4.2 Strengthen group consciousness, establish a common vision, and provide group belonging

4.2.1   Condense the group spirit and carry forward the cultural core

The common practice activities of groups make individuals choose to divide themselves into certain social groups. Teacher identity is the professional regulation of individual teachers and the professional community of teacher groups, with its ethical norms and internal similarities. The same type of "perceptual activities" that individuals in a group engage in make the group form an essential definition, and then form a shared vision with certain homogeneity based on similar emotional experience and common experience in the group, which is the logical starting point of group spirit. Re-integrate the value and strength of the learning community, provide teachers with a cultural system and value system in line with the teacher learning community, and provide teachers with

spiritual welfare. Excavating the culture of "collectivism" and "mutual assistance and mutual trust" of the community, showing the style of the teacher professional learning community, constantly inheriting and carrying forward this cultural core in practice, and actively reflecting the social, situational, and dynamic characteristics of the teacher professional learning community.

4.2.2   Explore individual goals and promote unity of vision

The identity orientation of teachers in the professional learning community includes two trends: individual independence and group belonging. Teachers complete identity construction through individual goals in the community. The ideal state of the teacher professional learning community is that the common goal of the cooperative subject and the individual goal are dialectically unified in the community life practice (Pan & Wu, 2022), the individual self and personality can get the true expression, and the individual as the subject goal can be developed (Wang & Zhang, 2008). Correctly grasp and handle the mutual development relationship between individual teachers and the community, effectively enhance individual identity with vision unity, promote individuals to transmit social practice value in a wider range, and jointly promote the development and prosperity of the community (Peng, 2017). In the overall goal design, try to overlap with individual goals, and try to protect the interests of most individuals. Formulate community goals, provide important guidance for important matters, understand all relevant human, natural, and social resources of the community, pay attention to the effective participation process of members, provide teachers with personalized development opportunities and space, and stimulate their enthusiasm to integrate into the community construction.

4.2.3   Advocate democratic dialogue and multi-directional communication

Only based on equal and comprehensive dialogue and communication, and from the traditional one-way top-down transmission to two-way interactive communication, can the teacher professional learning community achieve democratic dialogue based on consultation. The Democratic dialogue begins with the interpersonal relationship of trust, highlighting the "people-oriented" and "fair and harmonious" atmosphere, emphasizing the exchange of views and emotions among individuals, consultation and communication, mutual understanding and consensus, giving play to the initiative of teachers' independent participation, and emphasizing effective communication and communication among teachers. Uphold an open and inclusive attitude, emphasizing mutual appreciation among teachers, breaking the relatively closed, competitive, and isolated relationship (Hargreaves, 2000), and creating an atmosphere of democratic dialogue. The teacher community should be considered in a larger system, actively look for external forces, uphold the thinking of "we" rather than "I", and constantly reconcile the interesting game between different teachers in the flow, to maximize the efficiency of teacher flow. Teachers become the subject of free speech, and realize the resistance to authoritative discourse in a vocal way, breaking through the "silent discourse", avoiding being suppressed by endless "customary dialogue", and emphasizing the autonomy of speech.

4.3 Online as a whole, make learning mechanism, the salvage group silent voice

4.3.1   Focus on cooperation and optimize the interactive environment

The environment of online and offline learning communities is the result of multiple superpositions, and the two mutually benefit and symbiosis in the integration, realizing the collision, enrichment, and generation of multiple resources. Make full use of the integrated field, achieve online and offline co-existence, and mix "formal" and "informal" learning environments. Online teachers can understand the use records, association, and evaluation records of learning content, sort out learning blind spots, preferences, and states through network records, and then adjust and extend relevant content accordingly. Offline, we invite professors from well-known universities at home and abroad to give lectures and guidance regularly, and give teachers high-level guidance; Initiate national, provincial, and district school research projects, and provide institutional support and supporting research funds. Teachers become independent learning investors, use offline and online resources to plan paths for their professional development, promote knowledge exploration, processing, and creation in an interactive environment, and become knowledge integrators in the information age.

4.3.2   Promote internal standardization and empower individuals

It is necessary to pay attention to the self-order of the group and promote the internal standardization of the community. Joint action has the characteristics of distributed leadership, leadership not only belongs to a person or a relatively "high-level" group, but due to the complexity of work, the realization of work responsibility needs the action of a group of people (Stoll et al., 2006). It is necessary to formulate management rules, harmonize the relationship between teachers, promote the communication and communication of members of the community to be more convenient, and promote the communication and interaction of teachers in the community to be more standardized. The school system establishes relevant communication and cooperation, management and operation, reward and assessment mechanisms, standardizes and realizes information communication and emotional exchange among teachers, and pays attention to principal constraint and rule guarantee. In the process of system construction, attention should be paid to being specific and operable, such as determining the organizer of the learning community, discussing the implementation standards of activities, and regularly organizing and carrying out orderly research on related projects, topics, themes, and problems.

4.3.3   Emphasize knowledge sharing and set a model for cooperation

Teachers' knowledge sharing is a complicated activity, especially teachers' tacit knowledge sharing will be affected by many factors such as individual interest expectation, subjective expectation, and interpersonal relationships (Zhao, 2020). Teachers are encouraged to transform tacit and tacit knowledge into explicit and open knowledge, expand the scope of knowledge sharing, and realize the union of teachers' learning communities in different grades, schools, and regions. We attach importance to the leading role of core figures in the process of knowledge sharing and set up full-time teachers who are responsible for the management of knowledge resources in schools to centrally collect and store teachers' knowledge in a bottom-up way. Through the teacher-apprentice interaction of "bringing the old with the new" and the famous teacher studio of the backbone teachers, we

establish a stable sharing relationship within the school with the help of the core figures and finally form a typical model of promoting teachers' knowledge sharing.

4.4 Around the key issues, support conditions, promote the opinion climate to grow

4.4.1   Attach importance to agenda setting and tell interactive stories well

Follow the laws of education and the goal of cultivating people, accurately focus on the hot spots of education development in the current period, combine the content of teacher development, and cite real-time and vivid examples to set community "issues" with purpose and focus. To enhance the attractiveness, influence, and affinity of the content of community discussions around the setting, leading, and expression of issues. Let feelings and a sense of responsibility become the constant theme of the community, adhere to the correct orientation, let teachers feel the temperature and quality of the issue, spread the mainstream voice, avoid irrational public opinion, and use the issue to shape the opinion climate, and mobilize public emotions. Based on practical investigation, the correct voice and rational agenda-setting should be carried out. Both new media and traditional media should give full play to their respective advantages in technology and resources, truthfully reflect the truth of objective facts to the greatest extent, and earnestly fulfill their public responsibilities of information dissemination and public opinion guidance.

4.4.2   Create a metadata database and set up a protection network

Meta-database is a powerful tool that enables the organization, storage, retrieval, and sharing of information through intangible space. In the field of teacher professional development, it is critical to leverage existing resources and emerging technical concepts to jointly establish a teacher professional learning community comprised of public, private, and consortium databases. The public database, accessible to any teacher in the world, is a completely decentralized database vulnerable to attacks by hackers. Private databases, on the other hand, allow for greater technical protection of user privacy and personal data. The consortium database is managed by multiple communities, enabling the establishment of consensus via pre-designated nodes. Finally, the alliance database is a partially decentralized database that combines the technical advantages and security features of private and public databases. By making full use of meta-databases and deploying these different types of databases based on decentralization, node access, and consensus mechanisms, we can revolutionize teacher professional development. Through remote login, simultaneous sharing, and enhanced information availability, we can empower teachers and facilitate their growth as lifelong learners.

4.4.3   Provide multiple interactive platforms and smooth speaking channels

The Teacher Professional Learning Community emphasizes that everyone has a "microphone", and the platform can build a voice channel to effectively warn public opinion and correct the deviation of online public opinion in expressing social public opinion. Individuals can freely express uncertainty, explore ideas, and state and withdraw opinions on the platform. People may take risks or engage in challenging discussions that push them to deepen their understanding and try new practices. Construct feedback channels, use the financial media Information Center to find potential demands or contradictions of teachers through technical means such as a public opinion monitoring system, open up feedback channels of traditional media, urge media to speak correctly and abide by professional

norms, and directly solicit public opinions to promote community optimization through professional reports. Schools should also take the initiative to build platforms and provide support such as educational expert resources, educational technology carriers, and learning knowledge base resources to ensure the effective development of daily teaching and research activities in the community.

5 CONCLUSION

In this study, I employed a literature review approach and applied the "Spiral of Silence" theory to investigate the value, challenges, and developmental pathways of building professional learning communities for teachers in China in the Web 3.0 era. The significance of teacher professional learning communities in Web 3.0 highlights their role in implementing relevant policies, aligning with the trends of innovation in the digital sphere, and addressing the issue of silence among teachers. The research revealed information cocoons, conformity tendencies, and negative climates within these communities. The conclusions suggest that the construction of professional learning communities for Chinese teachers should emphasize positive guidance, strengthen collective awareness, amplify voices that are often silenced, and focus on key developmental issues. This study contributes to enriching the research on teacher learning communities and could pave the way for further exploration of educational themes among teachers in the Web3.0 era. It recommends developing a theoretical model and mechanisms to counteract silence, guided by the "Spiral of Silence" theory, to enhance practical improvements in the future.
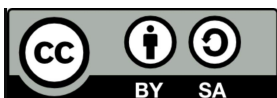
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