



Interactive teaching based on equal probability principle from the perspective of social work

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Abstract. Based on the equal probability principle of statistical random events, this paper puts forward 'random interactive teaching' from the perspective of social work, lists the application strategies to realize random equal probability participation, and clarifies that it promotes the development of students' multiple intelligences with the advantage of situational symbiosis, so as to promote the realization of educational equity.

Keywords: Equal principle probability of statistics, Social work, Interactive teaching.

1 Introduction

Social work starts from acceptance, respects the existence of human value, focuses on the overall interface of 'people in the situation', focuses on tapping people's potential and advantages, dialectically treats problems and advantages with systematic thinking, and links resources of all parties with professional methods such as case work, group work and community work. Mobilizing all forces has played a professional advantage in promoting community residents' participation and community residents' integration.

Returning to classroom teaching and thinking carefully, the value concept of social work coincides with the teaching concept under the new curriculum reform of quality education. The professional methods of social work and classroom interactive teaching methods also have similarities. In particular, it has unique advantages in mobilizing students' enthusiasm and initiative, practicing students' subjective view of students, and activating classroom atmosphere.

Lijun Zhang proposed that games and activities can be introduced into classroom teaching to increase the participation of students^[1]. Lianjun Chen put forward the guidance-interactive teaching mode by referring to the relevant basic theories of constructivism theory, and strived to create a benign interaction between teachers and students and between students and students in an open classroom teaching atmosphere^[2]. Haigui Su emphasized various forms of positive interaction and participatory learning between teaching and learning^[3]. Under the guidance of learning pyramid theory, Tingyu Jia et al. constructed a new interactive teaching mode, which realized

the deep integration of teaching and technology through information technology, and effectively promoted the multi-level and multi-agent interaction in the classroom^[4].

In this paper, social work and quality education are closely connected. Based on the principle of equal probability of statistical random events, this paper puts forward a 'random interactive teaching' model that is not restricted by subjective factors and promotes equal probability participation, so as to promote classroom participation and promote educational equity.

2 The core concepts and theories

2.1 Equal probability principle

As stated in statistics, under certain conditions, the emergence of things is only possible but not inevitable. The so-called possibility but not necessity means that there are more than one results under certain conditions. Therefore, the emergence of any of these results can only be said to have a certain possibility, contingency or randomness. The random phenomenon is uncertain and random, but it is not irregular. With a lot of repetition and observation, the results show the inevitable regularity^[5]. This rule means that in all possible results, each result has the same possibility, that is, the same probability, which is the principle of equal probability.

2.2 Random interactive teaching

Random interactive teaching is based on the principle of equal probability, and strives to make every student have the same probability of being drawn to participate in the classroom. All students in the teaching class are regarded as a whole, and each student is regarded as an element, and simulate the application of simple random sampling methods and processes^[6]. Through multiple random changes in position, a sample of students participating in the classroom is formed, and innovative permutations and combinations are carried out to break the teacher's subjective inertia of 'grading and grading' students in tangible and intangible ways. Ensure that each student will have multiple positions and roles, creating unlimited possibilities for the classroom.

2.3 Social Work

Social work is a helping service activity guided by altruism, based on scientific knowledge and using scientific methods^[7].

3 Correspondence of values and professional methods

Quality education is an education that promotes the development of students 'comprehensive+personality' on the basis of recognizing and respecting the regularity of all students and the differences of individual students. 'People-oriented' is the fundamental attribute of quality education. Adhering to 'People-oriented' is to respect the main

position of students 'education and teaching, care about students' emotional development, and trust students' growth heart^[8].

The core of social work values is altruism, that is, to help others and serve others as the goal of their own actions. That is to respect the commonness of the crowd, but also respect the characteristics and personality of different individuals, while not curing people, believe in the potential and initiative of people to change^[9].

From this point of view, to some extent, the values of quality education are the application of social work values in the field of education. It can also be said that the values of quality education are not only applicable to school students, but also to everyone in society. The correspondence between the values of social work and the students' view of quality education is shown in Table 1.

Table 1. Correspondence table of value concept

Social work value	Quality education student view
Altruism (<i>respect, acceptance, self-determination</i>)	People-oriented (<i>students are the main body with independent significance</i>)
Believe that people can change	Students are people of development
Everyone is unique	Students are people with personality and difference

And not only the teaching idea, teaching methods and professional methods of social work also have something in common. Conversation method can correspond to case work, group discussion can correspond to group work, and class teaching method can correspond to community work. The corresponding relationship between the two specific methods is detailed in Table 2.

Table 2. Corresponding table of working methods

Professional methods of social work	Teaching methods
Case work	Conversation method
Group work	Group discussion
Community work	Class teaching method

4 The application of specific strategies

The core of random interactive teaching is to adhere to the concept that every class is a new class, abandon the teacher's inertial subjective judgment, break the students' self-setting limitations, create a random, unknown and new situation for teachers and students, mobilize the enthusiasm of students' participation, change and adjust the form and role of students' participation, stimulate the development of students' multiple intelligences, and ensure the dynamic and objectivity of students' evaluation.

So, how to realize the randomness of interaction? We can use ice-breaking games in social work, such as *the big wind blowing game* (see Fig.1 and Fig.2 below for details)^[10]. Allow students to interact randomly for many times, transform the micro-environment, build a variety of random situations, realize the multiple possibilities of

permutation and combination, improve students' situational coping ability, and truly improve students' practical spirit and innovation ability to cope with complex and changeable social situations.

4.1 Specific Example -Grouping

For example, when forming a learning group team, we usually ask the designated students to form a group or group them according to the position where the students are already sitting. In the random interactive teaching, when grouping, the class students are regarded as a whole, and the total group is numbered, so that the students randomly select the number of their own group, and the students with the same number form a group ; or let the students in accordance with the current position of the seat, the number of students to report a unified number of students into a group ; or according to the disrupted roster, the order of online check-in, the date of birth and other clues to conduct double-blind random grouping of teachers and students, fully break the original arrangement pattern of students, and form a new team combination.

4.2 Specific examples-classroom sharing

In the process of personal sharing in the classroom, for the selection of sharing students, teachers often select students with good or poor performance to ask questions and share. Random interactive teaching has no pre-set in the choice of students, but allows every student to participate in the possibility, while enhancing the interest of teaching activities, enhance the enthusiasm of students to participate.

You can use *the big wind blowing game*, let the students sit around a circle, select a certain feature to interact in any direction, and select the students to share (*the arrows in Fig.1 and Fig.2 represent any direction*); or by *drumming flowers* in the form of sharing to determine the students; or through *a group game of 5 fur and 1 block* to determine the sharing of students. The following is a brief sketch of *the big wind blowing game*. Teacher abbreviated as T.

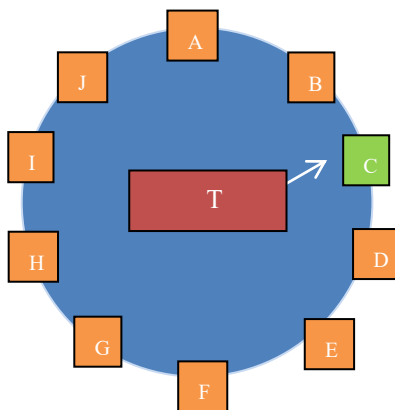


Fig. 1. The position of before interacting

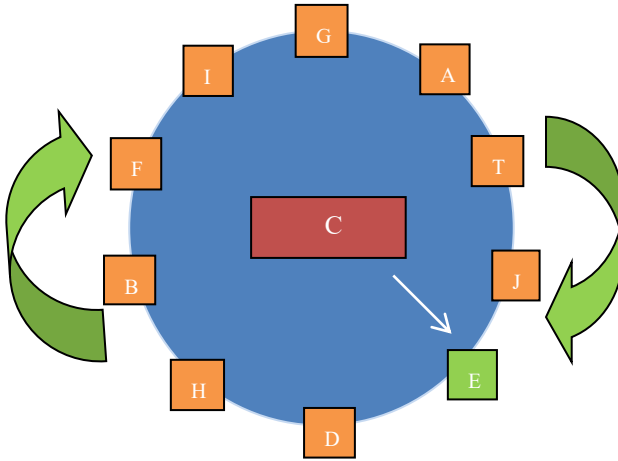


Fig. 2. The position of after interacting

5 Situational symbiosis promotes the development of multiple intelligences

According to years of teaching practice observation and student feedback records, one of the following data models is formed:10 students are randomly selected from a class, which are A B C D E F G H I J, A B classmates are good students, and I J classmates are poor students. The average frequency of students participating in the classroom is 10 times. Fig.3 and Table 3 are the average data comparison before and after the implementation of random interactive teaching.

Table 3. Comparison of the frequency /probability of participation before and after

Serial number	School mate	Frequency of participation (before)	Frequency of participation (after)	Probability of participation (before)	Probability of participation (after)
1	A	3	1	30%	10%
2	B	1.5	1	15%	10%
3	C	0	2	0%	20%
4	D	0	0	0%	0%
5	E	1	2	10%	20%
6	F	0	1	0%	10%
7	G	0	0	0%	0%
8	H	0	1	0%	10%
9	I	1.5	1	15%	10%
10	J	3	1	30%	10%

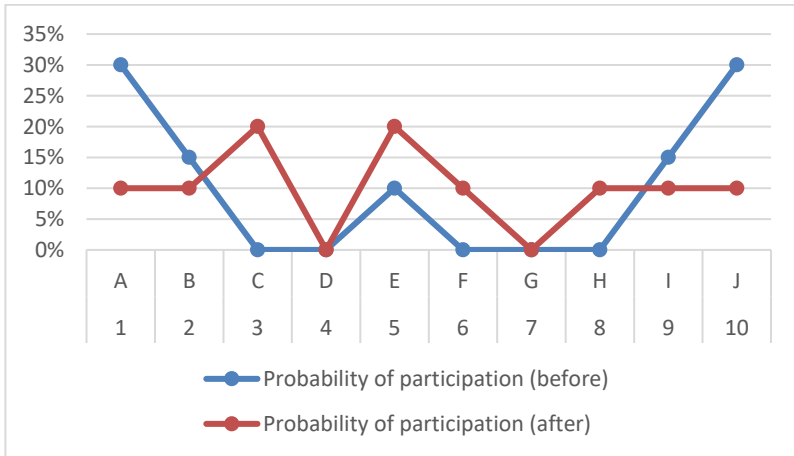


Fig. 3. Comparison of the probability of participation before and after

From Table 3 we can see that the frequency and probability of class participation of A B students with good grades and I J students with poor grades before the implementation of random interactive teaching is significantly higher than that of other students. However, after the implementation of random interactive teaching, as shown in Fig.3, the number and probability gap of 10 students' participation is narrowing, showing a trend of gradual equalization, which promotes the fairness of classroom participation.

Learning in fun, cooperation in the unknown, and random interactive teaching can make teachers and students educating people and cultivating soul symbiosis. It has played a unique advantage in stimulating students' multiple intelligence development, improving situational adaptability, mobilizing students' enthusiasm and initiative to participate, and creating a good classroom atmosphere.

6 Conclusion

Random interactive teaching is based on the principle of equal probability of statistical random events, combined with the theory of social work and quality education and its own teaching practice. It is an exploration of the concept of teachers under the background of new curriculum reform. It can make students stay focused at any time, form teamwork in the dynamic combination of multiple members, learn to adjust with team members, maintain multi-directional and multi-faceted interaction, effectively improve the flexibility of students' social interaction, and deepen and sublimate tangible education and intangible education.

It is worth noting that the application of some intelligent teaching software can also realize some functions of random interactive teaching, which can make full use of and extract experience, models and practices. At the same time, the theory of random interactive teaching is scattered and lacks system, which needs more verification of teaching practice and correction of educational theory.

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