Research on the Construction of Community Education and Learning Community in the Era of Big Data

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Abstract. In the era of big data, the internal structure of the community education and learning community should be balanced and open, and the education management should be standardized and orderly. However, in reality, there are many problems in the construction process of community education and learning communities, such as a simple structure of learning communities, a single and scarce environment, and arbitrary educational management. Nowadays, community education construction should focus on promoting the change of internal mechanism, exploring community learning content, constructing the new O2O learning forms and enhancing the learning motivation of core members. Only by building a good environment for the entire learning community, optimize resource allocation and build a good ecology, can we promote the construction and development of community education and learning communities.

Keywords. Big data; Community education; Learning community

1. Introduction

Currently, the combination of big data and education is a trend that will continue to have a profound impact on many aspects of the education field, which provide educators with refined and intelligent management, and add differentiated and diversified teaching resources. The Urban and Rural Community Service System Construction Plan (2016-2020) has pointed out that it is necessary to overall develop urban and rural community education, strengthen the information construction of urban and rural community services, support urban and rural community organizations development, and form a diversified and three-dimensional mass group service pattern[1]. Therefore, community education should be better integrated with big data. The effective integration of community education and big data can better play the role of educational resources and teaching, and build the ecological construction of community education. And with the advantage of big data, we can build an open and interactive community education learning community so as to better develop community education.

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2. The connotation of big data era and community education and learning Community

The era of big data is an information age based on the extensive collection of data resources through new generation technology channels such as the Internet of Things and the Internet, which involves data storage, value extraction, intelligent management and display[2]. In such an era, people may obtain meaningful knowledge that can be transformed into promoting changes in people's lifestyles from any data. Big data can diffuse and integrate with different fields, showcasing a new era concept and value. With the acceleration of information technology, more and more product circulation in fields is being replaced by data circulation, thereby connecting big data with related industries and integrating them in a new era.

The value of establishing a new ecosystem in different fields lies in the ability to maintain a stable state of interaction, circulation, openness, and sharing between different fields[3][4]. This concept value reflects the characteristics of big data, such as communication with all things, valuing ecology, and openness and inclusiveness. It represents the connection between things and people, things and things, and people and services, which also integrate dynamic development technology, and allow a large amount of data to be cross used by people[4]. The exchange of interaction and sharing among different regions and races demonstrates the "technological ecology" of big data.

A learning community is an organization where everyone learns together based on the mission of the community and towards a common vision[5]. Members explore the path to knowledge and understand the way the world operates together, care for and share learning interests with each other, and collaborate and interact towards the same goal of education[6]. It is a special connection community, mostly manifested in the connection between teaching and learning, equal negotiation and emotional bonding. Driven by common interests and learning needs, community members spontaneously organize and carry out their favorite learning activities together[7]. Members unite and cooperate with each other, rely on each other, and grow together as informal learning group organizations, such as the book reading and exchange meetings in the community, the square dance groups that love dance, and the Tai Chi sword teams that exercise in the morning. As an organization formed by community members during the learning process, a learning community is not only an important way to improve learning efficiency and enrich learning methods, but also an effective platform for community members to form lifelong learning awareness[8][9]. In addition, more importantly, the construction of a learning community can also place learning among community members in a familiar environment, which helps to create a supportive and watchful environment for community members.

In fact, big data has become a powerful support for community education learning. As some studies have pointed out, we should build a multi-collaborative education data governance system with the help of a standardized education sharing data platform[10]. Big data will significantly change community's work and life. For example, in China, based on the current community education networking, some scholars rely on MOOC to develop community education and create a new market-oriented, democratic and diversified operation model. In other words, big data has also become a major pillar of specific content in community education. It help community members to connect with each other, broaden learning content, share knowledge and information, and improve modern scientific and cultural literacy. Through big data technology, we can deeply

grasp and effectively connect the community environment, providing open and innovative elements for public facilities and building a new educational ecological environment in the era of data[10]. In a word, in the era of big data, how to create a community education and learning community that is more adaptive to the era and community ecosystem has become the focus of research. Therefore, it is necessary to examine the current reality of community education and learning community construction in the era of big data.

3. The dilemma of building a learning community for community education in the era of big data

In the context of big data, data resources are rich and scientific knowledge is exploding. It is necessary and possible to integrate these advantages into the establishment of community education and learning community. However, in reality, the learning community has not yet undergone reasonable construction. Instead, it faces multiple obstacles.

3.1 Single structure of the learning community and solidified cognition of the core members

The internal members of the community education and learning community mainly include the organizational educators with professional technical knowledge and practical ability, represented by community cadres and managers, as well as community residents and other participants in education[6]. On the one hand, the structure of learning community is too single. The participants in the learning community are mainly middle-aged and elderly women, while the majority of men prioritize their careers. Surveys have shown that the main participants in community groups are middle-aged and elderly people, with an average age of around 60 years old and in the late stages of retirement or career development. However, a large number of young people are constrained by the inherent impression of community teams and are unwilling to participate in activities with the elderly and elders. To some extent it affects the stable and sustainable development of the community due to the simplification of the structure. On the other hand, core members have a fixed cognition and are unwilling to accept the cultivation of new skills and knowledge. Core members should play an organizational and coordinating role in the learning community. However, most of the current organizational responsibilities are retired elderly people with high enthusiasm, while once new technologies appear that they cannot understand, such as offline communication and learning in the era of big data, many people will only watch but not learn, gradually blocking these new technologies. They cannot play a leading role and form a clustering effect. Then, other community members who are connected to them will also reject new knowledge and skills, thereby limiting the development of the community education and learning community.

3.2 Single and deficient construction environment of community education and learning community

In a sense, the construction environment of community education is mainly considered from two aspects: ecological environment (physical environment) and spiritual

environment[11]. A good ecological environment is the most important prerequisite for human development, and also the basic condition for human survival and social stability[11]. At the same time, human economic activities are permeated with cultural factors. However, for a long time, when discussing economic development issues, people often only focus on resources, funds, projects, technology, etc., and ignore the factors of the human environment. A good and strong spiritual environment is the "hotbed" for cultivating talents and learning knowledge. However, at present, in the era of big data, the construction of community education and learning community is faced with a single and scarce environment. First of all, its uniqueness is reflected in the physical environment. The physical environment for community education is relatively old, which is manifested in the simple infrastructure structure and the single system of public resources and service platforms. If the activity places is limited to indoor meeting rooms or comprehensive activity classrooms, lacking activity funds or auxiliary materials such as books, computers, etc., to some extent, it will lead to a single type of activity in the community, which will affect the smooth development of the community. Similarly, the idle infrastructure can also affect the development of community. For example, it is difficult to ask primary and secondary schools to open to the communities in their spare time. The community's research organizations, art museums, public welfare facilities in parks, etc. are also rarely open to the public, and idle resources have not been fully reorganized and applied.

Secondly, scarcity is mainly reflected in the spiritual environment, and the most important aspect of the spiritual environment is the rich heritage and atmosphere formed by culture, art, and interpersonal relationships. With the continuous promotion of technology in community education in the era of big data and the introduction of the modern model of community education, it is bound to break or reorganize the original spiritual culture. If we still conservatively create a rich cultural atmosphere in the original single and scarce way, there will be many problems. For example, curriculum cultural resources belong to the activity source of the learning community, serving as a bridge and link to maintain open interaction between members and the community, and an important means of shaping excellent cultural heritage. However, the existing learning community seldom uses learner resources and community education resources. The curriculum is traditional and inflexible, and cannot be used well. Therefore, to build a learning community with the help of technology in the age of big data, it is necessary to reasonably develop the curriculum and constantly adjust the technology and education means to meet the natural state of the spiritual and cultural environment of community life.

3.3 The Arbitrariness of community education management on learning community

Community management should establish a leadership mechanism for community education work, and require community citizens, organizations and the political department to jointly shoulder the obligation of community construction[12][13], so as to actively create a good atmosphere of educational management with social support, community autonomy, and people's active participation. However, current research shows that contemporary community learning communities lack standardized systems, plans, and directions, and there is less summary and reflection after activities, which will be detrimental to the growth of community learning communities. In essence, it mainly stems from the arbitrariness of community education management to the learning community, which is mainly reflected in two aspects: one is the vagueness of

the management subject. The community education management departments are complex and interlaced, for example, there are the community construction department, the social affairs department, and the general office management in the community, which will lead to community residents being confused about which department is responsible for which work. Due to the inadequate management of the main body, community groups are unable to obtain the necessary attention and resources, which to some extent affects their development enthusiasm. After the integration of modern community education concepts and technologies under big data, the community team will inevitably build a corresponding lifelong and independent learning platform, and the fuzziness of the management subject will not provide support for the orderly development of the community. Secondly, the management mechanism is not sound. Due to the high registration threshold for community teams, the learning communities that currently active in the community cannot register normally and therefore cannot accept corresponding management from the civil affairs department. Although we propose to encourage the development of a folk learning community, we have not gotten strong policy guarantees. With the development of technology in the era of big data, the introduction of the modern model of community education, such as the online libraries and the electronic technology, is bound to gradually break the original learning methods and learning content. The lack of guidance from the government and society and the loose management team will inevitably limit the healthy development of the community learning community[14].

4.   Analysis of the difficulties in the construction of community education and learning community in the age of big data

After analyzing the many issues surrounding the construction of a learning community, we need to consider what advantages exist in the era of big data to make up for the problem of building a learning community. We need to analyze the reasons for the difficulties in building a learning community from the perspective of big data, and then seek countermeasures to contribute to the development of the learning community.

4.1 The unbalanced structure of the learning community in community education and the prominent contradiction in self-organization

The structure of the learning community of community education is single and the core personnel's thoughts are solidified. The reason is that the structure of the learning community is unbalanced, and the self-organization contradiction is prominent. The proportion imbalance is reflected in gender, age, income and cultural level. Currently, most of the members in the learning community are middle-aged women with lower education and average income, which will affect the selection of future activity content, form updating and the establishment of behavioral norms. At the same time, core members are less exposed to training on new knowledge and skills under big data, resulting in their lack of professionalism. In addition, their own learning time is not fully guaranteed, which limits their roles as leaders. Big data is to help community members constantly understand new things, accept new content, form new ideas, and create conditions for the construction of community education and learning community. Let community members to learn modern technology, meet the needs of community members at different age groups, and enable some young adults in the community to

understand that scientific knowledge so that increase their professional skills income. By enriching community activities, including adding diverse educational short videos online, exploring community members' learning and cultural cultivation, and holding popular and enjoyable offline activities, we can open up and reshape the cognitive world of the core and peripheral members of the community, and promote online and offline collaboration to enhance the attractiveness of the learning community.

4.2 Defamiliarization of community education governance to the ontological environment

The construction environment faced by the learning community is single and deficient. If the environment is not well used, it will lead to disorder of various environments. Currently, community education is defamiliarization to environmental governance, and community governance lacks autonomy. If the infrastructure in the physical environment is not sound enough, the related activity resources could not meet the needs of modern residents, which result in a demand and supply gap. On the one hand, due to the increasing demand for community members year by year and with the rapid development of economy and technology under big data, residents also have high requirements for learning community activities, therefore, the demand for activity resources is gradually increasing. On the other hand, the community officers have not timely noticed the changing needs of the community members, and the resources provided have been unreasonably coordinated and allocated and not followed the changes of the big data era, which result in some resources being idle. There is a lack of good community culture and effective guidance and governance in the spiritual environment. This is reflected in the fact that the relevant community staff do not attach importance to the cultural resources of community courses, do not form a healthy interaction link between community learners and groups, and at the same time, community education does not give consideration to the symbiotic development of the two environments. The advantage of the big data era lies in the ability to create a community culture of harmonious coexistence of physical environment and spiritual environment for the learning community[14], For example, for corridor culture, we should properly supports and publicizes it on the big data platform and uses the learning APP or official account to attract more public resources. Besides, we should create a good learning atmosphere for the community and integrates new resources, establish an open and shared state to create a balanced and stable environment, and thus achieve the creation of a learning community environment.

4.3 Imperfection of the management mechanism of community education and the unclear division of responsibilities

The problem with community learning communities in educational management is the arbitrariness of organizational management, which is essentially the lack of clarity in the management subject and mechanism. On the one hand, the community education policy has not yet become a systematic system. Although there are relevant community education regulations, they are fragmented, uncoordinated, and lacking systematization. At present, the proportion of learning communities that are truly registered in community education institutions is very small, and there are a large number of scattered learning communities and have not attracted the attention of relevant community education institutions. Most of their funds are also used for community

education in community schools, with very little resource cost for learning communities. Community officers haven't deeply understood the activities of the learning community, and the task of creating a learning community will lag behind. On the other hand, the division of labor among the management departments at all levels of community education is not clear enough. Different departments have different perspectives and requirements on community education. For example, the government and sub-district offices are in the management, while the villages and towns and committees are also in the guidance, and there is no overall planning leadership, which easily leads to unreasonable arrangements for community education. As a result, grass-roots community staff are busy with meeting, conveying spirit, completing specified tasks, reporting specified results, etc., and some communities only focus on introducing innovative development strategies, neglecting community's basic education work, which lead to unclear responsibilities at all levels of community management, resulting in chaotic and scattered management systems. Big data technology can help community education rationalize the management mechanism, build a big database platform, develop relevant learning management websites or APPs, and improve the supporting management service system, so as to form a fast, effective, convenient and ecological management operation mechanism.

5.   Conclusions

The construction of community education and learning community in the era of big data must be generated in the social practice. No matter how reasonable the definition and analysis of community education and learning communities are, specific and detailed means should be used in reality to assist in the successful construction of community education and learning communities. Therefore, we can ensure a breakthrough in the construction of a community education and learning community from the following aspects.

6.   Some suggestions for building community education and learning community in the era of big data

6.1 Deepen the internal mechanism of community education and learning community with the help of big data technology

From the perspective of system theory, the community education and learning community itself should be a relatively stable, harmonious and integrated system. The internal mechanism mainly includes the basic content of the community education and learning community, the motivation of community learning, and the abilities of core members. Firstly, we should expand the learning content, construct new forms of O2O learning, and make its internal structure tend to be open and shared. When cultivating a learning community, we can use big data technology to make members realize that the knowledge and technology learned by the community can help them improve their career development and bring them productive benefits. For example, community members can learn practical skills by using big data video technology to learn how to make bamboo baskets or organize women to learn corresponding embroidery. At the

same time, in the era of big data, we should build a new O2O learning form and explore the cultural cultivation of community members, so as to strengthen the attraction of the community itself. Besides, we should create various learning methods, such as organizing activities, Tai Chi and choirs offline, and providing lectures on the historical development and cultural connotations of Tai Chi or related knowledge of music theory online. After learning, knowledge quizzes can be organized offline, which continuously complements online and offline community education. All these measures help community members develop towards a virtuous cycle and complementary openness in their learning community.

Secondly, enhance the learning motivation of core members and their comprehensive abilities. In order to open up the inherent thinking mode of core members and accept the new things brought by big data, we need to make them realize that the integration of big data technology and community education can bring certain benefits and income. Besides, in order to cultivate the core members' comprehensive abilities in leadership, management, coordination, etc., we can use big data platform technology to organize online case teaching, offline discussion, and invite experts to train core members in professional knowledge, skills and theory, so as to cultivate their innovative thinking, stimulate their learning motivation and let them play its leading role to lead other members of the community to progress together.

6.2 Use big data technology to build an external cultivation system of community education and learning community

In recent years, due to the rapid development of information technology, there has been a high degree of environmental uncertainty, resulting in strategic formulation not keeping up with changes in the external environment[15]. We should strengthen the construction of the external environment of community members' education and learning communities. The learning communities should continuously enhance the adaptability to the changing of the external environment. Firstly, optimize resource allocation, balance demand and supply gaps, and maintain an open physical environment. Governments or enterprises and institutions should increase funds to build, expand or reconstruct relevant community resources and equipment, like amusement parks and public leisure venues. In addition, community members could use big data to obtain relevant information in a timely manner, such as launching mobile terminal learning community APP services to find their favorite community anytime and anywhere. At the same time, intelligent sorting functions can be developed based on the learning community's popularity indicators, activity characteristics, location distance, positive feedback rate, etc., to understand the learning content and interests of community members, thus provide corresponding resource supply. For example, model teams and square dance groups tend to focus on fitness, which emphasize sports facilities and spatial venues; while some communities tend to focus on technology, requiring the configuration of relevant technology platforms and service guidance resources.

Secondly, we should create a community learning atmosphere, explore curriculum cultural resource management, and enrich the spiritual and cultural environment[15]. In the era of big data, community educators can use mobile platforms to publish relevant information and live streaming through cloud platforms and organize community members to carry out learning activities, such as "community hands-on production" or "residents reading competition", which will create a good learning atmosphere in the

community and enhance their willingness to participate in community activities. In addition, relevant experts are invited to give offline lectures. At the same time, big data technology is fully used to realize online review anytime, anywhere, and unlimited times, thus achieve the super value use of resources. Of course, it also can guide the community learning community to set up corresponding micro-blog and QQ groups, provide their own curriculum cultural resource management among members, expand the scope of application of learning resources, and thus enrich the spiritual and cultural environment of the community.

Furthermore, we should create a management platform to ensure timely and effective communication, and develop a good ecosystem[10]. Provincial governments at all levels can supervise subordinate departments to legislate for community learning communities, and use local policies and regulations to clarify the main responsibilities of each department[14]. Community education guidance centers in various provinces and regions should bear the responsibility for the ownership and development issues of community group. At the same time, combined with big data technology and local reality, a detailed and highly operational learning community management platform should be established according to local conditions and ensure effective communication among community members[15]. In addition, the construction of a good management mechanism also requires strengthening the integration and cooperation between the education department and civil affairs, labor, science and technology departments. Using big data technology, we should establish data bases online or add application functions to relevant apps, and establish a series of management platforms for submission, review, authorization, etc. After the community group's application is approved, corresponding learning association should take its management responsibilities, thus clarifying the roles and responsibilities of various departments and creating a stable ecological and virtuous cycle of external cultivation system for community education and learning communities.

Acknowledgements

Reference

[1]   National Development and Reform Commission and Development and Reform Commission of the Ministry of Civil Affairs jointly issued the "Construction Plan for Urban and Rural Community Service System" (2016-2020) [EB/OL] http://www. Ndrc.gov.cn/201612/t20161219-830445.html. 2016-12-19.
[2]   Song Yifang. From 1.0 to 2.0: Review and Prospect of Community Education Informatization Research [J]. Journal of Hebei Normal University (Education Science Edition), 2018, 20 (4):88-96.
[3]   Song Yifang. Development and Exploration of the Informationization Development Index for Urban Community Education [J] Vocational Education Forum, 2018, (9): 96-103.
[4]   Sun Peiqin. Supportive Environment Cultivation for Community Team Learning - From the Perspective of Educational Ecology [J]. Vocational Education Forum, 2014 (12): 38-40
[5]   LONG, DONNA RESEIGH. A Statewide Initiative in Service-Learning and Community-Based Instruction[J]. Hispania, 2004 (87) : 128-131.

[6] Tan Jing. Research on the Cultivation Strategy of Community Learning Community [D]. Chengdu: Sichuan Normal University, 2018.

[7] FISCHER, WILLI W, HANZELI, VICTOR E, et al. Community-Based Foreign Language Teaching in Washington[J]. The Modern Language Journal, 1971 (55) : 514-518.

[8] POLANSKY, SUSAN G. Tutoring for Community Outreach: A Course Model for Language Learning and Bridge Building Between Universities and Public Schools [J]. Foreign Language Annals, 2004 (37) : 367-373.

[9] Boyer E L. The basic school: a community of Learning[M]. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching, 1995.

[10] Liu Bowen, Wu Yonghe, Xiao Yumin, Ma Xiaoling. Building a new ecology of education data in the era of Big data---the status quo and reflection of national education data institutions at home and abroad [J]. Open Education Research, 2019, 25 (3):103-112.

[11] Lu Yun. Building a Community Learning Community from an Ecological Perspective [J]. Journal of Higher Continuing Education, 2014 (03): 21-24.

[12] Feng Guohong, Sun Peidong. Analysis of the Growth Path of Community Learning Community. Adult Education, 2018 (08): 138-142.

[13] Deng Hongxue, Fan Wenya, Fu Xiaoju. The vision, model and implementation path of community education governance in the big data era [J]. Adult Education, 2020, 40 (5):37-42.

[14] Yang Xianmin, Tang Sisi, Li Jihong. Developing Education Big data: Connotation, Value and Challenges [J]. Modern Distance Education Research, 2016, (1):50-61.

[15] Wang Guoxin, Yu Jinxia. Research on the Development Strategy of Community Learning Community-Taking Hangzhou as an Example [J]. Contemporary Continuing Education, 2015, 33 (04): 10-14.