# Participation Intention and Influencing Factors of Primary and Secondary School Teachers in the Network Training Community: Taking Jinhua City as an Example

Shi Xinke[1,a,*]

[1] College of Humanities, Zhejiang Normal University, NO.688 Yingbin Road, Jinhua, Zhejiang Province, China

[a] 506936024@qq.com

*Corresponding author

**Keywords:** network training, willingness to participate, influencing factors, professional development of teachers.

**Abstract.** This paper investigates the participation and willingness of Jinhua primary and secondary school teachers in network training by using the questionnaire interviews. From the perspectives of participation attitude, subjective norm and consciousness behavior, the results show: 1) their participation intention of network training is generally good, 2) the communication is not deep enough, 3) the self-motivation needs improving, and 4) the external drive from administrative staff and tutors is insufficient. Nine factors have significant influence on the willingness to participate, such as school paragraph, the sense of teaching presence, teacher-student relationship, peer relationship, familiarity, the assistant of learning, interaction, adaptability, and satisfaction. Also, the regression analysis equation of other factors to participation intention is obtained. Based on the analysis of the survey data, several suggestions for promoting teachers' willingness to participate in network training are proposed.

## 1. Introduction

Facing to the new situation of international development, talent resource has become the principal one. Talent cultivation ability, as known as the level of education directly determines the level of social quality, and teachers are the founders of the cornerstone of education [1]. *The China Education Reform and Development Program* displays that building concrete teacher teams is the key factor to optimize development of education and deepen education reform [2]. China teacher education system is mainly divided into two major types, pre-service education and post-service education. The former belongs to formal learning and has an orderly structure. In contrast, the latter is underdeveloped and has problems such as lack of supervision and incomplete system, which greatly limits the professional development of teachers. In the information-based and learning society, modern information technology infiltrates into the field of education, fostering network training as an extension and development of traditional training, in order to achieve a more efficient system of constructing teaching staff [3]. In 2013, the Ministry of Education issued a document clearly proposing a new round of training for more than 10 million primary and secondary schools (including kindergartens) in the country by the end of 2017. However, with the scale expansion and normalization of network training, the contradiction between new things and the old manifest and the willingness to participate is not ideal. We believe that the professional development of teachers is a certain way to realize self-worth at a personal level, and is an indirect driving force for social renewal and development on a social level. Only when the teachers are willing to actively participate in network training, continuing education will become sustainable and effective, thus promoting the professional development of teachers. Therefore, it is of great significance to explore the willingness and influencing factors of primary and secondary school teachers' participation in network training for actively seeking professional development of teachers.

## 2. Survey Objects and Methods

In order to study the differences between the current participation situation of teachers and participation willingness regarding personal backgrounds, and to explore the causes behind, we conduct researches on teachers in network training via questionnaire and semi-structured interview in November 2017. Considering hierarchical structure of samples, we choose three schools from a primary school, a middle school, a senior high school respectively in Jinhua City.

The questionnaire is designed based on three aspects. Firstly, according to the literature review of large amount related researches and combining with Icek Ajzen's *planned behavior theory*, the measuring dimensions of the network training participation willingness are determined as "participation attitude dimension" (the positive or negative personal feelings of specific behaviors), the "subjective norm dimension" (the individual's perceived social pressure on whether to take a particular behavior), and the "perceived behavioral control dimension" (the individual's past experience and expectations). According to the literature review, we determine five demographic variables (sex, age, highest education, teaching seniority, and teaching grade), and eight basic factors (teaching presence, teacher-student relationship, peer relationship, facilitating scholars, interactive communication, adaptability and satisfaction). The questionnaire questions are constructed and expressed in a concise language and are based on the factors above.

Secondly, based on the discussions with teachers and the observations of the participation of teacher network training, we refine the questionnaire questions carefully.

Thirdly, based on the structure general questionnaire and according to the Likert scale, we design the options of our questionnaire in five grades, from 1 to 5.

All the data analysis is conducted with SPSS 13.0 for windows.

## 3. The Survey Analysis and Results

Totally, 106 questionnaires are distributed in the form of online questionnaire. 106 copies are collected. 91 valid questionnaires are obtained, with the effective rate of 85.84%. The sampling ratios of primary school, middle school, and senior high school is 41.8%, 34.1%, and 24.2% respectively. All questionnaires are divided into high-score group and low-score group. The concomitant probability of all the questions is less than 0.05, which means the discrimination degree of questions is high. The confidence coefficient of whole questionnaire is 0.938, which has a high degree of credibility.

Among the 91 valid questionnaires, the ratio of male and female teachers is 38.5% and 61.25% respectively. The number of teachers who has taught for 5 years is the highest (38.5%), followed by teaching seniority of 6-15 years (34.1%), 16 -25 years (17.6%), 26 years and the rest (9.9%). Most teachers have a undergraduate degree (78%), followed by graduate degree (12.1%), junior colleges and below (9.9%).According to the age distribution, most of them are young teachers (46.2%), followed by teachers of 31-40 years old (29.7%), 41-50 years old (18.7%), and 50 years old (5.5%).

### 3.1 A. Comparison and analysis of differences in participation willingness of network training

Higher score means better participation willingness. According to the statistic, the performance of fifteen factors across five dimensions are good with average score of 3.70/5.00, which is displayed in the Table 1.

Table1: The score teachers' participation willingness in network training

| Dimensions | Factors | Average value |
|---|---|---|
| attitude towards participation | Feelings of learning | 3.80 |
| | Energy input | 3.43 |
| | Questions posed | 3.88 |
| | Listening to others | 4.23 |
| | Sharing opinions | 3.90 |
| subjective norm | Drive from tutors | 3.67 |
| | Drive from peers | 3.78 |
| | Drive from administrator | 3.70 |
| | Drive from colleague | 3.77 |
| | Drive from relatives | 3.57 |
| perceived behavioral | Self-efficacy | 3.71 |
| | Technology demand | 3.64 |
| | Knowledge reserve | 3.66 |
| | Knowledge update | 3.64 |
| | Time to prepare | 3.16 |

From the perspective of participation attitude, teachers are most willing to listen to others, followed by sharing ideas, asking questions, feelings of learning, and energy input. First of all, network training itself is a learning community and is based on a cooperative learning culture. Asking questions, listening to others, and sharing opinions are all important aspects of interpersonal interaction. Interaction in online training is the source of tacit knowledge explicit and explicit knowledge internalization, and the most important channel for resource flow [3], associating with teachers, teaching guidance, environment and other factors. Listening to others is significantly higher than other factors is mainly due to the lack of communication depth. The traditional face-to-face training and teaching process used to listening to authority and experts (like academic reports, special discussions, expert lectures and so on), because of the worship of professional knowledge as well as the lack of self-confidence of individual ideas and abilities, which still exists in network training to a certain extent. Secondly, based on the mean value of asking questions and sharing opinions in the survey results, the phenomenon of insufficient interaction has been improved. The learning community should be based on shared learning interests and learning objectives. Self-driven participation will result in good interaction and deep communication, and ultimately the sharing of wisdom. In addition, good interaction will promote the formation of good interpersonal relationships and promote participants' sense of belonging and pleasure. From the average mean of the feelings of learning, it can be seen that the learning atmosphere of network training is good. In addition, the learning experience is relaxed and pleasant, due to the change of evaluation methods and learning concepts, the evaluation of network training emphasizes process. Through tracking and diagnosis, we can feedback teachers' "learning" at all times, reduce the burden of dealing with the assessment and coping with the inspection. Network training advocates autonomous and personalized learning. Experts are in the position of leaders, standardizing and constraining the entire network training group, and promoting professional autonomy of teachers.

The mean value of attitude towards participation is significantly lower than that of the same dimension. This shows that although the network training combines the reality of work and life, it has flexibility, but the energy input is insufficient. The reasons are that the network has been trained to be "far" and "virtual". The problem of insufficient time preparation, but we believe that the hidden deep problem should be self-driven lack. The teachers who participate in network training abroad are mainly self-motivated and self-directed. Many domestic teachers are deeply rooted in the concept of "iron rice bowl" (a secured job). In addition, teachers used to be "student" who have tried hard to face the test. The initiative is insufficient or even excludes learning, which makes it impossible to detect. The happiness and value of self-growth and lifelong learning have led to the lack of teacher initiative support for in-house teacher training [4].

For the subjective norm dimension, the highest are drive from peer and drive from colleague, followed by drive from administrator, drive from tutor, and drive from relatives. First of all, due to the initial establishment of the learning atmosphere and good learning experience, the training peers

or colleagues will encourage each other and participate in network training to seek better professional development. However, some teachers also counsel their colleagues in participating in network training due to competitiveness or affiliation. Secondly, in the primary and secondary schools, it is the administrators that actually lead the education, and they are the roles of decision makers and implementers. The teachers in the survey results think drive from administrators is low (37.4%), indicating that driving force of promoting teaching and school specific issues from administrators is not paid enough attention, because of the separation of learning and application as well as the isolation of research and training. In addition, aged administrators lack the ability to accept new things such as information technology which is not as good as that of young people. Thirdly, during the training process, the instructors provide key support roles in the network participants' listening, reviewing, answering, and guiding. Whether it is academics, feedback, or organization, the tutor's emotional drive is the fountain of teacher's motivation and self-identification. According to the survey data, the instructor's driving force is insufficient, reflecting the lack of emotional attention in the process of supporting the service of the network training instructors.

In the perceptual behavior dimension, the self-efficacy score is the highest, followed by knowledge reserve, technical demand, and knowledge update. The time to prepare is obviously lower than the other factors of the same dimension, but except for self-efficacy. The other factors are lower than the average value of the factor 3.70. Self-efficacy is an important driving force to stimulate interest in learning. It echoes the individualized and autonomous learning concepts advocated by the network training institute, and promotes each other. The survey data shows that the network learners' self-efficacy is general, because the existence of old habits and the challenge of new things. The former has been discussed in the attitude dimension, while the latter is reflected in the lack of technical needs, knowledge reserves, and knowledge renewal capabilities. In recent years, large-scale teacher informatization capacity building training is in full swing to meet the challenges of the information age, but the training content is only the basis. Network training emphasizes independent research and collaborative cooperation, both of which need to utilize rich network resources, which is not only the advantages of the network, but also the challenges brought by the network. It raises the requirements that information technology capability, knowledge reserve and knowledge absorption ability for teachers. In addition, network training is not isolated. The pursuit of network convenience is often combined with face-to-face training, combining theory with practice to create mixed learning. The principle of mixed learning is the optimization of low investment and high return. We believe that teachers who participate in network training must be unique individuals. They must design a suitable learning solution based on their own environment and their own needs and conditions. There are some reasons for no time to prepare, such as the heavy workload. But the fundamental cause of them is that network training and existing tasks have not been effectively integrated. Formal and informal training, teaching and training, school transformation and personal growth are separated, thus increasing the burden.

### 3.2 B. Difference examination affecting the participation intention of network training

We examine the impact of demographic factors and other factors on the three dimensions of participation intention. The results are shown in Table 2.

Table 2 Test the influence of demographic factors and other factors on participation intention

| Factors | Attitude | Subjective norm | Perceived behavioral |
|---|---|---|---|
| Sex | 0.546 | 0.282 | 0.765 |
| Age | 0.322 | 1.225 | 0.740 |
| Education background | 0.152 | 0.769 | 0.696 |
| Teaching seniority | 0.437 | 0.832 | 1.013 |
| Phase of studying | 3.744* | 1.325 | 3.195* |
| Teaching presence | 0.472 *** | 0.477 *** | 0.590 *** |
| Teacher-student relationship | 0.658 *** | 0.592 *** | 0.488 *** |
| Peer relationship | 0.529 *** | 0.544 *** | 0.480 *** |
| Familiarity | 0.651 *** | 0.459 *** | 0.221* |
| Learning facilitator | 0.636 *** | 0.412 *** | 0.324 ** |
| Interaction | 0.682 *** | 0.622 *** | 0.588 *** |
| Adaptability | 0.578 *** | 0.592 *** | 0.441 *** |
| Satisfaction | 0.580 *** | 0.593 *** | 0.341 ** |

①* $p<0.05$; ** $p<0.01$; ***$p<0.001$.

②The first five factors are demographic factors, and the last eight factors are other factors. The factors in the table are numbered from 1. The independent sample t test is used for factor 1, the single-factor variance test is used for factor 2 to 5, and the correlation test is used for factor 6 to 13.

According to the results of the demographic factors on the participation intention (Table 2), in the three dimensions of participation intention, there are differences in the participation attitude. There is no difference in subjective norms. And there are differences in the perceptual behavior according to the phase of studying.

In the case of testing the homogeneity of the variance, the multiple comparison analysis of each segment is further tested using S-N-K. In the total score of participation attitude, high school, elementary school, and junior high school decrease in turn, and there are significant differences between high school and junior high school. In addition, in the total score of perceptual behavior, primary school, junior high school, and high school decrease in turn, and there are significant differences between elementary school and high school. In order to further explore, S-N-K is used to test and analyze the factors of participation in each phase of studying. The difference in participation attitude is mainly due to learning and listening to others, and the difference of perceptual behavior is mainly due to self-efficacy. The results shows that in network training compared with junior high school teachers, the learning experience of high school teachers is more enjoyable and the ability to listen to others is stronger. However, compared with primary school teachers, high school teachers' self-efficacy is low, and the self-confidence in expressing self-esteem is not strong.

According to the test results of other factors on the influence of participation intention (Table 2), among the three dimensions of participation intention, eight factors are significantly positively correlated with themselves. And the level of familiarity affects the perceived behavior reaches 0.05, the significance level of the influence of the learning facilitator and satisfaction on the perceptual behavior is 0.01, and the others reach the significance level of 0.01 as well.

Considering the collinearity of the eight factors, in order to determine the variables that can best explain the three dimensions in the eight independent variables, the regression analysis is further carried out by using the multiple linear regression (stepwise method). The results are shown in Table 3.

Table 3 Regression analysis of participation intention by other factors

| Dimension | Regression equation | Degree of interpretation |
|---|---|---|
| Attitude | Attitude=1.605*facilitator+1.410*familiarity+ 1.058*teacher-student relationship+0.920*adaptation | 0.990 |
| Subjective norm | Subjective norm=1.463*adaptation+1.277*satisfaction+ 1.241*teacher-student relationship+0.744*facilitator | 0.987 |
| Perceived behavioral | Perceived behavioral=2.070*interaction +1.621*teaching presence+0.937*familiarity | 0.981 |

First of all, from the perspective of participation, the influence of facilitator, familiarity, teacher-student relationship, and adaptability reduce in turn. It is said that the positive feelings of teachers participating in network training are first aided by facilitators' answers, reflecting the main purpose of teacher participation in network training is to solve the problems to some extent. If the questions is not answered, the positive feelings are greatly reduced when the demand is not satisfied. As for the survey results, the mean value of the facilitator factor is 3.66, which is the lowest among the eight factors and is significantly lower than the average value (3.87). It shows that the facilitator is a big problem that affects the willingness of network training participation. Second comes to the familiarity. People are more inclined to conduct online training together with acquaintances. Acquaintances help participants to have a positive feeling. Finally, teacher-student relationship and adaptability refer to the interaction between participants and the tutor and the learning environment. The better the interaction, the better the positive feeling. Based on the results above, we find that the relationship between the facilitators and the teacher-student can be summarized as teaching guidance. The degree of familiarity can be classified as a companion. The adaptability can be classified into the environment. The teaching guidance, the companion, and the environment are the main nodes of resource flow. The nodes are connected and promoted. The flow of resources is interaction, indicating that the attitude of participation is determined by interaction to a certain extent, which is consistent with the results obtained by this paper.

Secondly, from the perspective of subjective norms, the influences of adaptability, satisfaction, teacher-student relationship, and scholarship reduce in turn. In the analysis of the status quo, it has been explained that the drive force from the tutor is insufficient. The encouragement of the tutor helps to establish a good teacher-student relationship and thus enhance subjective norm level. Thus, the lack of drive from the instructor is a big problem, which is consistent with the conclusion that the promotion of the instructor as a component will drive the subjective norm as a whole.

Finally, from the perspective of perceptual behavior, the influence of communication, teaching, and familiarity reduce in turn, and the former two are significantly higher than the latter. Kessler, the proponent of the concept of teaching presence, uses the sense of presence to describe the physical and emotional connections between teachers and students in classroom teaching, and to find and evaluate the desired teaching behavior in classroom teaching [5]. Communication and teaching are the main ways for trainees to learn. The higher the scores of the first two, the higher the depth of learning. The depth of learning is closely related to the performance of perceived behavior such as knowledge reserve, skills, and knowledge absorption. The depth of learning must be guaranteed by the performance of perceived behavior. At the same time, the improvement of learning depth will prompt the follow-up behavior to achieve the match status.

## 4. Conclusions

Based on the above questionnaire survey and analysis results, the willingness of primary and secondary school teachers to participate in network training is generally good. However, there are also problems such as insufficient communication depth, lack of self-motivation, and insufficient driving from leaders and mentors. The influencing factors include the phase of school and eight other factors. In order to improve the organization and implementation of network training, and to attract primary and secondary school teachers to join the network training community to obtain better continuing education, the following basic suggestions are proposed.

### 4.1 Enhance interpersonal interaction and increase communication depth

Network training should form a learning community and create an environment of learning. Ideally, the learning community is free. Teachers come and go free, purely driven by learning, and produce a collision of ideas, which ultimately leads to an academic cohesion. Regardless of the external force that the network training community is shaped, it should be transformed into a spontaneous, free learning community. Professor Ding Xingfu believes that the construction of the community should adapt to the special social, psychological and cultural characteristics of adult learning, embody interactivity and inclusiveness, and meet the needs of diverse education and training [6]. There are

individual differences in learning style, learning needs, and communication orientation. The network training community also needs to be diversified according to their differences. Informal and formal learning, different module content, etc. need to be created to encourage teachers to find a match, which is a network of self-cultivation communities with in-depth interaction.

### 4.2 Advocate self-motivation and change development philosophy

In order to form a true learning community, it is not enough to rely solely on external forces. Self-professional development consciousness is the basis and premise for teachers to truly realize independent professional development. It can enhance teachers' sense of responsibility for their professional development and maintain their self-renewal orientations in professional development [7]. Therefore, network training should be based on teachers and implemented to satisfy the real needs of them. Based on the problems met in the teaching and management process, the network training should empower teachers to design a system for themselves. Spontaneous learning groups are encouraged, supporting by professional service team, emphasizing the reflection and experience, thus, forming a cultural atmosphere of independent development of teachers. However, in this process, the Ministry of Education and school leaders should guarantee the time and economic costs of teacher network training and prevent the training from becoming a mandatory burden.

### 4.3 Improve the training service system and shape the emotional network

Harwell finds that only with good situational support, teacher training can be successful [8]. People are socialized. The corresponding system of value orientation and formation of the situation will permeate the motives of human behavior and manifest the behavior. Thus, school leaders should first change their concepts, understand the meaning and connotation of identity network training, integrate network training with school-based research, solve problems in schools, and seek better development. Teachers are important forces among them. Supporting situations should include a reward system. Network training can be considered as a form of normal assessment or competition, but the incentive mechanism should be avoided to cover the internal motivation. The balance between external motivation and internal motivation needs careful consideration.

### 4.4 Improve the training service system and shape the emotional network

The facilitators and mentors in the network training play important roles in leading, management, and evaluation, which is necessary for the network training community to achieve good results. The learning community is based on interest and task-driven. If compulsory administrative management is applied, it is harmful to the freedom and interest of learning. It should be applied to serve the person and shape the emotional connections among them. According to the Pygmalion effect, the help of facilitators and mentors will greatly promote the upward development of teachers.

## References

[1] Wen Jiabao. Wen Jiabao talks about education. Beijing: People’s Education Press,2013. Print.

[2] The State Council of the People's Republic of China. Program for the Reform and Development of Education in China (2010-2020). Beijing: China Education Press,1993.Print

[3] Ma Li, Yu Xiaohua, and Zhu Zhiting. " New mode of teacher continuing education: network research and study." Educational Research11(2011):21-28.

[4] Yu Xiaohua, Ma Li, and Zhu Zhiting. " Continuing education for teachers in the information age: taking the road of mixed study with Chinese characteristics." China Educational Technology12(2011):54-59.

[5] Hong Z, Montes L S D. Is It a Tale of Woe? —An Investigation of Relationships of Online Teaching Presence and Learning[J]. 2007.

[6] Ding Xingfu, and Chen Xiao. " Teacher learning community in information technology environment is virtual learning community." modern teaching (2007).

[7] Bai Yiming. " Teacher's self-renewal: background mechanism and Suggestions." Journal of east China normal university (educational science edition)20.4(2002):28-38.

[8] Harwell.H. Teacher professional development : It’s not an event，it’s a process［M］.CORD，2003.M.