[1]NEW TEACHING MODE SYSTEM IN THE INFORMATION AGE

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ABSTRACT

With the advent of the information age, great changes have taken place in China's traditional education mode, both curriculum standards and training objectives have changed, which makes the cultivation of mathematics core literacy become the focus of high school mathematics education. After the outbreak of the epidemic in 2020, the face-to-face courses of traditional education were transferred to online, which accelerated the promotion of the new teaching mode. In addition, the national strong foundation program included mathematics as a basic discipline in the special enrollment plan, which made finding a suitable new teaching mode to cultivate core literacy become a focus. Considering the advantages of flipped and smart classroom, the cultivation of mathematics core literacy and the real-time flexibility of teaching methods, this paper presents a C-ADE teaching design model with classroom as the coreand introduces a new teaching mode. Using the unique analysis method of the cultivation of core literacy, it is concluded that the new education mode has a significant advantage over the traditional mode in the cultivation of core literacy. Finally, this paper discusses the evaluation methods of education and teaching in the new era. It not only tests and supplements the C-ADE model, but also improves the new education and teaching system in the information age based on the cultivation of core mathematical literacy.

Keywords: Core literacy of mathematics. discipline new education. teaching evaluation.

1、 TEACHING PURPOSE: CORE LITERACY
(1) Introduction to core literacy

In 2020, the revised *mathematics curriculum standard for senior high school* makes it clear that senior high school should focus on cultivating students' core literacy such as mathematical abstraction, logical reasoning, mathematical modeling, intuitive imagination, mathematical operation, data analysis, etc. At this point, the core literacy of mathematics discipline has formally appeared in the eyes of people in the world.[1] We know that the construction of mathematical system has different perspectives, so the division of core literacy will be different. The core literacy of mathematics is generally based on the subject knowledge, sublimating mathematical thinking in the process of thinking, and then thinking about the world with mathematical thinking, that is, abstract mathematics in the world, and number sense world in mathematics. Therefore, the division of core literacy is in the final formation of literacy, through the observation and role of the subjective world, according to the function of the division. According to the relationship between mathematics and the outside world in the new era, this paper thinks that it can be divided into three parts: the bridge connecting elements composed of mathematical abstraction and mathematical modeling with the function of number sense and abstraction; the internal complete elements composed of logical reasoning and mathematical calculation with the function of improving knowledge and method system; and the function of presenting and analyzing external elements Data analysis and intuitive imagination constitute the external transformation elements.

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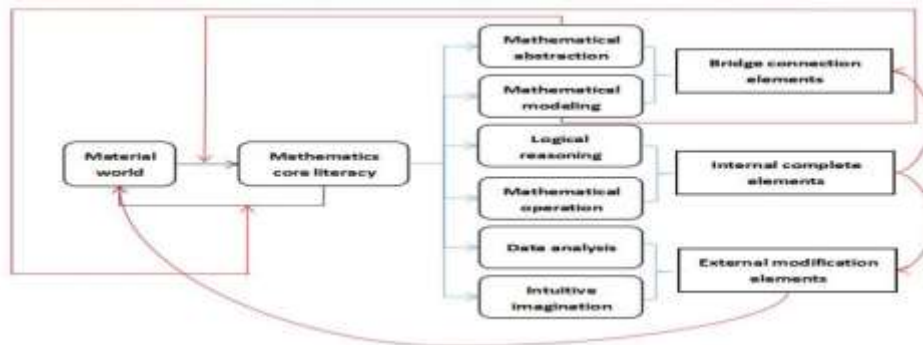
(2) The significance of cultivating the discipline core literacy in the new era

In recent years, with the implementation of the people-oriented education concept and the "strong foundation program" enrollment plan, the cultivation of high school mathematics core literacy is becoming more and more important. The goal construction of high school mathematics core literacy is not only to cultivate students to gradually form the core literacy ability to adapt to personal life-long development and social needs in the education stage, but also to enable students to strengthen basic knowledge at the same time Learn mathematical methods and thinking, form mathematical knowledge network through thinking, and then react on basic knowledge to build a systematic and flexible ability to solve problems, so as to better make the core quality is produced in the process objectives, from the process objectives to cultivate. At the same time, the proposal and implementation of the core literacy has opened a new chapter of high school mathematics curriculum reform in education, making education gradually realize the change from syllabus to curriculum standards, and from knowledge-based to people-oriented. The cultivation of mathematics core literacy in education promotes the perfection of mathematics education.

2、 Instructional design: Discussion on c-ade model

Based on the summary and induction of smart classroom, new teaching and flipped classroom, considering the current education purpose and the whole process of education and teaching, in order to ensure the real-time teaching and the flexibility of teaching, this paper puts forward a new ade model centered on the classroom, namely analysis, design and evaluation On the basis of[2], the core status element of education class is added to form the c-ade model. Next, we will introduce the specific process of the model and the content of education and teaching.
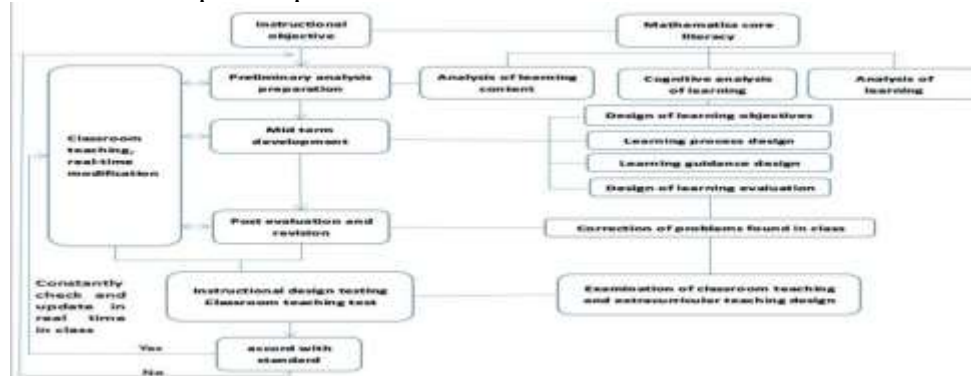
(1) Analysis of learning content

First of all, we should pay attention to the history of pedagogy and the history of mathematics development, so that students can understand the intrinsic beauty of mathematics. At the same time, we should pay attention to the combination of mathematical content and realistic situation, highlight the external beauty of mathematics, deepen students' understanding of mathematics and the cultivation of interest, and improve their aesthetic ability. Secondly, in the content

teaching and mathematical thinking construction, we should consider how to teach the mathematical content and how to build the core literacy of mathematics in the process of content teaching and learning. Third, in the correlation of mathematical knowledge, we should pay attention to the core literacy and the relationship between various types of knowledge, so that literacy and knowledge are connected with each other to form a mathematical system. Finally, we need to pay attention to how to make the knowledge and literacy of mathematics have a long-term impact on students' life.[3]

(2) Cognitive analysis of learning
The first is the cognition of students' original basic knowledge. Only by mastering students' cognitive level can we effectively carry out teaching design and orderly teaching. At the same time, we should pay attention to students' physiological and psychological cognition in addition to knowledge. Secondly, we should understand students' most adaptive knowledge learning methods and the potential and training methods of autonomous learning ability. Finally, we should pay attention to the existing problems of students and the differences found in flexible teaching at any time in the classroom, and then change the teaching design to teach students in accordance with their aptitude.

(3) Analysis of learning environment:
The first is the physical environment. After the development of teaching in the information age, new media technology is widely used in classroom teaching. In the physical environment, we should ensure that the necessary conditions of the classroom are sufficient. Secondly, in the psychological environment that is classroom atmosphere, we should establish a harmonious and comfortable classroom learning atmosphere. Finally, in the ethical environment, we should realize the integration of school, family and social teaching, and fully solve the problems of social participation and teaching ethics in traditional teaching.[4]

(4) Design of learning objectives:
In teaching, we should find the construction method of core literacy, find the most suitable learning method for students, and find the method of cultivating self-learning and lifelong learning. Cultivate students' basic knowledge, basic skills, core literacy, and cultivate correct emotional attitude and values.

(5) Learning guidance design:
In classroom teaching, on the basis of basic knowledge and method teaching, students should be taken as the main body, and self-learning should be the basis of guiding teaching. People oriented guiding teaching should be carried out, in which the guidance of teaching content is the basic guidance, the guidance of mathematical thinking (the cultivation of core Literacy) is the advanced guidance, and the application of mathematics, problem-solving and life value are also discussed The sublimation guidance of mathematical thinking is the ultimate guidance. The purpose of the three-dimensional guidance is to cultivate new talents with core mathematical literacy throughout and guide life.

(6) Analysis of learning process:
According to the high school mathematics curriculum standard, the learning process can be divided into the combination of background, especially the actual background, and the stem theory is the best to have the characteristics of cross mathematical content, interdisciplinary and emotional attitude values[5]. On this basis, the existing knowledge is used to conduct preliminary analysis of the problem, and then propose conjectures, verify conjectures, and

cultivate mathematical core elements in the process And then use knowledge, thinking and core literacy to solve mathematics and interdisciplinary problems.

**(7) Find or find problems in class and correct them**
Although this link is the core of c-ade, it is also the key to ensure the flexibility. Through this link, the teaching design can be improved and modified in real time to ensure the effective implementation of the mathematical teaching design, and form a correct teaching that conforms to the development of students and the cultivation of core literacy.

(8) Testing and evaluation of teaching and instructional design
At present, the evaluation system of education is not perfect, and the evaluation level even lags behind the level of classroom teaching. The current teaching evaluation focuses on knowledge learning, so in the c-ade model testing, teaching evaluation is divided into the following core literacy evaluation and a new comprehensive education evaluation including single content evaluation in class, comprehensive evaluation of extracurricular content and subject, knowledge expansion and problem-solving ability.

3、 Teaching implementation
Although education and teaching under the Internet has long been common, face-to-face courses are still the main way. But in 2020, with the spread of the epidemic in Jingchu, the abnormal rise of online courses and the large-scale opening of network teaching and learning resource library will promote the traditional "single face-to-face classroom model" to the information age, which integrates "self-study, classroom teaching and answer, knowledge exchange, mutual learning and innovation" New learning, applied learning "as one of the" new teaching mode "transformation. Under the new teaching mode, as the ultimate goal of education and teaching and moral cultivation, how to construct the core quality in the new mode is the key to education reform.
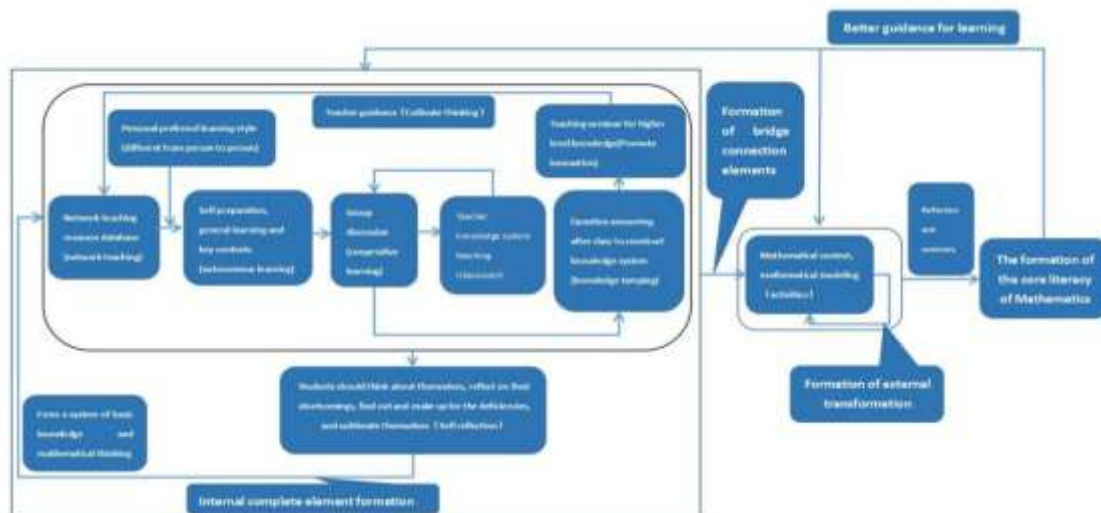
Based on the network education, this model further expands the network self-study course database, extends the extracurricular competition and other related activities, and uses self-learning reflection to connect all parts closely to form a learning system. The system holds that mathematics is a unity and takes the cultivation of students' core literacy as the ultimate goal of the subject. Under the new education mode, we can not only master the learning situation of the discipline, but also observe the cultivation of all aspects of the core literacy, so as to better realize the cultivation of morality and cultivate the core literacy of the discipline. [6] Through

the analysis of the learning process of the model, we can see that many problems of traditional education have also been solved.[7] [8] [9]

Problems in traditional education mode	Advantages of "new education mode"
a mountain of homework 、 waste time，As a result, knowledge is not systematic and flexible	Gradually progressive, do not emphasize mechanical memory, students can understand knowledge, flexible use and form a knowledge network
Fixed thinking, do not think and reflect on the principles	In the teaching of thinking to develop their own thinking, and ultimately reflect on the sublimation of thinking
There are no extracurricular training activities	In the teaching of thinking, develop their own thinking, and finally reflect on the sublimation of thinking, using mathematical competition, modeling competition, etc. to cultivate students' practical application ability
Students are not interested in the course content	In addition to the main classroom, other resources should be selected according to their own wishes and personality
Lack of autonomy	Emphasis on independent preview, autonomous learning and self reflection
Not strong autonomy, only knowledge, no thinking	Under the systematic learning, students have solid knowledge, can apply, can form mathematical thinking and improve Huawei's core literacy
There is no difference in the ability of different people to accept and ignore	Learning methods, except for the classroom, are self-choice, you can check and make up for deficiencies by yourself, by your own learning progress, and there are teachers to answer questions at any time, and network resources are always reserved
Confusion of subjectivity between teachers and students	The teacher only guides, the student is the main body study
Weak awareness of innovation and promotion	Take high level knowledge discussion class and extracurricular competition to achieve knowledge and thinking innovation
Single classroom education mode	Network resources + Classroom + group cooperation + Flexible question answering + discussion and innovation + extracurricular activities
Weak quality education	We should cultivate moral quality among teachers and students, and core quality in learning and activities

3、 Teaching evaluation:
(1)Core literacy [10]
Based on the six core qualities and soliciting the opinions of experts and scholars, this paper finally gives 16 test questions, and according to the grading system of ChemQuery evaluation system and the level division of mathematics core thinking in the appendix of curriculum standards, the three scoring systems and the corresponding level requirements of each core literacy are formulated.

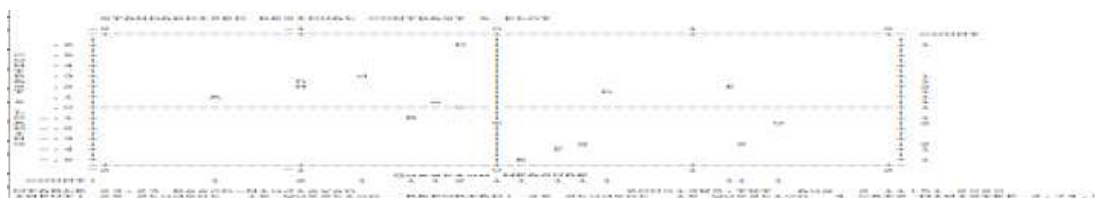|	Front structure level	Single point structure level	Multipoint structure level	Level of association structure	Expand the level of abstract structure
	Cognitive level of basic knowledge	The cultivation level of mathematical thought		Formation level of core literacy	
Mathematical abstraction takes function "as measurement object	Understand the basic concept of function, know the form of function, and be able to simply calculate the definition domain and value range.	Structure to solve the function problems in mathematics, to understand the similarities and differences of various functions, to be familiar with the properties of various functions and the relationship between derivative functions		Systematically grasp the relationship between functions, can clarify the internal relations between functions, and solve the problems related to functions; in real life, have the problem awareness of functions and master abstract thinking.	
Logical reasoning takes "proposition" as the measuring object	Understand what propositions are and what kinds of relationships exist between propositions	It can judge whether a proposition is correct or not, and can realize the relationship between propositions among a few propositions		Forming proposition knowledge network, can deduce propositions, verify problems, grasp the key of propositions, push to a series of related propositions, and form logical reasoning	
Visual imagination takes "geometry" as the measuring object	Understand the basic knowledge of dimension space and the basic structure of each space.	Understand the relationship between different dimensions of space, and can describe the space characteristics, and the corresponding location relationship and calculation.		It can form propositional knowledge network, be able to deduce and verify propositions, grasp the key of propositions, push to a series of related propositions, form logical reasoning, describe spatial images from basic descriptions, extract important spatial knowledge from them, and skillfully use spatial connections, prove and solve problems	
Mathematical operation takes "calculation" as the measurement object	Be able to understand the numerical characteristics of each number field and the existing	It can accurately recognize the operation that can be carried out in each number field and the operation is correct, and can carry out compound		Can complete abstract operation (such as function operation), and master all the principles, can find and correct operation mode in specific circumstances	
Data analysis takes "Statistics" as the measurement object	Can carry on the preliminary arrangement to the data, and master the general data processing	It can process the data and analyze the data briefly through the data index obtained after processing		Can process data systematically, and can integrate the data of various indicators and analysis, through the data and indicators can analyze the characteristics of the data	
Mathematical modeling takes application "as measurement object	Understand what is a mathematical model, what is the basic program of mathematical model	Can understand and use the model, can build simple mathematical problem solving method with simple steps, model solving problem		Be able to recognize and design models for practical problems, and solve problems in life through basic mathematical knowledge and interdisciplinary ability.	
Evaluation score (before reaching the structural water or blank is 0)	1	2		3	

26 students were randomly selected from a class in grade three of senior high school. The questionnaire was analyzed with winsteps of reach[11]

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>--------------------------------------------<
Standardized Residuals N(0,1)  Mean: .00 S.D.: .99
Time for estimation: 0:0:0.915
  Processing Table 0
Reach-NiuJiayan
--------------------------------------------------
| Student      26 INPUT      26 MEASURED       INFIT         OUTFIT    |
|           TOTAL    COUNT   MEASURE  REALSE  IMNSQ  ZSTD  OMNSQ  ZSTD |
| MEAN      24.2     15.9     -.23     .45     .98   -.3    .98   -.3  |
| S.D.       5.3      .4      .87      .11     .68   1.5    .71   1.5  |
| REAL RMSE  .46 TRUE SD  .73  SEPARATION 1.58  Studen RELIABILITY .71 |
--------------------------------------------------
| Question     16 INPUT      16 MEASURED       INFIT         OUTFIT    |
|           TOTAL    COUNT   MEASURE  REALSE  IMNSQ  ZSTD  OMNSQ  ZSTD |
| MEAN      39.2     25.9     .00      .34     .95   -.3    .98   -.2  |
| S.D.       8.1      .3      .81      .04     .44   1.5    .44   1.4  |
| REAL RMSE  .34 TRUE SD  .74  SEPARATION 2.14  Questi RELIABILITY .82 |
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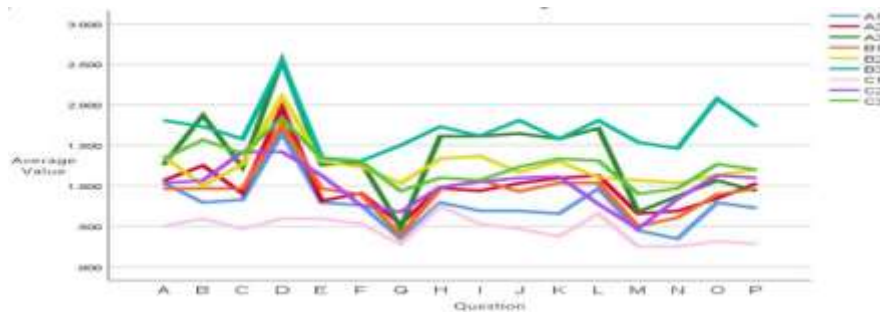
The item reliability of the questionnaire was 0.82, and the reliability of the subjects was 0.71. The consistency between the items and the subjects was relatively good. The item error and the subject error were 0.34 and 0.45 respectively. Combined with the actual standard error, the estimation of the ability and difficulty of the item was more accurate. The separation degree of the question is 2.14, which is representative. Although the separation degree of the students is lower than 1.58, considering the same class education quality, small difference between students and small sample size and other reasons, the separation degree is reasonable. When the standard score is set at 0, the average score is - 0.23, which is close to the average level, and the questionnaire is considered to be ideal. The single dimension of the project was investigated.


It is convenient for the subjects to compare the difficulty level of each item in the horizontal axis, namely, the degree of difficulty of the items in the middle of the questionnaire Difference table.

It can be seen that the correspondence between items and subjects is good, and most of them are at the average level. Although there is a student who has no project correspondence and no one answers a question, but considering that there are only a few samples and there are some special cases, it can be considered that the project and the subjects correspond well; through item fitting and error table observation, the project difficulty is between - 1.42 and 1.45, and the span is large and uniform It is distributed on both sides of the average level, and the project difficulty ranges from 0.3 to 0.37. Although the difficulty is relatively dense, the progressive effect is good, and there is corresponding project correspondence in the advanced level. The point measurement correlation coefficient was between-0.04 and 0.87, and 85% of the total number were more than 0.4. It can be seen that the questionnaire was well differentiated and reasonable. A school is a semi Information University, B school is a new teaching mode school, and C school is a traditional education university.

Through winsteps analysis, we can see that the reliability is 0.93 and 0.98 respectively. The reliability of the questionnaire is high, which has practical significance. The separation degree is 3.68 and 3.83, and the separation degree is good. Although the project is difficult, considering that the main test level is school B, the predicted teaching quality and core literacy cultivation are better, so the topic is slightly lower than the average Value can be used as a normal item to test. When there is no question in the questionnaire, the data collected from the questionnaire are divided into 16 questions with six core qualities in each grade of each school. The broken line diagram is as follows:

On the whole, the teaching quality of School B is the best, the teaching quality can be affirmed, and it can be seen that the school has the advanced learning difference depending on grade, that is, the cultivation of core literacy. Next, the analysis of whether the advanced level of the school is obvious can verify whether the method is in line with the current teaching. The significance of the difference of the advanced level is tested. Because the broken line chart shows that there are differences in the overall project level among the three grades of School B, the difference of overall advanced level is used to represent the core literacy of mathematics discipline. Through the analysis of the data by SPSS, it can be seen that the data basically conform to the normal distribution.
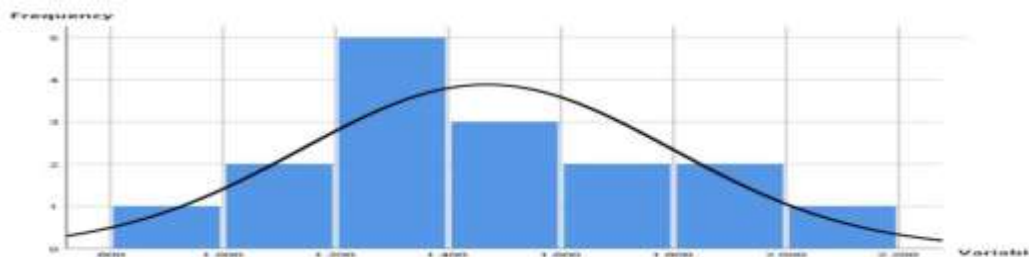
Paired sample test

	average value	standard deviation	mean value of standard series	lower limit	upper limit	t	freedom	Sig
Pair 1	-.319250	.154025	.038506	-.401324	-.237176	-8.291	15	.0000005532
Pair 2	-.766439	.229448	.057237	-.888435	-.644440	-13.391	15	.0000000018
Pair 3	-.447188	.236337	.059094	-.572590	-.321788	-7.601	15	.0000016080

For rigorous results analysis, 16 projects were re divided into six core competencies, and the significant differences were analyzed.

Pairing difference

	average value	standard deviation	mean value of standard series	lower limit	upper limit	t	freedom	Sig
pair1 Ma1-Ma2	-.313945	.083258	.048069	-.520769	-.107121	-6.531	2	.023
pair2 Ma1-Ma3	-.740842	.117502	.067840	-1.032733	-.448951	-10.920	2	.008
pair3 Ma2-Ma3	-.426897	.110257	.063657	-.700792	-.153002	-6.706	2	.022
pair4 Mo1-Mo2	-.444728	.010823	.007653	-.541972	-.347483	-58.109	1	.011
pair5 Mo1-Mo3	-.954945	.016318	.011538	-1.101555	-.808335	-82.762	1	.008
pair6 Mo2-Mo3	-.510217	.027141	.019192	-.754072	-.266363	-26.585	1	.024
pair7 Lr1-Lr2	-.309269	.068620	.034310	-.416459	-.200078	-9.014	3	.003
pair8 Lr1-Lr3	-.691621	.137481	.068731	-.910352	-.472890	-10.063	3	.002
pair9 Lr2-Lr3	-.382352	.126655	.063327	-.583888	-.180816	-6.038	3	.009
pair10 Si1-Si2	-.819729	.024532	.017347	-1.040138	-.599317	-47.256	1	.013
pair11 Si1-Si3	-1.854560	.016862	.011923	-2.006057	-1.703063	-155.544	1	.004
pair12 Si2-Si3	-1.034833	.007670	.005424	-1.103746	-.965920	-190.802	1	.003
pair13 De1-De2	-.278231	.035821	.020681	-.367216	-.189246	-13.453	2	.005
pair14 De1-De3	-.641026	.113948	.065768	-.924007	-.357904	-9.744	2	.010
pair15 De2-De3	-.362795	.147537	.085180	-.729296	.003707	-4.259	2	.051
pair16 Mn1-Mn2	-.519729	.024532	.017347	-.740138	-.299317	-29.961	1	.021
pair17 Mn1-Mn3	-1.425714	.038075	.026923	-1.767604	-1.083624	-52.955	1	.012
pair18 Mn2-Mn3	-.905987	.062607	.044270	-1.469407	-.343486	-20.465	1	.031

Through the observation of the core literacy of mathematics discipline, except for one problem of data analysis, which is slightly more significant than 0.05, other core literacy has been well cultivated under the new education mode. It can be seen that the education mode meets the requirements of the new generation of education standards. It can not only solve the impact of the epidemic situation on the Teaching Hall, but also cater to the strong foundation plan and talent training plan in the information age Maintenance policy.

(2)New evaluation

In order to make the evaluation more practical and instructive, and avoid the abnormal and abnormal in the actual examination, this paper uses prediction to replace the next examination result. For the blank data that has been missing, according to the average level of personal achievement and the advanced learning state, we fill in the vacancy data and finally get a complete set of 100 groups of data The difference form is given. Considering that the cultivation of core literacy has a progressive relationship with the development of time, SPSS is used to analyze the time series. The results show that there are no rules to follow and the results can not be predicted. However, there are abnormal and abnormal sample points, so it is assumed that the main data conforms to the normal distribution to discard the value beyond. The SAS normal distribution was confirmed as normal distribution.

In terms of educational experience, the average level of students will be the majority. For the current education and teaching, students' mastery of basic knowledge and the advancement of thinking are at their own specific level, so the scores will tend to this level, and the number of test sessions that fail to answer the self-level test questions and answer the questions higher than their own level will be far less than the positive The number of constant levels (as knowledge and thinking will increase with time in the learning process, it is assumed that the proportion of test questions corresponding to each difficulty gradient level remains unchanged in different periods of time). [12]

Take the i place with an average of μ_i, Take the j place with an average of μ_j, set up

$$x = \overline{x}_i - \overline{x}_j \sim N(\mu_i - \mu_j, \sigma_i^2/m + \sigma_j^2/n)$$

then $P(x \geq 0) = P(x - (\mu_i - \mu_j)/(\sigma_i^2/m + \sigma_j^2/n) \geq -(\mu_i - \mu_j)/(\sigma_i^2/m + \sigma_j^2/n))$, here m and n are the i and j constants respectively, Because it meets the standard normal distribution, the students are compared with each other by looking up the table, so as to confirm the ranking and get the probability ranking of each student: [13]

Student	Probability	Ranking
N	0.08155	1
L	0.079489	2
C	0.07728	3
B	0.075428	4
D	0.075293	5
M	0.074515	6
I	0.073494	7
K	0.073414	8
G	0.072534	9
H	0.070433	10
J	0.065519	11
F	0.065278	12
E	0.06184	13
A	0.064913	14

We got the predicted score ranking, and then provided a special questionnaire to the 14 students. The questionnaire included the comprehensive questionnaire level mentioned above, including subjective and objective questions and open questions, and had the characteristics of cross content, interdisciplinary, emotional attitude, etc. the assessment framework is as follows: choose to take four evaluation criteria for each student's level test.
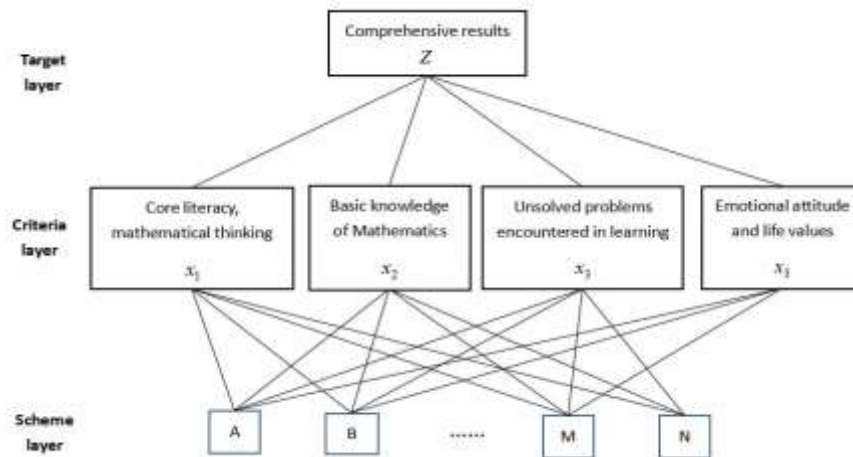
The pairwise comparison matrix formed by pairwise comparison of x_1, x_2, x_3, x_4 is constructed.

$$C = \begin{pmatrix} 1 & 3 & 6 & 4 \\ \dfrac{1}{3} & 1 & 3 & 2 \\ \dfrac{1}{6} & \dfrac{1}{3} & 1 & \dfrac{1}{2} \\ \dfrac{1}{4} & \dfrac{1}{2} & 2 & 1 \end{pmatrix}$$

The pairwise comparison matrix shows that the main diagonal elements are all 1, which means that each criterion has the same importance compared with itself. Meta $c_{12} = 3$ means that the core literacy and mathematical thinking are slightly more important than the basic knowledge criteria, and the ratio of 3 is used to measure its importance. Since the importance of core literacy, mathematical thinking and basic knowledge is measured by the ratio of 3, it is easy to know that the importance of basic knowledge, core literacy and mathematical thinking should be 1 / 3, that is, the c_{21} element of pairwise comparison matrix C. Because there may be inconsistencies between the elements of the pairwise comparison matrix, such as the element $c_{13} = 1/6$ and element $c_{32} = 1/3$ of the pairwise comparison matrix C, then $c_{12} = 1/18$ is correct, while the element $c_{12} = 3$ in a is the element, so there is inconsistency between the elements of the paired comparison matrix C. Therefore, it is necessary to check the consistency of the pairwise comparison matrix.

Firstly, the maximum eigenvalue λ of pairwise comparison matrix C is 4.0310. Secondly, the consistency index CI is calculated as 0.0103 by formula $CI = \dfrac{\lambda - n}{n - 1}$. The consistency ratio CR calculated by formula $CR = \dfrac{CI}{RI}$ was $0.0115 < 0.1$, which passed the consistency test. The random consistency index RI satisfies the following table.

n	3	4	5	6	7	8
RI	0.58	0.90	1.12	1.24	1.32	1.41
n	9	10	11	12	13	14
RI	1.45	1.49	1.52	1.54	1.56	1.58

Determine the weight of each criterion: calculate the eigenvector corresponding to the maximum eigenvalue of pairwise comparison matrix A.

$m = (-0.8964, -0.3658, -0.1253, -0.2169)$

It is obtained by normalization, $m^* = (0.5587, 0.2280, 0.0781, 0.1352)$, Through MATLAB, the weight of core literacy and mathematical thinking, basic knowledge, unsolved problems

encountered in learning, emotional attitude and life values to the target layer are 0.5587, 0.2280, 0.0781 and 0.1352 respectively. The pairwise comparison matrix P_1 of the core literacy and mathematical thought x_1 of each target layer a to n is constructed. Using the above method, the normalized eigenvectors can be calculated as

$$m_1^T = (0.0456, 0.0778, \cdots, 0.0629, 0.0927)$$

After calculation, CI = 0.0045, Cr = 0.0028 < 0.1, which passed the consistency test.

$$m_2^T = (0.0838, 0.0699, \cdots, 0.0590, 0.0549)$$

After calculation, CI = 0.0119, Cr = 0.0075 < 0.1, which passed the consistency test.
The unsolved problem in learning is the criterion that has negative effect on the total score. The bigger the range is, the smaller the comprehensive score should be.

$$m_3^T = (0.0523, 0.0737, \cdots, 0.1040, 0.0665)$$

After calculation, CI = 0.0222, Cr = 0.0141 < 0.1, which passed the consistency test.

$$m_4^T = (0.0433, 0.0819, \cdots, 0.0639, 0.0933)$$

After calculation, CI = -0.0025, Cr = -0.0016 < 0.1, which passed the consistency test.
According to formula $Z = m^* * (m_1^T, m_2^T, m_3^T, m_4^T)^T$, the normalized comprehensive score and comprehensive ranking of each student are calculated as follows: [14]

Student	N	L	J	H	F	B	C
Fraction	0.260969	0.241157	0.206898	0.197637	0.191606	0.171505	0.166992
Ranking	1	2	3	4	5	6	7
Student	D	A	E	G	K	I	M
Fraction	0.166421	0.141879	0.133012	0.128519	0.115472	0.110349	0.10948
Ranking	8	9	10	11	12	13	14

By comparing the original data and performance prediction, it can be seen that the original prediction not only shows that the prediction has errors, but also shows that the original evaluation (in the form of written examination and single examination) is unreasonable, and the current evaluation has obvious shortcomings. Moreover, the shortcomings of students can be observed through the new evaluation form (that is, the weakness of students' learning can be found through the change of weight).

5、 The shortcomings of the new teaching mode and suggestions for improvement

Through the detailed discussion of each process step of c-ade, the new teaching implementation and teaching evaluation, it can be seen that the new mode of education has a good effect. It provides a guideline and reference for the teaching design and implementation of the new mode of education and teaching in the information age, which greatly improves the current education and teaching evaluation, and gives full play to the education oriented and core literacy This paper discusses the new teaching evaluation in detail. It not only puts forward the double evaluation of teaching and teaching design in the teaching design evaluation design, but also finds out the students' learning places and models through the new prediction and weight distribution model in the evaluation of knowledge and thinking The lack of block, in order to facilitate timely reflection on students' education and teachers' teaching design, in order to carry out better education and teaching, better cultivate students, formed a new education and teaching design and evaluation mode. Of course, the current model is not perfect, and needs to be improved, supplemented and updated by new models and forms. For example, the types of teaching evaluation questions can be more abundant, and the division of criteria level can be more detailed, and the proportion weight matrix can give new data to achieve better education evaluation results.

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