Study on Quality Assurance System of British Higher Education

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Abstract. This paper is to analysis the history and development of higher education quality assurance system in the United Kingdom. It focuses on the QAA evaluation system and the application of its evaluation results. Besides, the quality assurance on overseas education programme by UK higher education institution is also discussed.

Keywords: Quality Assurance, QAA, Higher Education.

1. Introduction

At the end of the 12th century and the beginning of the 13th century, the establishment of Oxford and Cambridge University opened the curtain of higher education in England. For hundreds of years, British higher education institutions have been the model of academic freedom and university autonomy, and the internal evaluation system of higher education quality has always played a huge role in it. The establishment of University Grants Committee (UGC) in 1919 marked the intervention of external forces in the process of higher education quality assessment. After the Second World War, with the increasing importance and scale of higher education in the world, British higher education quality assessment system has experienced an evolution process from university autonomy to strengthening external control, and then to university autonomy as the main and internal and external combination. In 1997, the Quality Assurance Agency for Higher Education (QAA) was officially established, which has become the main body of the external evaluation system of higher education quality in the UK.

2. The Formation and Development of Higher Education Quality Assurance System in Britain

In 1919, UGC was established in the UK. The UK government began to provide funds to universities through this intermediary organization, but did not specifically intervene in university affairs. Universities are mainly responsible for the quality of university education. Since the mid-1960s, the British higher education has implemented a two track system, that is, higher education institutions were divided into universities and higher education institutions other than universities. Universities themselves were responsible for formulating academic standards and education quality assurance system, and relied on the off-campus examiner system to ensure the consistency of degree quality; other universities relied on the Council for National Academic Awards (CNAA), which is composed of experts from universities with the right to award degrees, to supervise and manage their degree awarding process, so as to ensure the comparability of their degree and university degree.

Since 1981, British government has set up an evaluation agency to strengthen the evaluation on performance of universities by external forces. In September 1983, the Committee of Vice Chancellors and Principals (CVCP) organized the Reynolds Committee to study the procedures and methods of supervising the academic quality and standards of universities, and published the University Academic Standards in 1986, which made it clear that CVCP should supervise the academic standards of the universities. In 1984, CVCP set up the Steering Committee for Efficiency Studies in Universities, and then the formal quality assurance system was introduced into the universities. In 1988, the new University Foundation Council (UFC) and the Polytechnics and College

Funding Council (PCFC) were established. Some business people were invited into the decision makers of the two councils, which showed a closer connection with the market.

In the early 1990s, the reform on higher education system began to brew in Britain. Since the external quality assurance measures under the original double-track system did not adapt to the social development, a single external quality assurance system must be established. In 1990, the Academic Audit Unit (AAU) was set up by CVCP, to carry out the evaluation on universities and to monitor the operation of the quality assurance system in the universities. After that, in response to the 1991 White Paper on the Framework of Higher Education, the UK formally established an external guarantee system for higher education quality. In 1992, CVCP established the Higher Education Quality Committee (HEQC), which replaced the AAU, hired senior scholars to carry out peer assessment on the academic standards and quality management of universities, and published the results publicly. The HEQC and Quality Assurance Committee (QAC) jointly guaranteed the quality of higher education in the UK. Since a double quality assurance organization itself has the problem of repeated work, the Higher Education Foundation Committee (HEFC) and HEQC were merged into British Higher Education Quality Assurance Agency (QAA) in 1997 after many consultations among various interest groups in higher education.

As a non-governmental organization to implement external evaluation, QAA mainly adopts the way of university audit, through the inspection of internal quality assurance mechanism of each university, and finally provides relevant information and suggestions for the formulation of various policies of higher education. In the early days of its establishment, QAA was criticized from all sides. First of all, because of the conflict between the external evaluation system and the strong autonomous culture of British higher education, many scholars have questioned the basic premise of QAA evaluation, believing that the evaluation itself deviated from the core value of British academic culture. It was even regarded as the most destructive control system invented by human beings. Secondly, QAA initially continued the previous discipline evaluation and college evaluation methods, which costed a lot of human and financial resources. According to statistics, in the early nine years of its establishment, QAA conducted 2904 field visits to 62 discipline areas funded by the Higher Education Funding Council for England, issued 2904 discipline evaluation reports and 62 discipline comprehensive reports, trained 5700 discipline evaluation experts and 98 assessment team supporters in total, which spent a lot of manpower and material resources. Thirdly, the credibility of the evaluation results was low. For example, the total score of QAA subject to teaching quality evaluation was set as 24 points, but the score of good subject was 23-24 points, while the score of poor subject was 20-22 points. The evaluation results could not be divided into different levels, leading to people's doubts about them. The dissatisfaction with the QAA assessment finally led the UK higher education quality assessment to enter the era of internal assessment, supported with external assessment, in January 2003.

3. Quality Assurance Agency for Higher Education

Founded in 1997, the quality assurance agency for Higher Education (QAA) is fully responsible for the quality assurance of higher education in the UK and provides the government and the public with fair, objective and accurate assessment conclusions. The focus of its audit is not to directly evaluate the teaching quality of colleges and universities, but to evaluate the effectiveness of the internal quality assurance framework of colleges and universities.

3.1 Responsibilities and Significance of QAA

QAA is an independent evaluation institution of higher education. It is the main body of the external quality assurance framework of higher education in the UK. It is mainly responsible for the audit of teaching quality assurance mechanism and academic quality of institutions of higher education.

QAA’s specific responsibilities include: cooperating with higher education funding institutions, teachers, students, employers, etc., safeguarding the interests of students and the general public,

maintaining academic standards and higher education quality; providing students and employers with information about academic standards and higher education quality so that they can choose or understand. At the same time, it supports the formulation of public policies, improves the management and guarantee of higher education standards and quality, and promotes the public to have a broader understanding of higher education standards and the nature of quality, including the understanding of relevant reference standards, other European countries and international practices, etc.

QAA quality assurance work is presided over by non-governmental personnel. The government is only responsible for formulating overall scientific research policies and controlling the amount of appropriations in terms of total amount, rather than involving in specific work. Therefore, through QAA and other quality assurance agencies, the British government has realized its indirect intervention and control over higher education.

3.2 QAA Evaluation System

In order to effectively carry out the quality assessment for higher education, QAA's assessment on higher education quality in the UK is mainly carried out through two systems: one is to organize relevant experts to formulate comprehensive assessment standards to provide guidance for specific assessment work; the other is to carry out specific assessment for research work in colleges and universities. These two aspects are closely linked.

3.2.1 Comprehensive Quality Assurance System

A. Qualification Framework

This is the academic standard and quality standard of British degree and degree. It divides the degree a of higher education into five levels, namely Certificate of Higher Education (Level C), General bachelor's degree (level I), Honorary Bachelor's degree (level H), Master's degree (level M) and Doctor's degree (Level D). It clearly defines the academic and quality standards of all levels of qualifications and degrees, and requires all colleges and universities in the country to adopt the name of academic qualifications and degrees specified in the framework. In this way, as long as the higher education institutions reviewed by QAA can award a degree or degrees in the framework, they can ensure that they have corresponding quality standards.

B. Discipline Benchmark

Discipline benchmark is the academic standard and quality criterion of all disciplines in colleges and universities in the country. It is the embodiment of academic qualification framework at the discipline level. QAA divides disciplines into 42 categories, including medicine, bioscience, chemistry, engineering, law, history and educational research. Each category has formulated corresponding basic academic standards and quality standards. The content of the discipline benchmark can be divided into three parts. The first part is the definition and description of the discipline. The second is the academic standards and quality standards of the discipline, including 3 - 5 levels such as excellence, good and qualified; the third one is the evaluation, which compares the students' performance with the standards in the benchmark for evaluation.

C. Program Specifications

Program specifications refer to the academic and quality standards of a major in a college or university, which are more detailed and specific than the qualification framework and discipline standards. QAA has developed a Program Specification Guide to help and guide universities to develop their own program specifications. The guide clear-outs the nature, characteristics, contents of each program specification, and the problems to be considered when formulating program standards, and also provides some program specifications prepared by different universities as reference.

D. Code of Practice.

In order to ensure the effective implementation of discipline standards and program specifications, QAA has formulated some specific rules to guide universities to understand and master various standards. The implementation rules consist of a series of volumes. These volumes cover a wide range of contents, such as program approval procedures, enrollment and admission, teaching management,

evaluation to students, graduate education, cooperative education, disabled students, off-campus supervision, off-campus institutions monitoring and review, employment education, information and guidance, etc.

3.2.2 Teaching and Research Evaluation System

A. Teaching quality evaluation

This evaluation system mainly assesses the teaching quality and students' learning status of the evaluated program, focusing on students' learning status and performance. It is divided into six indicators: curriculum design, content and organization; teaching, learning and and assessment; student progress and achievement; student support and guidance; learning resources; quality management and enhancement. Specific contents include: does the curriculum design achieve the expected results? are there clear learning outcomes? are students' achievements consistent with expectations and qualifications? are learning resources fully utilized? can each link of quality management be guaranteed, etc.

On the basis of the overall evaluation, QAA will make grade judgment on the results: A - the teaching quality is trustworthy; B - the teaching quality is limited; C - the teaching quality is not trustworthy. In addition, in the teaching evaluation, QAA attaches great importance to the learning opportunities provided by the university to students. For example: the development opportunities provided by teachers to students, the academic support and progress of students in the curriculum, the fair use and efficiency of learning resources (libraries, equipment, etc.), the adequacy of accommodation and teaching staff, etc. QAA also makes grade judgment for the evaluation results in this aspect respectively: A. Good - the conditions provided have substantial contribution to the realization of the expected effect, and all factors work well; B. General - the conditions provided can achieve the expected effect, but some shortcomings need to be overcome; C. Poor - the conditions provided have limited support for the realization of the expected effect, and substantive improvement is urgently needed.

B. Assessment of scientific research level

QAA attaches great importance to the evaluation of scientific research level in colleges and universities, in which the index system is also very detailed. From 2001, 69 disciplines were used as basic units in the scientific research evaluation. The information that colleges and universities need to submit for the evaluation includes: an overview of researchers participating in scientific research; details of on-the-job scientific researchers; scientific research achievements of each scientific researcher; information about scientific research environment, structure and policy; scientific research development strategy; number and source of scientific researchers, etc. In order to ensure the fairness and continuity of the assessment, the evaluation team shall prepare and publish a statement of its standards and working methods before each university submits its report, indicating the areas that the assessment team is most concerned about and hopes to focus on in the submission of assessment materials. Then, the team evaluates and classifies each submitted material according to a scale standard, mainly based on the proportion of scientific research achievements reaching international and domestic excellent standards, and divides the research quality of each school into 7 levels: 1, 2, 3a, 3b, 4, 5, 5*.

3.2.3 Application of Evaluation Results

Every university in the UK has a public annual report, and the annual evaluation results are published in the form of an evaluation report. The report contains the details of the assessment, the assessment team's judgment and suggestions for the future development of the university. The results of various reviews and appraisals are also made public. QAA publishes the evaluation results on QAA's website every year(www.qaa.ac.uk). The evaluation results of the level of scientific research (RAE) conducted by the Higher Education Funding Council of England or Scotland can also be consulted on www.hero.ac.uk/rae. In addition, some other UK higher education official websites will publish the higher education quality evaluation results in time. In this way, the public can know the situation of each university at any time. It not only facilitates the social supervision of higher education, but also is conducive to the choice of students, parents and employers.

4. Quality Assurance of Cross Border Education in the UK

British higher education institutions attach great importance to the quality and reputation of running schools. In order to standardize the cooperative education activities with foreign institutions, the UK higher education quality assurance institutions and higher education institutions have jointly formulated the industry standards for cooperative education. These norms not only guarantee the dominant power of higher education institutions in UK, but also lead or influence the formulation of regional and global norms.

British universities have a high degree of autonomy. As long as it is a legally established university, it has the right to be responsible for its own education quality, and in theory, it does not need the evaluation of other institutions. However, due to the different level of their school-running and historical development, there are some differences between British universities. Therefore, the establishment of QAA can be regarded as an important measure for the British higher education community to coordinate the quality assessment of higher education institutions and unify the quality assessment methods of higher education. Because of the high degree of autonomy of British higher education institutions, even as the main exporter of international education services, Britain has no special laws for its higher education institutions to engage in international education services, especially in the field of cooperative education. It is entirely based on the voluntary participation of higher education institutions, with independent non-governmental organization QAA to accomplish with the industry regulations.

In 1999, QAA formulated and published the evaluation criteria for academic quality standards of higher education. The evaluation criteria include two major aspects: higher education quality evaluation and higher education quality standard. It involves many aspects of higher education quality management, and consists of 10 interrelated parts, including enrollment, distance education, graduate education, external evaluation, professional evaluation and student evaluation. For many institutions of higher education, the evaluation criteria has actually become a code of conduct that should be followed in the provision of higher education services. The main basis of QAA's "review of overseas cooperative education" is the second part of the evaluation criteria: "cooperative provision and flexible and distributed learning" (hereinafter referred to as CEC).

As for the cooperative education of higher education institutions in the UK and those in other countries, there is no single standard or regulation in the UK. Therefore, the CEC is not only applicable to the cooperative education of higher education institutions in the UK, but also to the cooperative education of higher education institutions in the UK or with foreign education institutions. As the UK is the main exporter of educational services, CEC embodied all kinds of cooperation for UK higher education institutions in the guidelines, in which UK institutions are the educational qualification certificate issuing institutions. There are 10 aspects in CEC, which restrict and monitor the quality of cooperative education projects set up by British higher education institutions, including: the issuance of education qualification certificates and the quality of certificates; institutional policies, procedures and information related to cooperative arrangements; the selection of cooperative institutions and the signing of cooperation agreements; the selection of agents and the signing of agency agreements; education and teaching quality in school running activities; evaluation of learning; external evaluation of cooperative school running projects; issuance of certificates and transcripts; requirements for providing information to students; publicity and promotion of cooperative school running.

QAA's evaluation system for overseas cooperative education institutions and projects includes 6 first-class indicators and 19 secondary indicators. It has the following remarkable characteristics. Firstly, it focuses on students' participation and evaluation. Secondly, it aims to ensure that the quality of education provided by British educational institutions overseas is consistent with the domestic academic level, and emphasize the maintenance of quality and academic reputation. Thirdly, it requires to share the responsibility, which means higher education providers should actively build a quality assurance system, establish and improve the monitoring system, improve the quality of higher education and maintain the academic reputation of the UK. Fourthly, it emphasizes the management of risks. Fifthly, it takes different evaluation strategies according to the national conditions of

different countries and different project forms. Sixthly, it attaches importance to student complaints and safeguard the rights and interests of students. Seventhly, it emphasizes joint supervision, respect the autonomy of institutions, external and independent peer review; At last, it focuses on students' academic experience and learning results, which is conducive to ensuring the quality of learning opportunities provided by higher education, promoting the continuous and systematic progress of higher education, ensuring the openness and transparency of information in British higher education, and safeguarding the interests of students.

QAA's evaluation on overseas cooperative schools and projects can be divided into four key stages. The first stage is data analysis, including the offshore records of HESA in the UK, data of partners, auxiliary data provided by cross-border higher education in the UK and information collected by QAA on the activities of UK institutions. The second stage is desk-based analysis, in which the evaluated institutions are supposed to provide related existing documents, such as policy documents, internal reports, project information, meeting minutes, etc., and submits a briefing document to describe the supply of overseas education. The third stage is the review visit. In the way of peer evaluation, most teams, composed of two experts and one QAA official, will carry out field investigation. The number of team members will be adjusted according to the change of evaluation plan. QAA has a team of 400 experts from universities and colleges in the UK. Experts are selected by reference to their willingness and relevant expertise, such as knowledge or work experience in the countries or regions assessed. The expert team will meet the staff (senior managers, academics, administrators) and students of UK higher education institutions and cooperative institutions, investigate the experience and participation of students, and visit the partner institution overseas to find out the existing problems. The fourth stage is to publish the results.

QAA's evaluation on overseas institutions and projects as well as the suggestions for improvement are not summative. It will feed back the evaluation report to the evaluated universities, and publish it in the column "review of transnational education" on QAA website for public reference and supervision.

5. Summary

The British higher education system has been in the process of constantly adapting to social changes. In the past few decades, the mode of "multi governance" has been gradually formed between the central and local governments, and between the government and the intermediary. The guarantee subjects include both the government and the institutions entrusted or recognized by the government. The multi governance model enables stakeholders to balance each other in power distribution and operation. Under this mode, the tradition of autonomy and self-discipline in colleges and universities was characterized by the separation and organic unity of administrative power and academic power, showing a relatively stable running trend. British higher education quality assurance system has experienced a process from decentralization to unification, from focusing on external quality assurance to focusing on the establishment of effective internal quality assurance.

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Construction of Innovation System of Ideological and Political Education in Contemporary Colleges and Universities

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Abstract. In order to make a great achievement on the construction of innovation system of ideological and political education in colleges and universities in modern society, and so as to make a significant betterment on the innovation of ideological and political education at present, this paper comes up with a new and clear plan of the construction of innovation system of ideological and political education in contemporary colleges and universities, which observe the targeted principle and the scientific principle. The result of this research indicates that this new and clear plan of the construction of innovation system of ideological and political education in contemporary colleges and universities can help students shape their values and moral outlook, and can in a scientific manner make a significant transform on the ideological and political education in colleges and universities.

Keywords: Innovation System; Ideological and Political Education; Education; Teaching Mode.

1. Introduction

With the great development of technology and society, traditional teaching and learning mode cannot be in line with the development of society, to the effect that the traditional teaching and learning mode is behind the times. With a variety of advanced science technology introduced by human beings, overwhelming majority of people enjoy the convenience and development of technology in all walks of life. Hence, it is distinct that the ideological and practical education has to make a great and significant transform, and it is obvious that the combination of the advanced technology and the ideological and political education can accord with the requirement of people in every walk of life, which is the point that the author is going to explain and state in detail as follows.

2. The Connotation and Innovative Principles of Ideological and Political Education

2.1 The Connotation of Ideological and Political Education

When refer to the ideological and political education, we can have the way of knowing that it is related to the education, to be honest, specifically speaking, the ideological and political education, is not only a subject which is relevant to the education, which also is an activity which is connected with the pedagogy. In addition, the objects of the ideological and political education are members of society, and in essence, to the effect that the society and overwhelming majority of social group take the full advantages of to Ideas, political views, moral standards to make a huge difference to members of society on purpose, according to a plan and a goal, whose purpose is to make members of society can generate those thoughts which accords with the mainstream opinion in society, in other words, the society and overwhelming majority of social group seek to make all members of society subject to them, and have the thought activity which is benefit to the society and those social group. At the same time, it is worth noting that with the development of society and technology, the ideological and political education has been one of the most paramount importance of subjects in literature. In addition to that, the ideological and political education can have something to do with the social practice activities [1].

Fig.1 The connects of the ideological and political education

2.2 The Innovative Principles of Ideological and Political Education

At present, there are a new situation and a new atmosphere raising in current society, which has come up with higher acquirement for ideological and political education, which makes the major industries of the society have a remarkable transformation, which also make an requirement that the innovative principles of ideological and political education must have something to do with the new situation of the society. At the same time, the thought of the author's is that the innovative principles of ideological and political education include targeted principle, scientific principle, and so on.

For instance, in the construction process of the ideological and political education, targeted principle is one of as a matter of fact the most crucial portions. If the activities of the ideological and practical education have no clear objects, they could make a clear direction to promote the objects arrive the destination. At the same time, it is distinct that whether overwhelming social groups can reach their targets, which to great extent hinges on whether those social groups have the unambiguous goals and clear objects [2]. Only those social groups can choose correct objects and persist in making a great advancement towards the ultimate destination. Furthermore, in other hand, the targeted principle that followed by the ideological and political education has another meaning, which is to conduct the activities of the ideological and political education must conform to where it is. All in all, the targeted principle of the ideological and practical education has two implications, one is to construct the activities of ideological and practical education with a precise object, the other is to conduct the activities of ideological and practical education in accordance with the practical truth.

Furthermore, in the process of constructing the ideological and political education, the scientific principle is the crucial principle which must be obeyed by the activities of the ideological and political education. Referring the scientific principle, the author is convinced that almost every individual can understand deeply that the process of constructing the ideological and political education is to observe the natural law, and to seek to master the natural law and take full advantage of the natural law to achieve the goal which is set by the social groups. From a philosophical point of view, overwhelming majority of philosophers dedicate their lives to explain and study the natural law, and have the reflection on how to make full use of the natural law to make a great improvement on life quality of human beings. In a conclusion, the scientific principle goes through the process of constructing the ideological and political education completely. Only following the scientific principle, can we make a great achievement on the construction of the ideological and political education.

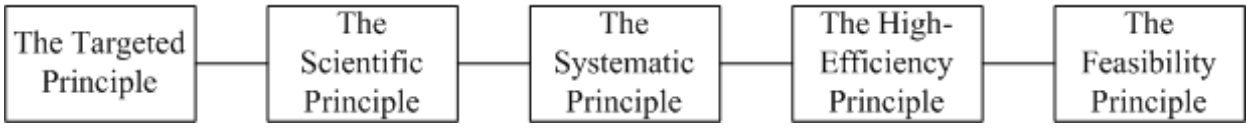

Fig. 2 The innovative principles of ideological and political education

3. The Paramount Importance of the Innovation System of Ideological and Political Education in Contemporary Colleges and Universities

With the transformation of the society and the development of our country, and the construction of the ideological and political education has becoming the most significant theme in our society. At present, our country makes every effort to make a correct and scientific guide on the construction of the ideological and political education. In a long run, ideological and political education makes a crucial different to the development of teenagers, especially in teenagers' characters and thoughts. Furthermore, we can even say that the significant importance of constructing the innovation system of ideological and political education in colleges and universities in modern society is no more than the significant importance of students' professional courses in colleges and universities. In terms of

the innovation system of ideological and political education, it can have a far-reaching influence on students' values in colleges and universities, or we can say that a good education on ideology and policy can shape students in colleges and universities in thoughts and characters, which can make students themselves meet the requirement raised by society and enterprises [3].

4. The Present Situation and Existing Problems of the Practical Activities of Ideological and Political Education in Contemporary Colleges and Universities

4.1 The Present Situation of the Practical Activities of Ideological and Political Education in Contemporary Colleges and Universities

With the development of economy and technology, the topic of how to conduct scientifically and correctly the practical activities of ideological and political education in colleges and universities in modern society has been deeply concerned by people from all works of life. In essence, in the process of education work and education activities, the practical activities of ideological and political education in colleges and universities at present is the vital importance of part, especially in the cultivation of talents, the comprehensive level and education level of colleges and universities, to the effect that the practical activities of the ideological and political education can make a prominent difference to the cultivation of talents, the comprehensive level and education level of colleges and universities. Nonetheless, at present, it is a less optimistic that present situation of the practical activities of ideological and political education in colleges and universities, which has an extremely distinct effect on two aspects, the details are as follows.

On one hand, overwhelming majority of colleges and universities, the ideological and political theory course all the time is the primary approach to constructing in a scientific and correct manner the practical activities of ideological and political education in modern society of colleges and universities. Nonetheless, overwhelming majority of teachers in an old and traditional way to teaching the ideological and political theory course, which results in the tedious classroom atmosphere [4].

On the other hand, the construction of the innovation system of ideological and political education cannot be attached paramount importance to by overwhelming majority of colleges and universities, and those colleges and universities mainly pay attention to students' professional courses.

4.2 The Problems Existing in the Practical Activities of Ideological and Political Education in Contemporary Colleges and Universities

In terms of the present situation of the practice activities of ideological and political education in colleges and universities, we can with little problem come to a conclusion that there are several prominent problems in the ideological and practical education in colleges and universities, the details are as follows.

First and foremost, the teaching mode and the classroom atmosphere of the ideological and practical education course is too tradition and tedious to be accepted with pleasure by students in colleges and universities, which brings about student cannot be guided and conducted in an correct and scientific manner, which ought to be transformed in the turn of a hand.

Second and equal importantly, the practical activities organized by colleges and universities are all the time in a monotonous manner, which cannot trigger that students can be interested in participating in the practical activities of the ideological and political education. Only more and more students in colleges and universities participate in the practical activities of ideological and political education, can we say that the practical activities of the ideological and political education make a hit.

Last but not least, with the great development of advanced technologies, those advanced technologies have been applied into the all walks of life and have made a hit in various field, which not only brings out the distinct convenience to every person, but also results in making great progress on the advanced technologies. Among them, it not uncommon that there is a huge impact on the

combination and development of the advanced technologies and the ideological and political education courses, nonetheless, it cannot be attached paramount importance to by society and overwhelming majority of colleges and universities, which leads to the significant convenience brought by advanced technologies cannot be felt by teachers and students, and it results in the less advancement on the practical activities of the ideological and political education course.

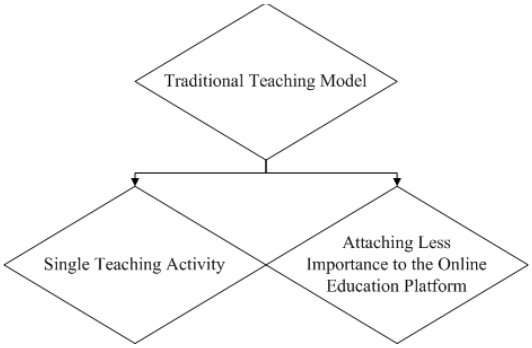

Fig. 3 The problems existing in the practical activities of ideological and political education in contemporary colleges and universities

5. The Construction of the Innovation System of Ideological and Political Education in Contemporary Colleges and Universities

With the great and significant development and achievement of advanced technologies and economy, overwhelming majority of people in all walks of life come up with higher requirement for the education, and more talented with comprehensive abilities and skills are cried for society and enterprises in every walk of life. Furthermore, the core of education is to make a great and significant cultivation on excellent talents with prominent thoughts and abilities. Hence, the most paramount importance of education is the ideological and political education, and at the some time, which ought to be transformed in modern society full of various advanced science technologies [5].

5.1 Innovating the Teaching Mode of Ideological and Political Education with the Assistance of "micro-course"

Human beings have made great and significant progress on the ideological and political education, and seek to make a great betterment on the combination of the advanced technologies and the ideological and political education. In addition, as a new product produced by human beings in 21th century, the “micro-course” is the paramount means of conducting and guiding scientifically and correctly the practical activities of the ideological and political education in contemporary society, which can create favorable classroom atmosphere for teachers to teach and for students to learn something about the ideological and political education course. At the same time, the introduction of “micro-course”, the teaching and learning process of ideological and political education course has changed and transformed a lot, and in the use process of the “micro-course”, not only teachers can enjoy the teaching fun, but also students can enjoy the learning fun, and specially speaking, teachers as well as students all can enjoy the development and convenience of advanced technology.

5.2 Conducting Campus Cultural Activities Related to Ideological and Political Education in Colleges and Universities

In the process of constructing the innovation system of ideological and political education in colleges and universities, colleges and universities must consider that how to make a correct and scientific guide on the constructing the innovation system of ideological and political education in colleges and universities. Additionally, campus cultural activities all the time are the spiritual hometown for students in colleges and universities. If colleges and universities can conduct campus cultural activities full of variety with rich and colorful theme, then the thought of the author’s is that it can allow students shape their values and world outlook in an correct manner, as well as it can make

students have correct methods to cure those problems. Specially speaking, carrying out campus cultural activities should pay attention to several points. For instance, the campus cultural activities ought to make efforts to rely on the local cultural resource, such as Red Culture, and are supposed to seek to hinge on the main contents of socialist core values. What's more, colleges and universities are supposed to attach paramount importance to the campus cultural activities, and combine the campus cultural activities with the ideological and political education, and make the two go ahead together [6].

5.3 Strengthening the Practice of Network Platform in Ideological and Political Education in Colleges and Universities

At the moment, the network has becoming an indispensable means for people, who take full advantage of the network to accomplish work full of variety and get various services in lives. What's more, with the advanced technology and society, human beings start to set up all kinds of network platforms in various field to assist themselves in work. At present, there are some common network platforms used to educate, which are Wechat Official Account, Weibo, MOOC and so on. Throughout these network platforms, teachers and students can obtain abundant learning resource and can achieve the distance teaching and learning, especially during the period of the epidemic.

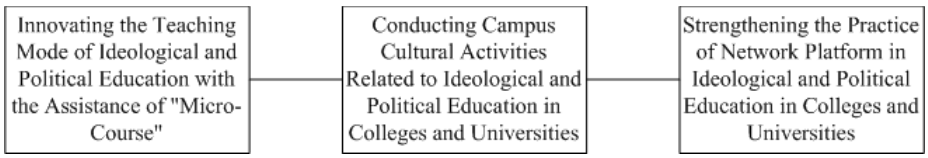

Fig. 4 The construction of the innovation system of ideological and political education in contemporary colleges and universities

6. Conclusion

From what has been discussed above, we may reasonably arrive at the conclusion that the innovation system of ideological and political education in colleges and universities at present can be line with the requirement of society and social groups in all walks of life, and what's more, constructing the innovation system of ideological and political education is beneficial to students in colleges and universities to shape their own values and moral outlook. In addition, the thought of the author's is that with the development of society, especially in technology and education, the combination of the advance science technology and the education will become a kind of mainstream when every individual can enjoy the development and achievement of advanced technology and education, and more and more talents with excellent abilities and characters will spring up.

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The Psychosocial Influencing Factors of the Onset of Adolescent Depression

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Abstract. Depression is also known as the depressive disorder with the clinical characteristics of a long period of depression, from feeling lost to feeling sad. What's more serious is that it can lead to suicidal behavior. The pathogenesis of depression has not been found so far, but it is known that it is mainly caused by the social environment, psychological factors, and physiological factors. The adolescent depression seriously harms the physical and mental health development of adolescents, affecting the progress of adolescent's academic performance and social skills. Therefore, it is of significance to find out the influencing factors of adolescent depression and put forward countermeasures. The factors that affect the onset of adolescent depression were analyzed and the corresponding prevention and treatment measures were put forward in this paper.

Keywords: Adolescence; Depression; Influencing Factors.

1. Introduction

With the continuous development of society, modern people are facing more and more pressure. While enjoying the rich material life, people's spiritual life is full of great challenges. More and more people tend to have mental health problems and depression has also become one of the main psychological problems. However, previous studies on depression focus more on adults and often ignore depression problems in adolescents. It is because most people regard the small fluctuations in self-evaluation during adolescence as normal things. Therefore, when adolescents feel a strong sense of helplessness and frustration, people do not pay enough attention to it, so that the problem of adolescent depression is more and more prominent [1].

According to the fifth edition of *The Diagnostic and Statistical Manual of Mental Disorders*, depression disorder includes multiple subtypes, such as disruptive mood dysregulation disorder, major depressive disorder (MDD), persistent depressive disorder (dysthymia, PDD), premenstrual dysphoric disorder, and so on. The most important clinical manifestation of depressive disorder is low mood and/or loss of interest or pleasure and adolescent depression patients may also be prone to anger. The loss of interest in adolescent depression patients usually begins with a loss of interest in learning. With the development of symptoms, patients almost lose interest in everything, accompanied by the ability to decline in experiencing happiness, which gradually leads to avoiding social activities.

Depression is one of the most prevalent and debilitating topics in the study of psychopathology; the World Health Organization (WHO) has ranked depression as the fourth leading cause of disability worldwide [2] and projects that, by 2020, it will be the second leading cause [3]. Depression is also associated with enormous costs at both the individual and societal levels; in fact, depression continues to be the leading cause of disability worldwide [4], accounting for almost half of disability-adjusted life years [5]. Finally, in addition to documented adverse effects of depression on interpersonal relationships, educational attainment, and financial security [6], the depressive disorder has been associated both concurrently and prospectively with poor physical health, cardiac problems, and cancer [7,8]

Moreover, in recent years, the number of adolescents with depression has increased year by year, with the prevalence rate as high as 4% to 8%. It is as high as 20% in late adolescence [9], which has drawn extensive extensions in the medical field. Besides, the number of adolescents with depressive symptoms who do not meet the criteria for a diagnosis of depression has increased significantly. Adolescent depression has significant gender differences. Prepubertal girls are more likely to suffer from depression than boys [10]. After puberty begins, the proportion of female depression is significantly higher than that of males (approximately 3:1). 60% to 90% of adolescent depression can

be relieved within one year [11-12]. However, several follow-up studies show that 40% to 70% of adolescent depression will recur within the next 3 to 5 years [13]. If not treated correctly, a significant portion of adolescent depression will continue into adulthood. Adult depression is often developed by adolescent depression, and it can also be believed that adolescent depression is an early subtype of adult depression. Adolescent depression suggests many mental health problems in adulthood. Therefore, is of great significance for the effective prevention and treatment of adolescent depression to fully understand the influencing factors of adolescent depression.

2. The Impact of Various Factors on the Incidence of Depression

Previous studies have generally attributed the causes of depression to psychological, social and biological factors and classified depression as a brain functional disease. The pathogenesis of depression mainly involves monoamine neurotransmitters, neuroendocrine, neuron injury and cytokines. In this paper, the following factors have certain effects on the onset of adolescent depression.

2.1 Family Factor

For each person, parents and other family members are the most important and influential people. In other words, they are the first teachers for every child, and all their actions seen by their children will be built into their kids, which means both good and bad actions would make impacts on how those kids live their lives.

In many countries and places, people still believe that male and female are not equal, but in these people's sights, males have higher status than females, which causes that girls who are born in unequal families usually do not get taken care of enough, even be blamed for no reason sometimes because of the inequality. In most cases, these girls who live under this inequality for so long would feel "self-abased", and stack up a sense of identity on whatever others have done to them, which means that they start to agree with people that they deserve the unequal treatment because of their gender. Therefore, when these girls grow up to the age of adolescence, it will be easier for them to develop depression, in recent research, psychologists found out that the possibility of depression being developed for girls is 3 times the one for boys. According to the *Gender Differences in Depression* says, women have less power and status than men in most societies, they experience certain traumas, particularly sexual abuse, more often than men. Even when women and men experience the same stressors, women may be more likely than men to develop depression because of gender differences in biological responses to stressors, self-concepts, or coping styles (Nolen-Hoeksema, 2001).

As a lot of kids growing up, or throughout their childhood, most of them have experienced more or less domestic violence. It does not matter how long the violence have been acted on the kids, although, there will be some psychological "marks" left on them that could cause depression. Especially when those kids get into adolescence, the period that the "marks" would affect them the most, the possibility of them contracting depression would become higher and higher due to the violence they have experienced.

If one or both parents in the family have or have had depression, it will increase the likelihood that children will develop depression. However, this does not mean that depression is a heritable condition, it only means that it can affect children more. According to *The Role of Pubertal Development in Emerging Depression Risk in Middle Childhood*, authors said in situations in which one of the biological parents was unavailable to complete a SCID the Family History-Research Diagnostic Criteria (FH-RDC; Andreasen, Endicott, Spitzer, & Winokur,1977) was used as an assessment of history of psychopathology. Most mothers (n = 202; 98.54%) and fathers (n = 183; 89.27%) completed the SCID. Sixty-eight mothers (33%) and 34 fathers (18%) had a lifetime history of either major depressive disorder or dysthymic disorder, composited into a single variable for each parent reflecting lifetime depression (The role of pubertal development in emerging depression risk in middle childhood; Mackrell, Kotelnikova, Jordan, Hayden).

2.2 Social Factor

Throughout a person's life, people that accompany them the most are families and friends, therefore, for everyone, friends would have a significant amount of impact on their lives. However, having friends that treat them friendly is not always the case in most people's lives. As everyone knows, wherever humans around have arguments, which points to school violence, the result of arguments and having not friendly "friends". School violence is moving into people's sights as it should be, and everyone starts paying attention to it nowadays. By researching, psychologists found out that school violence is a big part of why adolescents contract depression. As the *School-based Depression and Anxiety Prevention Programs For Young People: A Systematic Review and Meta-analysis* says, up to 20% of young people will experience a depressive episode or an anxiety disorder by the age of 18 years (Costello, Mustillo, Erkanli, Keeler, and Angold, 2003; Lewinsohn, Rohde, and Seely, 1998; Merry et al.,2011). Both depression and anxiety disorders tend to run a chronic and recurring course, with comorbidity levels of between 10 and 50% (Garber and Weersing, 2010; Kessler, Avenevoli, and Merikangas, 2001; Scholten et al., 2013).

As technology grows, the network is getting more and more popular and common in the society that we all live in, which indicates that, other than everything happening in real life, all sorts of things on the internet could change people's lives slowly. In recent years, network violence is growing as well as technology because people do not need to undertake any legal liability by doing that. People are getting used to express their negative emotions and criticize others or events that they are not clear with under a "fake," or more like a virtual identity that the internet provides, which leads to network violence, caused by people using their inertial thoughts to judge and their "keyboards" to censure with the words that they think fit the best. As what us, some bystanders of the most of network violence, could understand so far, network violence is just a type of "language violence" that people use to gain their "freedom of speech," but for those who are experiencing network violence themselves, it means that they have to suffer through a lot more criticism out of nowhere and without apologies. This kind of harm is usually the deepest for people and so hard to forget, which makes it be one of the main causes of adolescents 'depression.

2.3 Interpersonal Factors

Adolescent college students tend to have more active thinking, so that they have a lot of expectations for college life, with a wide range of interests, and the demand for interpersonal communication was constantly growing when they first enter universities. However, college students have a strong sense of interpersonal communication failure. In interpersonal communication, only children and college students with strong personalities tend to be self-centered, do not consider others, and are easily isolated in the process of communication with others due to their different growth environment, family background and personality characteristics. Introvert students lack the initiative of communication so that it is very difficult for them to adapt to the group life of college students. They will gradually form an isolated personality, which eventually leads to the formation of depression. In the communication with others, some students who are extremely mentally sensitive and vulnerable often feel unhappy because of what somebody said and misunderstand others, which will make it difficult for them to get along with others, resulting in the depression.

2.4 Emotional Factors

Most of the college students are in puberty, so they are still not fully mature in their psychological and physiological development and lack of a correct attitude towards love and sex. As a result, they are prone to knowledge and behavior deviation in love. They cannot think things over comprehensively with poor psychological endurance, also, they cannot deal with love problems well. Among college students, there are so many psychological problems caused by love problems, even suicide and the behavior of hurting others. College students, especially girl students are affected by idol dramas and novels so that they feel that love is just as what they expect. In the course of love, they require the other side to be single-minded, and to cherish them, love them and avoid them being hurt, just like the main character in the idol drama. However, in the course of love, especially in

college love, a break-up is very common. Some students are unable to bear the situation of breaking up with another person or the other person falling in love with another person, as a result, they are unable to extricate themselves from the emotions of entanglement, pain, and anger for a long time, and eventually commit suicide, hurt others or become depressed.

2.5 Personality Factors

Adolescents with depression have the following personality characteristics including unstable emotion, sensitivity, poor interpersonal relationship, withdrawal, low self-worth, a strong sense of inferiority, and lack of self-confidence. At the same time, they also have the following personality characteristics such as neuroticism, perfectionism, high dependence, and high self-criticism. And some traits have an impact on the onset, duration, and treatment of depression. [14] Therefore, personality factors are also important risk factors for adolescent depression.

3. Treatment and Preventive Measures

In stark contrast to the high morbidity rate of depression, less than half of the world's depression patients receive effective treatment. Without a doubt, common behavioral, emotional and physical symptoms in adolescence make it more difficult for parents to identify adolescent depression, which leads to delay in diagnosis and treatment. The key to adolescent depression is to improve recognition ability. Both the family and the school should pay attention to the emotional changes of the students. Once the students are suspected to have emotional problems, they should be immediately arranged to receive psycho-psychiatric treatment in time. The fundamental measure is surely prevention. The external factors related to adolescent depression mainly come from the high expectations of family, school and society for their children, too much study pressure, emotional problems in adolescence, family problems and interpersonal communication problems, etc. On the one hand, the pressure faced by adolescents is not less than that of adults, and on the other hand, adolescents lack proper frustration education, survival education, life skills, and independence ability training. Schools, families, and society should work together in these aspects to create a good environment for the healthy growth of the next generation.

The treatment of depression in adolescents should follow the principle of paying equal attention to antidepressant drugs and psychotherapy, and it is not correct to rely solely on drugs or psychological counseling. After the depression is alleviated and improved by drug therapy, psychological therapy can help the patients understand depression, change cognition, perfect personality, and enhance the ability and confidence to cope with difficulties and setbacks. Only in this way can the depression be cured. The adolescent is still in growth and development; therefore, many abnormalities of psychological behavior are only caused by derivations in the development process, which is easier to correct than adults. As a result, once the adolescents have problems, it is necessary to make them receive treatment in time to avoid the consequences that should not occur.

Psychotherapy mainly focuses on psychological support. In addition to giving love and encouragement to adolescents, it is also necessary to make adolescents feel and realize their capabilities that they were not aware of in the past, and to create as many opportunities as possible to make them experience success or to instruct children to recall successful experiences. In addition, it is required to create an active and friendly atmosphere around the patient and expand the patient's opportunities for interpersonal interaction through group activities. Symptoms can be alleviated if these measures can arouse the patient's interest, hope, and support the patient to promote confidence as well as awareness of participation and competition.

Drug therapy must consider various factors such as severity, suicide factor, uniqueness of individual physical and psychological development, environment and society. If depression is regarded as a metabolic disease, the treatment should be started from a metabolic abnormality, so that the treatment is targeted. It is necessary to pay attention to the following aspects including avoiding contact with allergens, rational use of antibiotics or painkillers, relieving stress, balancing nutrition, Chinese medicine and so on. Although antidepressants can make the patients get better temporarily,

the treatment effect of antidepressants alone is not good and can't cure depression completely. The main reason lies in the unclear understanding of the etiology and pathogenesis. In addition, because the condition of adolescent depression changes quickly, which are characterized by irritability, impulsiveness and suicidal behavior, those with serious depression need to be treated with electroconvulsive therapy as a necessary means to prevent suicide.

4. Conclusion and Prospect

So far, although great progress has been made in the treatment of depression, there are still many difficult questions to be solved in the two key areas of optimal treatment and individualized treatment. Therefore, further research is required to be conducted in the following fields.

It is necessary to further strengthen the psychotherapy research. We need to compare different psychological therapy, understand the differences between them, and make it clear how to select the appropriate psychological treatment means for a specific individual. The curative effect mediating factors, optimal treatment cycle, treatment frequency and the types of psychotherapy applicable to different stages of depression also need to be further studied. The outcome evaluation of psychotherapy research should not only focus on the changes of symptoms in the acute phase, but also on the persistence of curative effect and whether psychotherapy has a long-term preventive effect on the recurrence of diseases.

There is also a lot of work to be done in drug therapy. We are required to compare the efficacy of different drugs, understand the adverse reaction characteristics of short-term and long-term treatment of various drugs, and improve the combined treatment and intensive treatment strategies. It is also necessary to understand the efficacy of the above drugs in the treatment of specific subtypes of depression, such as depression with psychotic symptoms, to explore the relationship between blood drug concentration and curative effect and adverse reactions. The preliminary results of the second-generation antipsychotic drugs in the treatment of depression are encouraging, however, there is still a lack of research on the acute and long-term treatment of depression. Also, the definition and treatment selection of refractory depression need to be clarified.

Physical therapy research needs to be strengthened. Electroconvulsive therapy is still one of the most effective treatments means for depression. Other brain stimulation techniques (such as vagus nerve stimulation, deep brain stimulation, transcranial magnetic stimulation, and other electromagnetic stimulation methods) should be compared with electroconvulsive therapy. The overall prognosis of patients with depression can be improved by reducing the cognitive impairment caused by electroconvulsive therapy, accelerating the onset time of electroconvulsive therapy and optimizing the maintenance of electroconvulsive therapy. The optimal research of new brain stimulation therapy techniques (treatment processes, stimulation parameters) is necessary. Further study of phototherapy is also a clinical need, especially the efficacy of phototherapy as an adjunctive treatment for non-seasonal depression and the efficacy of maintenance therapy for seasonal depression are interesting areas. Complementary treatments, including acupuncture, also need to be studied more comprehensively. The role of physical exercise in the acute and maintenance period of depression, especially the role in reducing adverse reactions, improving function and improving quality of life is worth further exploring.

We must understand more about the pathogenic factors of depression to achieve personalized treatment for every person and even to realize the prevention of depression someday in the future. In the future, scientific research will focus on the predictors associated with the effectiveness of specific treatments and their adverse reactions. Research progress in genomics, proteomics, physiology, personality traits, individual experience, and comorbidity status and depression symptoms will help us understand the potential risk factors of depression and the regulating factor of mediated treatment effect. Patients should have access to and rely on these treatments even if they are offered perfect, individualized treatments in the future. Therefore, our research should also develop better ways to improve the availability of treatment, pay attention to the efficacy of treatment while focusing on the cost-effectiveness ratio of treatment and its impact on functions and quality of life.

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The Situation of the Unbalance of the Teachers of Compulsory Education in China and the Countermeasure Research

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Abstract. The balanced allocation of teachers is an important part of the balanced development of compulsory education, but there are imbalances in the allocation of teachers in compulsory education in China, which are mainly manifested in the imbalance of quantity and structure among regions, urban and rural areas and schools. After a deep study of the phenomenon of unbalanced allocation of teachers in compulsory education, the imbalance of economic development is the root cause of regional imbalance, the imbalance of social system is the main cause of urban-rural imbalance, and the imbalance of education is the main constraint factor. On the basis of investigating the phenomenon and analyzing the reasons, this paper puts forward the relevant strategies to promote the balanced development of compulsory education from four aspects: improving the relevant policies, increasing the investment in education, standardizing the flow of teachers and strengthening the training of teachers.

Keywords: The Imbalances in the Allocation; The Investment in Education; Compulsory Education; Teachers.

1. Introduction

With the continuous development of China's economy and society, people pay unprecedented attention to the issue of education equity. The balanced development of compulsory education has become a major strategic policy of the party and the state in the new historical period. However, the current situation we are facing is that the education level of teachers in different regions is very unequal.

For example, there is a big gap between universities with the same level of students. This is no doubt unfair to those students who have high learning talent but can't get good educational resources. For example, the current distribution of teachers in our country is polarized. In the big developed cities, the teachers in Colleges and universities are all graduates of famous universities. They have a wide range of knowledge and are responsible for the students. In the small cities or mountainous rural schools, their knowledge reserve is limited, even some teachers' Mandarin is not standard, which is not good for the students' learning Habit has a great influence.

There are many factors that affect the quality of education, but teachers play a leading role in educational activities, so the balance of teacher distribution is a very important part of the process of compulsory education equalization. How to effectively allocate teacher resources, realize the balance of teacher resources, and promote the balanced development of compulsory education is the focus of the reform of basic education in China, and the major topic of the whole society (SongLin Guan.). This paper mainly analyzes the current situation and causes of the imbalance of teacher's resources in compulsory education in China, as well as the countermeasures against these problems.

2. An Analysis of the Current Situation of the Imbalance in the Allocation of Teachers in Compulsory Education

The differences of teachers' level in different schools may be manifested in one or more aspects such as the number, quality and structure of teachers, among which the number of teachers includes the total number of teaching staff and the ratio of teachers to students; it is difficult to measure the quality of teachers, but it can be generally reflected by the indicators such as the level of education, educational experience and professional title of teachers; the structure of teachers' team can be broken down It includes subject structure, age structure, gender structure, proportion structure of teaching staff and teaching auxiliary staff, etc (DongMao Wen).

For example, in large cities in eastern China, each teacher teaches to no more than 30 students at the same time, and some classes assign assistants to supervise students' learning progress. In the rural suburbs of Western China, the number of students in a class is twice or even three times that of a class in the city. Teachers can't provide management guidance to the students in the whole class, which will greatly reduce the quality of teaching. Teachers who teach in cities need to pass all levels of examinations, such as teacher's qualification certificate, putonghua examination, etc., and their average educational background should be above undergraduate and graduate students. After entering the school, they still have to carry out a variety of assessment and evaluation, which can ensure the quality of teachers. And teachers in rural areas don't need so many rules and regulations. This is not only because no one will control how they teach, but also because most of the powerful and qualified teachers are reluctant to go to places where their living standards are not high and the environment is very poor to teach, so the teachers in these places are also very scarce. If someone is willing to teach for them, they will feel very satisfied, and I will not pursue quality problems.

In general, the imbalance of teachers is mainly manifested in the inequality of the number and structure of teachers.

2.1 Imbalance in the Number of Teachers

The imbalance of teachers' allocation in compulsory education is mainly manifested in two aspects: regional and urban and rural areas.

2.1.1 Regional Structural Imbalance

Table 1. Comparison of primary and junior high school students and teachers in East, middle and West China in 2018 Unit: %

Region	Students/teachers	
	Primary school	Junior middle school
Eastern regional average	16.36	14.71
Average level of central region	17.57	15.36
Western region average	18.73	17.00
National average	18.38	16.07

Through the data in Table 1, we can see that the average level of primary and secondary schools in the western region is sufficient, even exceeding the national average level; the average level of primary and secondary schools in the central region is relatively insufficient; and the average level in the eastern region is lack of three states.

2.1.2 Imbalance of Urban and Rural Structure

From the perspective of the imbalance between urban and rural areas, the imbalance of the allocation of teachers in compulsory education is mainly manifested in the aggregation and shortage of teacher resources: in some big cities, the phenomenon of overstaffing of primary school teachers is widespread, many teachers are short of class hours, and there is the phenomenon of invisible layoffs; in remote and backward rural areas, there are still a large number of substitute teachers who are not qualified as teacher.

Table 2. Distribution of primary school substitute teachers in urban and rural areas in 2018

Region	Number of full-time teachers / person	Number of teachers / person	Percentage of substitute teachers / %
Country	5612563	272282	4.85 %
Urban	903550	33231	3.68 %
Rural	3400420	209809	6.17 %

It can be seen that the rural substitute teachers are far more than the urban

substitute teachers; the problem of quantity imbalance is more prominent.

2.2 Structural Imbalance

In addition to the imbalance in quantity, the allocation of teachers in compulsory education also shows the imbalance in the structure of teachers, which mainly includes the imbalance in the structure of academic qualifications and the imbalance in the structure of professional titles.

We choose the central part of Beijing in the East, Henan and Guizhou in the west to explain the imbalance of regional structure of teacher allocation. The following table shows the educational background of the transferred primary school teachers in the three provinces.

Table 3. Education background of primary school transfer teachers in three provinces and cities in 2018 Unit: person

Region	Graduate student	Undergraduate	Specialty	High school	Under high school	Total
BeiJing	98	23854	18918	5188	134	48192
HeNan	100	36780	261579	181437	3133	483029
GuiZhou	9	5959	101778	78423	5822	191991

Through this table, we can clearly find that there are only 9 teachers with graduate education in Guizhou, and there are 100 and 98 teachers in Henan and Beijing, and there are many fewer schools in Beijing than in Henan and Guizhou. There are more teachers with the same undergraduate degree in Henan and Beijing than in Guizhou. However, the number of teachers with junior college, senior high school and below is far more than that of the other two provinces.

Table 4. Academic qualifications of transferred teachers in urban and rural primary schools and junior middle schools in 2018 Unit: person

School Type		Graduate Student	Undergraduate	Specialty	High School	Under High School	Total
Primary School	Urban	1558	280053	489080	130959	1900	903550
	Rural	388	224141	1765768	1366656	43467	3400420
Junior Middle School	Urban	6861	471469	179913	6226	212	664681
	Rural	1414	500437	837435	54748	1329	1395363

We can see that in urban primary schools and junior high schools, the education level of teachers is five or six times higher than that in rural areas. As the education level is getting lower and lower, the number of rural areas gradually exceeds the number of urban areas. There are 770691 people with junior college education or above in urban primary schools and 1990297 people in rural primary schools, which shows that the distribution of teachers' education is very unbalanced.

In urban primary schools, the proportion of full-time teachers of junior college and above is 85.30%. In rural primary schools, the proportion of full-time teachers with a college degree or above is 58.53%. Therefore, there is a big gap in the academic structure of urban compulsory education teachers.

2.3 Imbalance of Interscholastic Structure

In the same region, there are also significant differences in the professional title structure of full-time teachers between schools. The proportion of special grade and senior teachers in the key middle and primary schools is significantly higher than that in ordinary schools. In the survey of 898 primary and secondary schools in three provinces and nine counties in the East, middle and west of China conducted by the research center of education supervision and evaluation of the Central Institute of Education Science, the interscholastic gap between the proportion of backbone teachers in most

districts and counties and that in 1 / 3 Districts and counties is more than 10 times; the ratio of the extreme value of the proportion of teachers with professional skills at or above the intermediate level is up to 8.37 in primary school and 8.02 in junior high school. For example, in Jinan, there are 142 teachers and workers in a famous school, including 1 super teacher, 13 national backbone teachers, 1 national excellent team counselor, 1 provincial excellent teacher, 6 municipal excellent teachers, 2 municipal top 100 teachers, 1 municipal "famous teacher", 7 municipal teaching experts, 9 Municipal Excellent class teachers and 4 municipal discipline leaders. There are 73 teachers and workers in a district general school, including 1 municipal backbone teacher, 1 municipal excellent teacher and 1 municipal excellent class teacher. This shows that the structure of teacher allocation is quite significant.

3. Reason

3.1 Environmental and Economic Reasons: The Differences in Economy, Transportation and Social Security between Rural and Urban Areas

As one of the subsystems of rural economic and social development, the development of rural education is bound to be restricted by its own environment and economic development level. Compared with the city, the rural Xiangu is backward in many aspects, such as the economy, transportation, social security and so on. The natural environment limits the sources of information and the channels of teachers' communication, limits the vision and development space of rural teachers, and directly affects the improvement of the overall level of teachers and the quality of rural teaching. At the same time, because the overall income level of urban residents is higher than that of rural residents, urban residents can create better conditions for their children's education while meeting their basic living needs, while general rural residents do not have sufficient funds for their children's education investment. Moreover, due to the relatively backward rural economic level, the construction funds of rural schools are insufficient, but the teacher resources are reversed. Young teachers, especially excellent young teachers, are reluctant to teach in rural areas, which makes the development and improvement of rural education slow and widens the education gap between urban and rural areas.

3.2 Institutional Reasons: Key Schools, High Quality Resources

The "key school" system in the early days of the founding of new China was a system in which some elites received good education through fierce competition and selection, thus finding a shortcut for the cultivation of talents in many good provinces of the country, making great contributions to the cultivation of talents in China, but also leading to the unbalanced development of compulsory education. Key schools have gathered high-quality educational resources, trained top students, and gained their own development, but this development is at the expense of the development of non-key schools. It not only enlarges the imbalance of Teacher Allocation between key schools and non-key schools.

3.3 Policy Reasons: Urban-Rural Dual System, "Urban Center"

The dual system of urban and rural areas is the fundamental reason for the unbalanced development of regional compulsory education teachers. In line with the dual development system of urban and rural areas, China has gradually formed a value orientation of "urban center" in the field of education, leading to the inclined education policy in urban and rural areas, under the guidance of the policy of "hierarchical school running and hierarchical management". The government pays more attention to the construction of key schools and experimental schools, but less attention to some rural schools or school sites with a weak foundation. In fact, the degree and level of education popularization in urban areas are far higher than that in rural areas, and the financial resources, material resources and high-quality teacher resources occupied by urban schools are far higher than those of rural schools. This kind of policy guidance is the most direct and important reason for the imbalance of compulsory education, and also the important reason for the unbalanced development of teacher resources.

3.4 Reasons for the Investment Management System of Compulsory Education: "The Local Government Shall be Responsible for the Hierarchical Management"

The current investment management system of compulsory education in China is "hierarchical management. The proportion of local governments to share the funds of compulsory education is too large. More than 90% of the funds of compulsory education are shared by local grass-roots governments, while the proportion of provincial and central governments is relatively low. As a result, the development of basic education depends on the financial revenue of the local government, and the guarantee of compulsory education funds is reduced. Secondly, the current funding system of compulsory education in China is basically urban responsible for the city and rural responsible for the countryside. The funding of rural compulsory education is based on the most difficult county and township level finance. In this way, the gap between urban and rural financial income will inevitably lead to the gap between urban and rural compulsory education investment, thus affecting the allocation of teacher resources.

4. Relevant Countermeasures

4.1 In order to Promote the Balanced Development of Teachers in Compulsory Education, it is Necessary to Improve the Relevant Policies

4.1.1 Free Normal Students Policy

Since the new students who entered the school in the autumn of 2007, the state has implemented free education for normal students in six subordinate Normal Universities: before entering the school, the free normal students should sign an agreement with the provincial education administrative department where the students are located, promising to engage in primary and secondary education for more than 10 years after graduation; generally, the free normal students should return to the primary and secondary schools in the province where the students are located for teaching, and if they breach the contract, they should return the free education enjoyed according to the regulations The students who work in urban schools should first serve in rural compulsory schools for two years. The policy is committed to cultivating high-quality teachers for primary and secondary schools in underdeveloped areas of China, which is conducive to the balanced allocation of teachers for compulsory education in regions, urban and rural areas.

However, there are still some problems in the current free policy for normal students: in addition to the deployment of normal universities, provincial and local normal universities have not implemented the free policy, but they are undertaking the task of training more teachers in the central and western regions and rural primary and secondary schools; in the case of severe forms of employment for college students, free normal students have no worries about food and clothing and no employment pressure to some extent It will affect their learning interest and motivation. In this case, the state should improve the policy of free normal students, and gradually expand the scope of free to provincial and local normal universities. At the same time, we should strengthen the integrity education of college students, ensure the smooth and effective implementation of the policy of free normal students, and truly achieve the goal of balanced allocation of teachers in regional and urban and rural compulsory education.

4.1.2 Teacher Allocation Policy: Balancing Teachers

The balanced development of compulsory education teachers is mainly reflected in the fact that there are roughly equal teachers among schools. The status and reputation of the school are good or bad, and the salary is high or low. Teachers often try their best to transfer to a good school for personal development. If this situation is not stopped and guided, the gap between schools will be larger. Therefore, the local government should perfect the policy of Teacher Allocation from the following two aspects: first, every school in the same area should allocate teachers in strict accordance with the number of students and the actual needs of the school, so as to prevent the excellent teachers from focusing on the high-quality schools, while the weak schools are facing a serious shortage; second,

to ensure that every The academic structure of the teachers in the schools is basically the same, with the same subject leaders and backbone teachers.

4.2 Increase Investment in Education

4.2.1 Develop Regional Economy and Improve the Level of Local Education Investment

The regional imbalance of economic development is an important reason for the flow of high-quality teachers from the central and western regions to the eastern economically developed regions. Therefore, in order to balance the allocation of compulsory education teachers in the region, the fundamental measure is to vigorously develop the regional economy. At present, the regional differences in China's economic development exist for a long time and cannot be avoided. A reasonable and orderly flow of teachers is also a normal phenomenon of social development. However, for the central and western regions, only relying on the level of education input from the central and provincial governments is the long-term solution to the shortage of local education funds, and also can fundamentally avoid the loss of excellent primary and secondary school teachers, so as to achieve the goal of balanced allocation of compulsory education teachers in the region.

4.2.2 Establish a Special Allowance System for Rural Teachers to Balance the Allocation of Teachers in Urban and Rural Areas

From the perspective of balanced allocation of teachers in urban and rural areas, the central and local governments should continue to increase investment in rural compulsory education, accelerate the improvement and upgrading of rural compulsory education conditions, and realize the relative balance of urban and rural school conditions as soon as possible. In order to retain and attract more excellent teachers to teach in rural areas, the government should establish a special allowance system for rural teachers, improve the treatment of rural teachers, and narrow the huge gap between urban and rural teachers' income. At the same time, this special allowance should be attractive enough to attract more excellent graduates and teachers to teach in rural areas, so as to stabilize the existing excellent teachers in rural primary and secondary schools.

4.2.3 Promote the Construction of Standardized Schools and Balance the Allocation of Teachers between Schools

From the perspective of the interscholastic balance of teacher allocation, local governments should focus on promoting the construction of compulsory education standardized schools and balancing the interscholastic investment. The standardization of running a school is the product of modern civilization and an effective method. The standard of running a school means that the conditions of running a school at the stage of compulsory education in the same area reach the same standard: the school's hardware facilities such as playground, school building, teaching equipment and experimental equipment reach the same standard. First of all, the local government should establish the school running standard system of compulsory education schools, determine the minimum standard of school running, realize the relative balance of school running conditions, and eliminate the "survival difference" between schools. Secondly, the local government should eliminate the tendency of "key schools" in policy orientation, such as avoiding the tendency of high-quality driving resources to key schools, such as not taking the school hardware construction as the main index in the evaluation of compulsory education schools. In addition, local governments should increase special investment in infrastructure construction and purchase of instruments and equipment, and speed up the reconstruction of weak schools.

4.3 Standardizing the Flow of Teachers

The orderly flow of teachers can promote the exchange and dissemination of excellent educational ideas and teaching experience, promote the rapid growth of teachers' talents, and promote the metabolism of teachers. However, the flow of teachers in compulsory education in China is in a disordered state: the flow of high-quality teachers from economically backward areas to economically developed areas, from rural areas to cities, from weak schools to high-quality schools. The unnecessary flow of teachers in compulsory education is the main cause of regional imbalance, urban-

rural imbalance and interscholastic imbalance. Therefore, we must resist the disordered flow of teachers and standardize the system of teacher flow.

4.3.1 Promote Interaction between Urban and Rural Teachers

The interaction between urban and rural primary and secondary school teachers refers to the ensemble of urban primary and secondary schools and rural primary and secondary schools, which send teachers to each other's schools to study and teach. For rural students, this kind of interactive communication can let them directly enjoy the teaching of urban teachers and learn advanced educational concepts and teaching methods; for rural teachers, to study and teach in urban schools is a wider range of exchange and consultation. It can broaden the teaching vision, update the knowledge structure and improve the professional level, so as to promote the development of its own specialization. It can be said that the interaction between urban and rural teachers can effectively promote the overall quality of rural teachers, and it is of great significance to balance the allocation of urban and rural compulsory teachers.

4.3.2 Strengthen Interscholastic Communication of Excellent Teachers

It is an effective way to promote the interscholastic balance of the allocation of compulsory teachers and to carry out the interscholastic communication of excellent teachers. First of all, the excellent teachers in key schools can communicate and teach in weak schools, which can bring the advanced educational ideas, excellent teaching methods, and excellent teachers' traditions and teaching styles to weak schools, and play a role of demonstration and radiation. Promote the overall development of weak schools. Secondly, the exchange of excellent teachers from key schools to weak schools will help to play a leading role of excellent teachers in a wider range, effectively lead the rapid growth of teachers in weak schools, and improve the quality of the overall teaching staff. Third, the exchange of teaching between excellent teachers and weak schools can enable students in weak schools to enjoy the quality education of famous teachers and promote the balanced development of compulsory education.

4.4 Strengthen Teacher Training

Whether it is regional imbalance, urban-rural imbalance or interscholastic imbalance, a very important reason is the gap between the level of teachers. Therefore, the state and local governments should strengthen the training of teachers in compulsory education.

The training of rural primary and secondary school teachers can be done from the following aspects. First of all, the national education administrative department should issue corresponding policies and regulations to strengthen the planning and guidance of teachers training in rural compulsory education. Secondly, the local education administrative department should formulate the local rural compulsory education teacher training plan according to the reality, and set up special funds for the training of rural primary and secondary school teachers; for example, the UK set up teacher training subsidies to encourage the professional development of teachers. Third, build a variety of training platforms for rural primary and secondary school drivers, such as off-line training, online teaching and research, TVU education, etc.

In the face of the current situation that the level gap of teachers between schools is too large, the education administrative department should implement the weak school inclination policy of teacher training. First of all, to realize the way of pairing the weak school and the key school teachers, the excellent teachers of the key school help the weak school train the backbone teachers. Secondly, experts in the field of education are hired to guide school-based teaching and research in weak schools. Thirdly, we should carry out the key teachers' tour activities, pass on the advanced educational ideas and excellent educational ideas to the weak schools, and promote the professional development of the weak school teachers.

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Deep Learning in Target Detection

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Abstract. Target detection has always been an important issue in Computer Vision. In recent years, applications of deep learning in target detection have made a breakthrough progress. The development of deep learning applied in image classification stimulates the rapid progress in target detection. According to previous cases, the target detection based on deep learning is applied to various fields, including manufacturing industry, medical industry, car industry and so on. This paper compared traditional target detection algorithms with deep learning models applied in target detection. Then, the article will give a brief introduction of deep learning models Convolution Neural Network (CNN) [5], Deep Belief Network (DBN) [6], Stacked Auto-encoders (SAE) [7] and AlexNet [3] which applied in target detection, and the application progress of deep learning in target vision detection.

Keywords: Deep Learning, Target Detection, Image Classification.

1. Introduction

1.1 Target Detection

Target detection is an algorithm that is used to classify and localize objects in an image. With the increasing demands of people and society, digital images have become a big part of our life. Thus, precisely identifying the targets and acquiring accurate information in the image is becoming more and more important. A lot of application scenarios have embodied the practical value of target detection, such as the detection in the medical film, automatic driving, etc. In the following, because there are too many challenges in traditional target detection algorithms, this paper compared traditional target detection algorithms with deep learning models applied in target detection.

1.2 Traditional Target Detection Algorithm

The traditional target detection can be divided into three steps: region selection, feature extraction,and classification. Slide window is used to find the location of the target, but it contains defects. The whole image needs to be traversed by the window that directly leads to the high time complexity. Also, the window needs to set parameters. All these factors will influence the speed and the property of the next two steps.

1.3 Target Detection Algorithm based on Deep Learning

Target detection tasks can be divided into two sub-tasks: target classification and target localization. Target classification based on deep learning usually uses neural networks to classify, e.g.: An image is input to the neural network, and a labeled output will be given to classify this image. Then, bounding boxes are used to confirm the position of objects. The mainstream target detection models include one-stage and two-stage. In practice, the algorithm based on deep learning has improved the potency compared to the traditional method.

1.4 Challenges of Target Detection

1.4.1 Intra-class and Inter-class Differences

For many objects, it is hard to tell the differences between the detailed information among themselves. Different instances of similar objects may have huge differences on color, material, shape, etc. It is hard to train a feature description model that can contain all changes within the class.

1.4.2 Image Acquisition Condition

In the process of image collection, due to the differences in environment, lighting, weather and distance, etc. The apparent characteristics of the object in the image are diverse. It has high requirements on the robustness of visual algorithms.

Besides what has been mentioned above, both differences in semantic understanding and computational complexity and adaptability can lead to the deviation of the detection. [16]

2. Deep Learning

The earliest concept of neural networks can date back to 1943. Later, it has experienced two low periods. In recent years, deep learning has begun to have rapid development again.

The rapid development period is from 2006 to 2012. In 2006, Hinton proposed a solution to the problem of gradient disappearance in deep network training: unsupervised pre-training initializes the weights plus supervised training fine-tuning [1]. Since then, deep learning has attracted the attention of academia and industry. In 2011, ReLU activation function was proposed, which can effectively suppress gradient disappearance [2]. In the same year, Microsoft first applied deep learning to speech recognition and made a significant breakthrough.

The explosion period of deep learning has been from 2012 till now. In 2012, Hinton group won the championship through the CNN network AlexNet in the ImageNet image recognition competition[3]. It is because of the competition that CNN attracted the attention of many researchers. In the following years, with the continuous progress of the deep learning network structure, training methods and GPU hardware, it also got an important position in other fields. In 2015, the invention of DeepResidualNet greatly enhanced the expression ability of deep learning networks [4]. This method can easily train up to 150 layers of network.

Deep learning models currently applied to image recognition and analysis research mainly include convolution Neural Network (CNN) [5], Deep Belief Network (DBN) [6] and Stacked Auto-encoders (SAE) [7].

2.1 The Principle and Structure of Convolution Neural Network (CNN)

CNN [5] usually includes convolution layer,pooling layer and full connection layer.

Convolution layer uses convolution operation to extract the regional feature and get feature maps. Convolution has the characteristics of local perception, parameter sharing and multicore.

Pooling layer is usually connected behind the convolution layer. i.e. select the maximum or average value of an area to replace this area. In this way, the computational complexity of the data is reduced when retaining the data information.

Full connection layer is used to integrate the highly abstract features after convolution layers and pooling layers, then normalize them, and output a probability for all kinds of classification situations.

To sum up, CNN plays an important role in image classification.

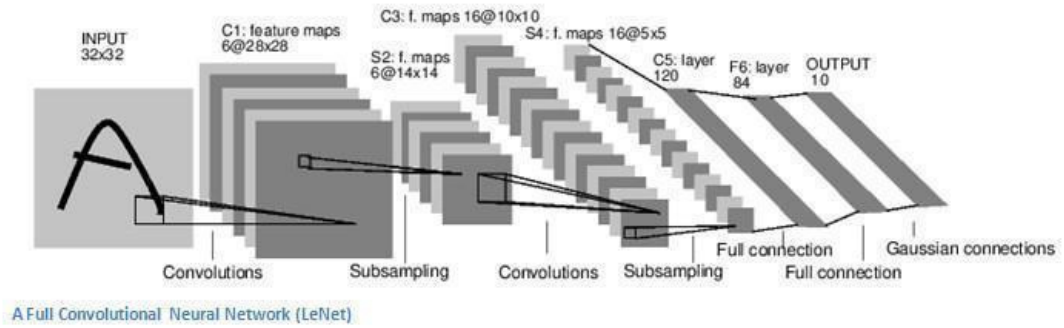

Figure 1: Basic structure of CNN

2.2 The Principle and Structure of Deep Belief Network (DBN)

DBN [6] is a probability generating model. Compared with the traditional neural network of discriminant model, the generating model is to establish a joint distribution between observation data and labels. In other words, DBN model evaluates both P (Observation|Label) and P (Label| Observation), while traditional model only evaluates P(Label|Observation).

DBN is composed of RBM (Restricted Boltzmann Machines). DBN network structure is limited to two layers: visible layer and hidden layer. The connection between the top two layers is undirected and constitutes associative memory. The bottom layers represent data vectors, and each neuron represents one dimension of the data vector.

The goal of training RBM is to find the best weight to get better feature expression.

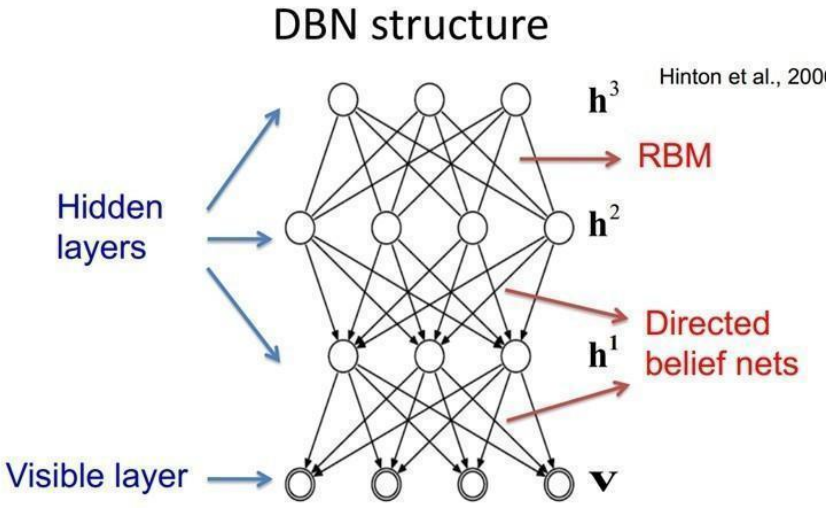

Figure 2: Basic structure of DBN

2.3 The Principle of Stacked Auto-encoders (SAE)

The essence of the SAE model is a stack of multiple auto-encoders. An automatic encoder is composed of an encoder and a decoder, which can reproduce the input signal. The purpose of SAE is to extract high-order features of input data layer by layer. In this process, the dimension of input data is reduced layer by layer, a complex input data is transformed into a series of simple high-order features, and then these high-order features are input into a classifier or cluster for classification or clustering [7].

3. The Principle and Structure of AlexNet

With the development of deep learning, people have applied profound learning to image classification and object detection tasks, and have achieved significantly better results than traditional methods in many competitors [3].

The appearance of AlexNet lays the foundation of other improved models, such as ZFNet, VGG, GooLeNet and ResNet [17], thus further improving the accuracy of the model.

There are 8 layers in the network structure of AlexNet. The first 5 layers are convolution layers, and the last 3 layers are full connection layers. The output of the last full connections layer is transferred to a softmax layer with 1000 channels, which represents the distribution of 1000 labels of classification. Since AlexNet uses two GPUs for training, the network structure is composed of twoparts, the upperpart and the lower part.

The features of AlexNet model are that the nonlinear activation function: ReLU is used to speed up convergence, the dropout method is used to prevent over-fitting, and the introduction of LRN (Local Response Normalization) and multi GPUs' training.

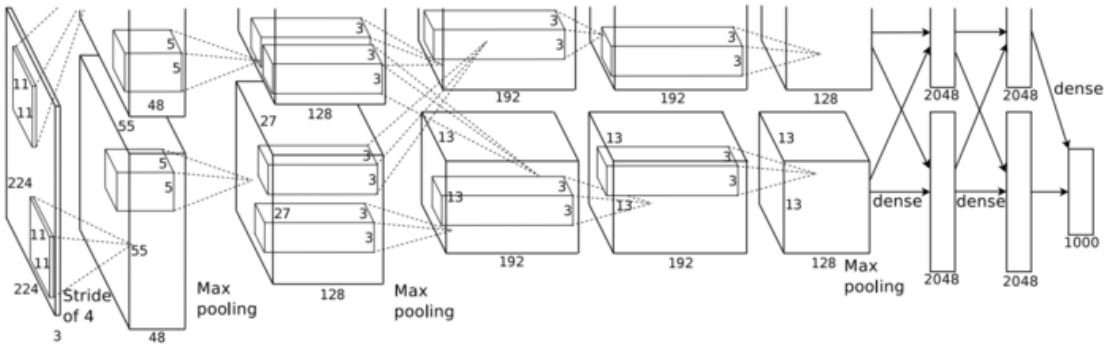

Figure 3: AlexNet Structure

4. Application Progress of Deep Learning in Target Vision Detection

The development of meaningful learning technology has greatly promoted the research of target visual detection. In this part, it introduces two major object detection paradigms: Two-stage detectors and One-stage detectors.

4.1 Two-stage Detectors

R-CNN [8] is a pioneering Two-stage object detector proposed by Girshick et al. in 2014. Compared to the previous state- of-the-art methods based on a traditional detection framework SegDPM [14] with 40.4% mAP on Pascal VOC2010, R-CNN significantly improved the detection performance and obtained 53.7% mAP.R-CNN can be divided into three parts: proposal generation, feature extraction and region classification. For an input image, R-CNN can generate a parse set of proposals (usually around 2000) by Selective Search.[15] And then, a deep convolution neural network is used to extract feature vectors. Before the extraction, each proposal should be normalized to a fixed size. The network structure is based on a fine-tuned ImageNet. The feature vector extracted by this network is a 4096 dimensional feature vector. Then, the feature vector is sent to the last fully connection layer (FC layer) to classify. This method which transfers knowledge through ImageNet dataset offers a significant performance promotion. Besides, R-CNN can remove huge numbers of easy negatives before training, which helps improve learning speed and reduce errors. However, the promotion is very limited. The following fast R-CNN [9] and faster R-CNN [10] have made rapid progress in speed.

4.2 One-stage Detectors

Compared with Two-stage detectors, One-stage detectors do not have the proposal generation process. All positions on the image are considered as potential images. The main algorithms of One-stage detectors have YOLOv1, SSD, YOLOv2.

YOLO (You Only Look Once) proposed by Redmon et al. [11] is a popular target detection at present. YOLO divided the whole image into some fixed grid cells. Each cell is considered as a proposal to resize and then sent to the convolution neural network to classify. As a whole, YOLO uses a single CNN model to achieve end-to-end detection. However, YOLO has limitations in detecting small and crowded objects and in predicting objects at multiple scales and aspect ratios.

In 2016, Liu et al. proposed another One-stage detector Single-Shot Mulibox Detector (SSD) [12] that addressed the limitations of YOLO. SSD also divide the whole into grid cells, but unlike predicting from fixed grid cells in YOLO,SSD generates a set of anchors with different scales and aspect ratios to discretize the output space of bounding boxes in each cell.

Based on YOLOv1, an improved YOLO version was proposed by Redmon et al., called YOLOv2 [13] which significantly improved detection performance, but the same time, still maintained real-time inference speed. YOLOv2 adopted a more powerful deep convolutional backbone architecture which was pre-trained on higher resolution images from ImageNet (from 224 × 224 to 448 × 448),thus the weights learned were more sensitive to capturing fine-grained information.

5. Conclusion

In this research, it is found out that the traditional target detection will influence the speed and the property of the feature extraction and classification, but the algorithm based on deep learning has improved the potency compared to the traditional method. The output of the images do not to be labeled manually that greatly increase the classification speed and the robustness of the algorithm. What's more, the development history of deep learning and the frequently-used deep learning models are mentioned in the above parts. At last, Two-stage detectors and One-stage detectors are written to havea review of deep learning algorithms that are applied in target detection, including R-CNN and YOLO. Hope this research can give readers a broad understanding of deep learning in target detection.

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Ideas on the Teaching Reform of the Financial Engineering Course

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Abstract. This paper briefly introduces the training objectives of the financial engineering course in the talent training program of application-oriented undergraduate colleges, and briefly analyzes the learners. At the same time, it points out the existing problems in the current teaching of the financial engineering course, such as the single teaching mode, lack of computer software operation teaching link, single assessment method is difficult to evaluate the learning effect, less extracurricular practice exchange, less simulated transactions in class and other problems. On this basis, the paper puts forward specific measures for the teaching reform of the course of financial engineering, such as the combination of theoretical teaching and case teaching, the combination of theoretical teaching and computer software application, classroom participatory teaching, the combination of teaching and practice, the reform of assessment methods, and the use of network teaching software and teaching platform.

Keywords: Financial Engineering; Application-oriented Undergraduate Colleges; Teaching Reform.

1. Introduction

The course financial engineering plays a vital role in the talent training program of application-oriented undergraduate colleges. The teaching objective of this course is to enable students to systematically understand and master the major new financial derivatives created by the financial community since the 1980s, such as financial forwards, financial swaps, financial futures, financial options, credit derivatives and their multiple combination technologies and techniques. It focuses on mastering the thinking methods of financial engineering and being familiar with using engineering methods to solve the financial problems in real production and life (mainly including the design, pricing, trading strategies and financial risk management of financial products). It aims to develop and cultivate the practical ability of financial innovation thinking and solving financial engineering problems, and improve students' ability of logical thinking and problem solving.

1.1 Literature Review

As the domestic derivatives market is just emerging, a variety of derivative financial products, technologies and means are gaining momentum, and the traditional single theory-based teaching method obviously does not fully meet market demand. For a long time, there are several obvious problems in the education and teaching of the financial engineering course for undergraduate students in all kinds of colleges and universities in China. First, in the whole teaching activity, it is completely teacher-centered, almost the whole process of teaching through teachers' teaching and students' listening. Second, the orientation of the course is not clear. Through the study of this course, it is not clear what theories and skills students should master and to what extent they can solve problems. Third, the teaching content is too rigid and overemphasizes the mastery of theoretical knowledge, especially in the subject of financial engineering, which involves many derivations of pricing formula. Students are generally faced with a bunch of pricing formulas, knowing but not knowing why. The economic meaning behind the formula and the use of the formula are weak, and it is often impossible to start using the basic theory in solving practical financial problems. And the teaching content is often limited to the selected teaching materials, the content is too narrow. This leads to the fact that the students we have trained often don't use much of what they have learned in actual work, and it's not uncommon for them to learn without use. It can be seen that the traditional teaching method of classroom instillation is difficult to meet the

needs of the society for talents to solve problems, and also difficult to stimulate students' interest in learning. In addition, the lack of knowledge reserve, the less extracurricular exchange activities and the single way of teaching assessment restrict the future teaching development of financial engineering. Therefore, the teaching reform of financial engineering course has become an urgent research topic under the application-oriented talent training mode.

In the construction of financial engineering curriculum, domestic scholars have made a more in-depth research and exploration. Junmo Guo (2016) analyzed the current problems in the teaching of financial engineering courses, and put forward countermeasures such as improving discipline construction, strengthening the construction of teaching materials and professional teachers, and focusing on training students' practical application ability. Qianli Ma and Qian Li (2016) believed that the teaching reform should take the practical teaching as the main carrier, appropriately adjust the course content, assessment methods and teaching methods, and take the continuous learning and innovation ability training as the goal. Jinxia Huo , Mansheng Li and Xueshi Li (2017) proposed to enrich the teaching content of financial engineering, guide students to reserve corresponding theoretical basic knowledge, classify teaching according to the differences of students basis, strengthen students' application ability from different links, and improve the teaching effect from different angles. Pan Zhao (2018) proposed to optimize the teaching content, adopt the teaching reform ideas of knowledge stratified teaching, attaching importance to case teaching, focusing on group discussion teaching, introducing network teaching, developing practical teaching, focusing on the renewal of their own knowledge, combining scientific research and teaching, and implementing multi-dimensional assessment. Lanlan Wan (2018) innovated the existing teaching methods from three aspects: the combination of theoretical teaching and case teaching, the combination of teacher guidance and students' self-study, and the combination of teacher teaching and practical application. In the aspect of the reform of the course assessment method, a multi-level assessment scheme is also given, in order to carry out systematic reform of the course of financial engineering from two aspects of teaching and assessment. Hanyun Lei (2018) respectively put forward teaching reform suggestions from the optimization of financial engineering teaching mode, financial engineering learning mode and financial engineering assessment mode. Jie Fang and Jiehui Li (2019) proposed to promote the construction of financial engineering courses and cultivate students' ability of integrating theory with practice with the help of the competition of "China Financial Futures Exchange Cup".

1.2 An Analysis of the Learners in the Course of Financial Engineering

1.2.1 Coexistence of Professionalism and Plasticity

Professionalism: through the study of basic courses such as finance, financial market, investment, corporate finance, and so on, students have a clear understanding of the basic knowledge of their major (finance or investment) and have a certain professional quality.

Plasticity: financial engineering is one of the subjects with the strongest logical thinking in the professional courses. The application of derivatives will better apply what the students have learned.

1.2.2 Learning Interest and Fear of Difficulty Coexist

Learning interest: the innovation of derivative financial instruments can solve the problems in real life and stimulate students' enthusiasm for learning.

Fear of difficulty: because the application of derivatives requires the construction of investment portfolios and allocation ratios and the position of long and short, it is especially difficult to analyze the pricing of derivatives. Therefore, students who are new to derivatives are difficult to some extent.

1.2.3 Coexistence of Thinking Stereotype and Eager for Innovation

Thinking stereotype: the long-term passive education mode makes students form the thinking stereotype of relying on teachers, lacking innovative thinking and independent learning ability.

Eager for Innovation: most students are willing to make independent innovation under the guidance of teachers to complete the task of independent learning.

2. Analysis of Teaching Reform of Financial Engineering Course

2.1 Problems in the Teaching of Financial Engineering Course

2.1.1The Teaching Method is Relatively Simple

It is a typical cramming teaching method which is mainly taught by teachers. Teachers teach basic theoretical knowledge, mathematical formula derivation and evolution, while students listen passively. They don't know why or how to do it? Students are often in the state of passive acceptance of knowledge, it is difficult to use the knowledge to solve practical problems flexibly. In order to cope with the examination, students often learn by rote within the scope of the circle. Although they can remember the knowledge temporarily, they do not really understand the knowledge itself. On the one hand, the test questions are too simple and come from many textbooks; on the other hand, the test questions are lack of flexibility and depth, which make students forget quickly after the test and fail to achieve the real learning effect. With the continuation of this traditional teaching method, students are easy to form a dependent psychology, and their desire for knowledge is reduced. They only want to pass the examination and deal with it. Their awareness and habit of actively exploring knowledge are gradually lost. The classroom atmosphere is dull and it is difficult to produce a good teaching effect.

2.1.2 Lack of Computer Software Operation Teaching Link

On the one hand, there are few practical courses matching the knowledge taught in the classroom.On the other hand, teachers did not use computer software to in the process of teaching, which made the experimental teaching link missing in the financial engineering teaching link. Students' computer application ability has not been systematically developed, and their hands-on ability is poor.

Students of the school of economics will be exposed to Eviews, SPSS, Excel, Python and other software during their study. In general, Eviews and SPSS software are used in econometrics and statistics courses. Most of the students are usually exposed to Excel, but the school does not set up a separate Excel teaching course, but only regards the use of Excel software as a part of basic computer education. Most of the students only learn to use their simple data calculation and table processing functions, other functions such as simulated operation table, Excel solver and strong VBA program development knowledge and application ability are generally lacking. In recent years, with the popularity of Python computer program language, more and more schools will offer Python language learning courses, but the use of Python for data analysis does not offer a corresponding course, so that students only stay in the basic knowledge of Python computer program language, they do not know how to apply to specific financial data processing and analysis. It’s also not be used in the application of financial engineering during teaching.

2.1.3 Evaluate the Learning Effect with a Single Assessment Method

Most of the assessment methods are based on the combination of theoretical examination and usual performance. The way of testing teaching results is simple and the degree of innovation is not high. Students' usual performance mainly passes the examination of attendance and classroom work, there is no difference, and students' learning quality and application quality are not taken into account. What's more worthy of attention is that whether the students who enter the classroom can listen carefully, whether the classroom assignments can be completed on time and independently, and how the quality of the completion are lack of necessary and refined assessment standards. Therefore, the enthusiasm of the students who study well is vulnerable to attack.

2.1.4 Less Extra-curricular Exchange Activities and Less Simulated Trading

Most colleges have little extra-curricular practical exchanges in financial engineering courses, and there is no simulated trading of derivatives. For application-oriented colleges, financial

engineering courses should be more practical than theoretical, and assessments should be oriented toward applied abilities. Extra-curricular practical communication activities are particularly important for students' understanding of knowledge. Extra-curricular exchange activities can cultivate students' exposure to the course content in advance, and bring questions to the classroom, which is a reflection of improving the learning efficiency of financial engineering courses. Simulated trading allows students to experience derivatives trading for themselves, laying a foundation for future derivatives trading positions.

2.2 Specific Measures for Teaching Reform of Financial Engineering Course

2.2.1 Combine Theory Teaching with Case Teaching

On the basis of the theoretical teaching method, the proportion of case teaching should be increased appropriately, and should not be limited to the cases in textbooks, because the cases in textbooks have certain lag, but a large number of real cases should be introduced into the classroom teaching, combined with the actual events in the capital market to explain the teaching content, consolidate and deepen the students' understanding and mastery of the theory. For example, in the explanation of futures derivatives, we can introduce the Wulongzhi incident of Everbright Securities Co., Ltd and the stock disaster in 2015.

2.2.2 Combine Theory Teaching with Application of Computer Software

After explaining relevant theoretical knowledge in the classroom, teachers should also teach some applications of the combination of these theoretical knowledge and computer software, so that students can be more proficient in the application of Excel, Python and other software in financial engineering. For example, for the explanation of Monte Carlo simulation in the course, teachers can carry out the corresponding experimental operation with the help of Python corresponding code, draw the volatility smile with it and so on.

There are many comprehensive laboratories in the school of economics. Here, we need to rely on the existing laboratories of the school, and further improve them. We need to build an experimental platform composed of teaching software and financial database, and prepare for serving students in hardware and software.

2.2.3 Classroom Participatory Teaching

On the one hand, introduce high-quality video resources in the classroom, guide the students to discuss the commonness of video content and the content of the courses they have learned, hand over the classroom to the students, turn the teacher's teaching as the center to the students' self-study as the center, the teacher is only responsible for the guiding role in the students' learning process, and let the students watch the video to refine and summarize the course requirements involved in the video. Finally, the teacher summarizes the content of the video.

On the other hand, teachers can sort out the current financial hot issues at home and abroad, list them out, and then group students to let them choose their own topics of interest for research. Through the way that students speak on the stage, teachers are responsible for comments, let students become the focus of the classroom, and improve students' participation in the classroom. Or directly give a topic for students to collect data and submit summary and analysis report. The report can be submitted in individual form or group form respectively. After submission, it is also necessary to conduct group discussion in class to test students' self-study results. The implementation of these methods can not only inspire students' creative thinking, but also cultivate students' team spirit.

2.2.4 Combination with Practice

First, students take part in related subject competitions with the teachers’ guidance. For example, the "China Financial Futures Exchange Cup",which is the national college students' financial knowledge competition, held by China Financial Futures Exchange and China Futures Association, with the goal of "educating people, practicing, innovating, and serving", it deeply popularizes financial futures and derivatives knowledge, actively cultivates and promotes a safe-haven culture,

promotes the discipline construction of financial derivatives education, and strives to cultivate talents and students for the Chinese financial futures market. Students can improve themselves by participating in competitions to promote learning.

Second, students design derivatives solutions with the help of teachers. For example, for specific investment portfolios, students can use derivatives to manage risks and design corresponding derivatives solutions.

Third, students can participate in derivatives simulation transactions. Through derivatives simulation transactions, they can better understand the transaction process and corresponding transaction risks of derivatives contracts on the exchange.

Fourth, students go to off-campus training bases for internships and go to cooperative enterprises for observation and learning,they can use knowledge in practice, and communicate with off-campus experts to obtain development trends and cutting-edge theories in the industry.

2.2.5 Reform of Teaching Assessment Methods

For the reform of curriculum assessment methods, the goal of curriculum assessment must be clearly defined, that is, a set of diverse and targeted assessment systems that can test students' ability to innovate independently. Secondly, in terms of the content of the specific assessment system, the original assessment method of the usual performance plus the final examination was changed, and a multi-dimensional assessment method was implemented. For example, the final score of a student can be composed of four parts, that is, classroom participation, evaluation of the analysis report, and evaluation of final product design plus their derivatives simulation transactions.

2.2.6 With the Help of Network Teaching Software and Teaching Platform

With the development of Internet technology, teachers can improve the efficiency and quality of teaching with the help of network teaching platform and teaching software.

For example, in class attendance, teachers can use one-click to class attendance with teaching software such as Superstar Learning Pass or Class School, which greatly saves the time of traditional check-in.Using random questions can let every student participate in the question; launching topics on the teaching platform, such as initiating discussions on recent capital market events, students can speak freely and participate in discussions. Teachers can also strengthen interaction with students in the process. Teachers release teaching materials, course assignments, etc. on the teaching platform, students can achieve the effect of preview before class and review after class through the platform. With the development of modern information technology, teachers' teaching is not only in the classroom, but also outside the classroom. For the live broadcast function of the teaching platform, teachers and students can communicate online in real-time video and voice, and many students participate in real-time classroom together, which also makes teachers and students closer.

3. Conclusion

The implementation of curriculum teaching reform is not achieved overnight. Teachers need to constantly enhance their teaching knowledge and skills. Meanwhile, teachers should gradually carry out teaching reform in sections in the process of teaching, and finally achieve the goal of comprehensive curriculum teaching reform. Through the teaching reform of financial engineering, it is hoped that students will have a high degree of classroom participation in the course of learning, combine theory with practical cases, and supplement with the application of computer software, so as to further improve students' application ability and comprehensive quality of professional knowledge. In the learning process, students not only enhance their practical ability, but also embody the organic combination of theory and practice (through the combination with practical cases, participation in subject competitions,derivatives solutions design,derivatives simulation trading transactions, etc.), fully reflecting the orientation of talent training in our application-oriented colleges and universities.

Acknowledgements

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Educational Guidance of Psychological Health based on Games

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Abstract. The psychology games are commonly used in school psychological tutorials, which have gradually become an important carrier and form for students to participate in experience, sensibility and learning. The psychological health tutorials use psychology games, which must follow educational principles, and different game types should be used in accordance with classroom functions. The classroom application strategies of psychology games are mainly reflected in discovering and adjusting students' feelings with psychology games, guide students' self-cognition and self-disclosure, cultivate students' self-confidence and courage, guide students to integrate into the team, and cultivate teamwork ability.

Keywords: Psychology Games, Education, Self-cognition, Self-confidence, Teamwork.

1. Introduction

The psychology games are important ways to provide psychological help and guidance in group situations, psychology games account for increasingly large proportion of psychological tutorials in schools, so exploring educational counseling strategies of psychology games has great value and significance.

2. Types and Classroom Advantages of Psychology Games in Psychological Health Tutorials

2.1 Types of Psychology Games in Psychological Tutorials

The counseling classroom of psychological health education is a special classroom for students' psychological health problems, promote the development of students' psychological qualities, the development of students' sound personality, and the development of students' interpersonal relationships, studies and careers. The psychological counseling is conducive to improvement of students 'psychological quality, healthy development of body and intelligence, the studies of students, the development of students' good character and the establishment of correct world outlook. While psychology games happen to be effective media and carriers for achieving this purpose, there are many types of psychology games, but in the use process of psychological tutorials, according to their function and use frequency in psychological classes, psychology games can be divided into two main categories: one is pre-class warm-up games, and the other is theme activity games in class. Just as its name implies, the main purpose of the pre-class warm-up games is to introduce the class, it is generally used in the beginning of one lesson, and the length is less than five minutes. This kind of psychology games are mainly to create a relaxed and pleasant atmosphere, mobilize students' enthusiasm, so as to obtain more efficient learning, such as "raindrop variations", "three minutes test" and so on. The theme activities in the lesson are closely related to the teaching themes and contents, which take a long time, and they are the carrier of the teaching contents. The teachers of the psychological counseling class take the teaching contents and goals as the main purpose, design theme games, and guide students to participate actively in the games, so that they can reflect, understand and gain on the experience, so as to achieve the expected educational goal and effect of the relevant psychological counseling topics. For example, in order to let students understand the trust "blind people touch the elephant" and cultivate students' self-confidence, "hey! I like you too...", "field adventure simulation" enhance teamwork and stress capability, according to different educational themes and teaching needs, different psychology games can be designed to achieve better teaching results.

2.2 Classroom Advantages of Psychology Games in Psychological Health Tutorials

At present, many schools choose to use psychology games in psychological tutorials to make students relax, perceive and learn, it also proves the great role of psychology games in this regard. Let's look at a real case; a school randomly selects a class and conduct psychological tutorials in different ways. The counseling class A adopts traditional teaching mode, namely the teacher systematically teaches students in accordance with the courseware prepared in advance, tell how to maintain psychological health, how to perceive feeling, and some methods of self-regulation; the counseling class B is mainly based on psychology games, the teachers lead the students to do some psychology games like "blind walk", "blindfolded painting" and "ball game", and supplemented by teaching. Finally, these students are interviewed, more than 95% of the classmates said they prefer counseling class B and feel that counseling class B has a greater incentive and promotion effect on them. Therefore, the appropriate use of psychology games in psychological tutorials, there is a great effect in teaching and it is more popular with students.

3. Design Principles of Psychology Games in Psychological Health Tutorials

It is not a random game play that can be called psychology game; it has its rules and connotations. Psychological teachers should follow certain rules when designing psychology games to improve the whole effect of psychological tutorials.

First of all, the design of psychology games must follow development principles. Namely it is often said in education that "development psychological guidance, supplemented by disorder psychological counseling" [2]. Psychological tutorials are oriented to all classmates rather than individual, so the main purpose of psychological tutorials is to promote the development of most students. Individual students' psychological problems can be placed after class to the school's special counseling room for further understanding, so the psychology games in the classroom should follow development psychological principles.

Secondly, the design of psychological games should be relevant to the guidance goals and contents, the realization of course objectives as principle. The psychology games carried out by psychological teachers are just to spice up classroom atmosphere in some psychological tutorials, they are little or no relevant to the content teachers teach, some even confuse cause and effect, choose guidance content based on psychology games, overly attach to the games and lose teaching rationality.

Thirdly, psychology games should conform to students' psychological characteristics and actual conditions and meeting the students' psychological needs as principle. Students at different stages have different problems and thinking, and should consider the maturity of students' thoughts, design different game forms and contents for students with different learning stages, and teach students in accordance with their aptitude.

Finally, the psychology games should highlight the enlightenment, education and pertinence on the premise of meeting the fun. Fun is the feature of psychology games rather than goals, the inspiration and education that games give students is the meaning. Such as self-cognition games-"who am I" and "find good friends", their purpose are aimed at cultivating students' self-cognition and mutual understanding; interpersonal communication games-"mind telegraph" and "draw something" are aiming train students' interpersonal communication skills.

4. Guidance Practice based on Psychology Games

4.1 Use Psychology Games to Discover and Adjust Students' Feelings

Students' classroom performance, learning efficiency, living conditions, physical and psychological health and other aspects are closely related to students' feelings. The happy mood can make students have high efficiency and good learning effect, and achieve twice the result with half the effort. Bad feelings such as sadness and anger can affect psychological health, learning and life

conditions and even physical health. It is important to maintain a relaxed and happy learning mentality, however, most students are unwilling to admit or pour out when they find that their feelings or conditions are not right, they cannot vent and regulate themselves due to limited age and experience. At this time, the effect of psychology games is demonstrated; the game atmosphere will make the students feel relaxed, the students will unconsciously show their original negative emotions in the process of participating in the game, the teachers can observe and understand, moreover, students are relaxed and relieved through the games, and their thoughts and behaviors have changed, so they can better study and grow in the next step. Taking a psychological game-happy zoo as an example, there are positive and negative feelings. Some positive emotions, such as excitement, fun, and humor, can stimulate people's creativity, while many negative emotions, such as pain, anxiety, and fear, can hinder people's creativity. Each of us may experience mood swings due to success or failure. The following games can make students experience the powerful role of feelings in problem solving, and can also train humor and optimism. The contents of the game are to make students learn the sounds of animals in the zoo; the first letter of surname pinyin corresponds to the name of animals: A-F lion, G-L seal, M-R gorilla, S-Z elephant. Now choosing a less familiar person as a partner, they staring at each other, their gaze cannot be turned, at the same time; they use their mouths to loudly learn animals to cry, at least 10 seconds. Although this game will be embarrassing at the beginning, the people around them will not feel embarrassed when doing the same thing, they will be slowly assimilated and integrated into the game environment, it is likely to end with laughter. Funny and humorous feelings will help students to play creatively in this game, may make them suddenly have a brain wave, imitate all kinds of unexpected cries, get universal applause, or make everyone laugh. In the process of this psychology game, students can release feelings very well, in the process from embarrassment to letting go, the feelings are released and happiness is gained. Finally, teachers tell students that positive optimism is catalyst for creativity.

4.2 Use Psychology Games Guide Students' Self-cognition and Self-disclosure

In the psychological tutorial classroom, teachers can use psychology games guide students' self-knowledge, understand each other and express themselves. When a group of students who are not familiar with each other sit together, how to recommend themselves and understand others in a short time? Designing and communicating "personal cards" is a good way. If the badge hanging on the student's neck has nothing but the symbol of the name, they only know one symbol and one title. But if students make a "personal card" for themselves, announce their own characteristics, introduce them to everyone, make others remember themselves, understand themselves, and enhance self-cognition, moreover, when others understand themselves, they quickly remember them, is this not very good? First of all, we need to guide students to clearly set the purpose of the game activities, for example: the first purpose is to concisely and clearly announce the information that they want to communicate with others, and learn to recommend them. The second purpose is to make students understand others through the exchange of "personalized cards" and know each other as soon as possible. Each person prepares a badge and several colored pens. Each student designs a "personal card" for themselves within 5 minutes, and inserts it into the badge. The second is to guide students to understand the requirements for designing "personal cards": first, there is no less than five pieces of personal information on "personal cards". Secondly, in addition to text, graphics and other forms can be used. Thirdly, pens with various colors can be used. We will find that there are many friends with similar interests and hobbies around us in the process of communication; it is not difficult to communicate with strangers. Moreover, students can write down embarrassing words, so that everyone can participate, express themselves well, and let go of themselves. So, what information is written on the "personal card"? It may be considered from the following aspects: name, nickname, net name, nickname; specialty, hobby, interest, hobby; person one admires, person one respects, person one disgusts, person one hates; ideals, goals, experience, ambitions; analogy of oneself, body shape, appearance, height, weight, skin color; contact, home phone, mobile phone number, QQ number, class, student number. Students announce the information they most want to

others know and information they communicate with others on a small card, which can be expressed in plain language or verses; they can use in monochrome lines or in color image to show. In short, a small "personal card" is students' "pass" for interpersonal communication. Example 1: foodie, have a dream, like blue, Ice cream, town in south of the Yangtze River; example 2: read book, play football, locally born and bred, sanguine and enthusiastic, strong as a cow; example 3: fans, primary school students. 40 kg, like cooking. It can be seen from that we can see important information such as their interests and strong points, physical characteristics, and interpersonal relationships. The third is to guide students to express, such as randomly selected student speech: I am not good at expressing myself, I am not willing to talk more in front of strangers, nor will I introduce myself in front of everyone. This is the first time in my life that I take the initiative to introduce myself to others, so I have no way to start at the beginning, and I don't know what aspects of introducing myself. Seeing that others can introduce themselves naturally, I also dare to talk about my situation, after I finish speaking, I am very happy. I do something that I thought was amazing.

This game is very interesting, because through the exchange of "personalized card", I see everyone with rich personality. Because "me" includes "open me" and "hidden me", if I don't say, who knows? A classmate wrote on his "card": "willing to listen and do not to say, willing to think and unwilling to move, willing to write and unwilling to sing, willing to alone and unwilling to cooperate, willing to be quiet and not to be troubled." After his own explanation, we know that his character is introverted, sometimes, although he does not want to express more opinions, he still has his own opinions. When meeting such a classmate, we should encourage him to say his own ideas, and have more respect and trust for him. Through this example, we can know that psychology games are indeed effective in stimulating students' desire to express.

4.3 Cultivate Students' Self-confidence and Courage with the Aid of Psychology Games

In the psychological tutorials, teachers can use psychological games to cultivate students' self-confidence and the courage to face difficulties. There is a "singing the self-confidence song" theme in the textbook; teachers can use two group supplementary games, "my twenty questions" and "merits bomb". Mr. Wang gives students enough time to reflect on themselves quietly, use the sentence "I am a person of ..." describe as many own personal characteristics and advantages as possible. And then the psychology games of "advantages bomb" are conducted, which require students to be units of learning group and sit together, each group have several members and the game are played for several rounds. In each round of the game, the team members should select the members of this group as the merit bomb targets, and other students except the reviewers should be tell the merits of the team member they have observed in a practical and realistic way, the students who are praised only listen carefully. These two games make students see more their own advantages with the aid eyes of others, and experience their own value through others' sincere telling, help students understand themselves better, and truly teach self-cognition method to students.

Some students' results are unavoidably not ideal after exam, in order to cheer students up, teachers can lead everybody to play "break & query negative labels" game, let everyone write their own negative labels, randomly select the negative labels of three students, the whole class discuss and find evidence together, query and see through the negative labels. Seeing through may make students feel scared and anxious, but only pluck up courage to face it can they get rid of its control, which is also the meaning of psychology games.

4.4 Use Psychology Games to Guide Students to Integrate into the Team

The psychology games are conducive to improve students' teamwork ability, promote interpersonal communication and enhance cohesion. Interpersonal communication is an indispensable part of personal growth, survival and life. In Eastern philosophy, relationships are productive forces; in the West, relationships are the scarcest commercial resource, thus it can be seen that the importance of interpersonal relationships. Relationship is a very complicated concept

and a very complicated social phenomenon. In the student's future learning, work and life, good interpersonal relationship is a necessary condition for career success. In order to establish a good interpersonal relationship, students must first learn how to get on in the team and how to find their position in the group and play a role. With more psychology games, students will have more teamwork experience.

Let's look at this little psychology game suitable for groups: "Tracing Action". The purpose of the game is to make students learn active communication through the "people searching game", students introduce themselves in communication, understand others, and discover common interests and hobbies, thus crossing the first step of interpersonal communication. The game takes about 25 minutes, and the props required are very simple: "people searching card", pen, operation is simple. The specific steps are as follows: first of all, the "people searching action" requires students to find a person with this characteristic within 10 minutes and sign after simple communication in accordance with information on the "people searching information card" Secondly, everybody exchanges the "people searching information card" to see who has the most signatures. The host invites representative students to communicate with the whole class, such as the one with the most signatures and the one with the least signature. Finally, after the communication completed, the host sorted out the information in the whole class, and ask people with the same characteristics to stand in a row, introduce and communicate with each other. Now the characteristics of serial number on a "people searching information card" are shown as follows: 1. love snacks; 2. worship Zhang Jie; 3. play basketball well; 4. love to read Wang Xiaobo's book; 5. good at English; 6. the height is more than 1.8 meter. what should be paid attention to during the game: first of all, this game can be played in strange groups, learn to actively exchange and communicate through the game, it can also be carried out among students in the same class, through the "people searching" activity, enhance the further understanding among students. Secondly, more than one person's name can be signed in one column to see who signed more names. The host asked the signer to confirm to prevent false and messy information. Thirdly, after students with the same characteristics communicate with each other, send a representative to share with the whole class. Fourthly, the information in the "people searching card" can be increased or decreased in accordance with students' actual characteristics. This activity will have new gains for strangers and students who have gotten along with each other for a while. Through the game, unfamiliar people began to understand each other, and people who are familiar with have further communication. This has a good role in promoting harmonious interpersonal relationships and enhancing group communication. The "people searching information card" is used to complete the "signature" task; there is still a relatively simple exchange, namely me and you. Finally, to bring together students with the same characteristics to communicate with each other is a more extensive exchange, namely I and you. The common characteristics and hobbies connect everyone together, and make people experience happiness in group communication. During the game, students take the first step of interpersonal communication, integrate into the group, adapt to the collective environment, and lay the foundation for future communication.

Psychology games are conducive to stimulate students' expression willingness, show their true self, and help to inspire students' personality and self-creativity [3]. Students will encounter various problems during growth, but due to shyness, timidity, confusion, puzzle and other various factors, students may be timid or unable to express, or there is no suitable environment and candidates to talk with, most students will choose to hide themselves, hold back, the problem cannot be solved. Or the questions encountered when students in the learning process, different thinking and innovative ideas on the problems, their own talents in other aspects, etc., because there are no platforms and opportunities to display, they cannot be well displayed. Then, students expressed wishes and desires can be stimulated in psychology games, thus showing truer self.

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Study on the Role of Education in Response to China's Aging Population

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Abstract. After entering the 21st century, China has entered into a fast aging society. This paper shows all-around China's current population situation by taking analysis of continuously decreasing fertility rate and the rapidly increasing proportion of the aging population. At the same time, some existing impacts of the development of aging society are pointed out, such as: insufficient labor resources, the increasing social burden of workers, the mismatch between the rapid aging population and social elderly-support resources, and so on. With reference to the existing analysis, and the innovative role of education for these is explored. The traditional views of childbearing and providing for the aged, the quality and labor skills of workers, the affordability of the public assistance for industry of medical care and health, and the happiness of the elderly could be improved.

Keywords: Aging Population, Fertility Rate, Education, The Mode of Combination of Medical Care and Health, Role.

1. Introduction

After entering the 21st century, China's population fertility rate has gradually decreased. There will be a rapid aging of China's population, a decrease in the proportion of the working population, and an increase in the social burden of workers, which will affect the social development of China. China has attached great importance on the gradual decrease of the fertility rate and the upcoming rapid aging process of the population. Many national policies have been currently under heated debates regarding how best to make adjustments to counter the aging trend. And the ways to solve the China's aging population has become a national strategy. The positive association between education, productivity, and development has long been acknowledged (Havighurst 1953; Coleman 1965/2015; Psacharopoulos and Woodhall 1985).

2. The Current Situation and Development Trend of China's Population

(1) The current situation and development trend of China's birth rate

China's population fertility rate began to decline in the 1970s. Influenced by the two-child policy in 2013 and 2015, the birth rate slightly increased at the very beginning, and then the birth rate showed a significant downward trend after that. Since then, China's total fertility rate has been declining slowly [3]. In 2018, China's total fertility rate is 1.55 [4]. From a global perspective, China's total fertility rate is basically the same as the average level of developed countries. According to the current decline of China's birth rate and fertility rate, it is estimated that by 2028, China's population will reach the highest peak, and then there will be a negative population growth.

(2) The aging process of China's population.

Due to the joint effect of fertility decline and prolonged life span, population aging has become a global phenomenon, and the trend is expected to continue in the foreseeable future. In China, From the year of 2000 to 2019, it can be seen (see Fig.1) that the proportion of the population aged 65 and above was increasing year by year, almost doubled from 7% in 2000 to 12.6% in 2019. While the rising rate runs a lot higher than international social standards for aging, and the process of aging society is developing rapidly. In the future, China's aging rate will rise with a higher level. During the 14th Five Year Plan period, China may enter into a moderately aging society. After 2030, the proportion of the population aged 65 and above in the total population may exceed 20%. at that time, China will enter a society of serious aging.

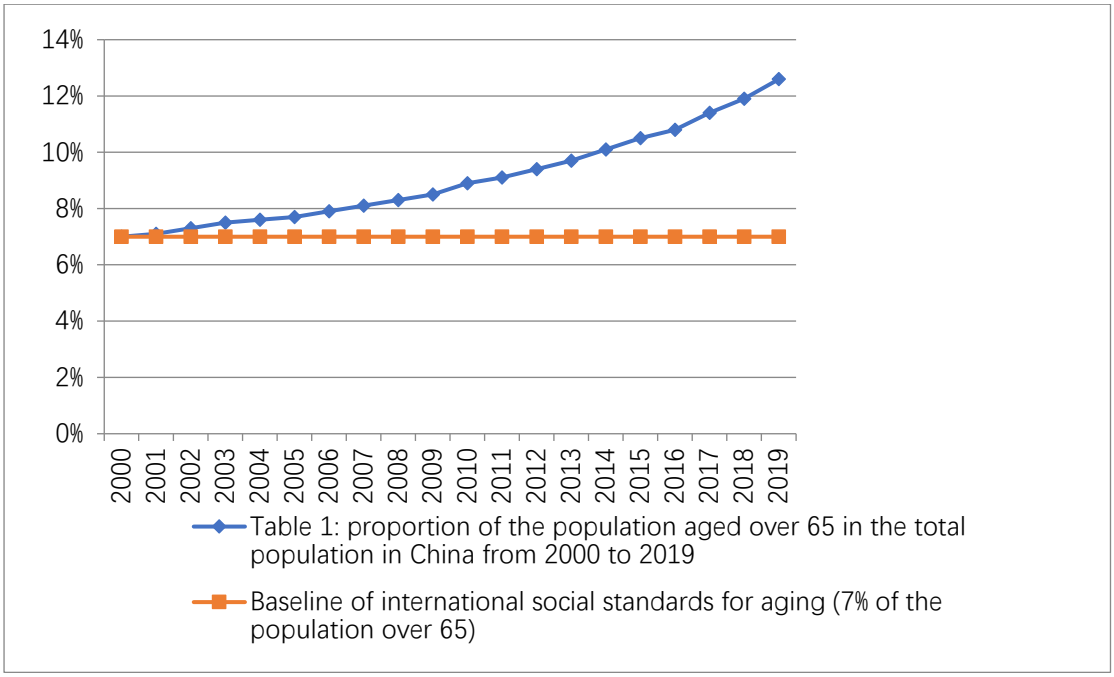

Figure 1. proportion of the population aged over 65, 2000-2019

3. The Influence of China's Aging Population to the Society

(1) the number of working people decreased, and the social burden of working population increased.

In the face of such an unprecedented demographic transformation, policy makers are concerned about the shortage of working-age population. By the end of 2019, The 16-59-year-old population is 896.4 million, accounting for 64.0%; compared with the end of 2018, the 16-59-year-old working-age population decreased by 890 thousand, accounting for 0.28 % [1];. The total dependency ratio of China from 2000 to 2018 is shown (see Fig. 2)that the elderly dependency ratio continues to substantially increase from 9.9% to 16.8% year by year, the youth dependency ratio falls from 32.6% to 23.7% (the lowest is 22.1% in 2011, and then it will gradually rise). The total dependency ratio gradually decreased from 42.6% in 2000 to 34.2% in 2010, and then it increased to 40.4% in 2018 year by year. Based on this data, it can be seen that after entering the aging society, with the deepening of the aging degree, the number of working people decreased. At the same time, the social burden of the working population is increasing.

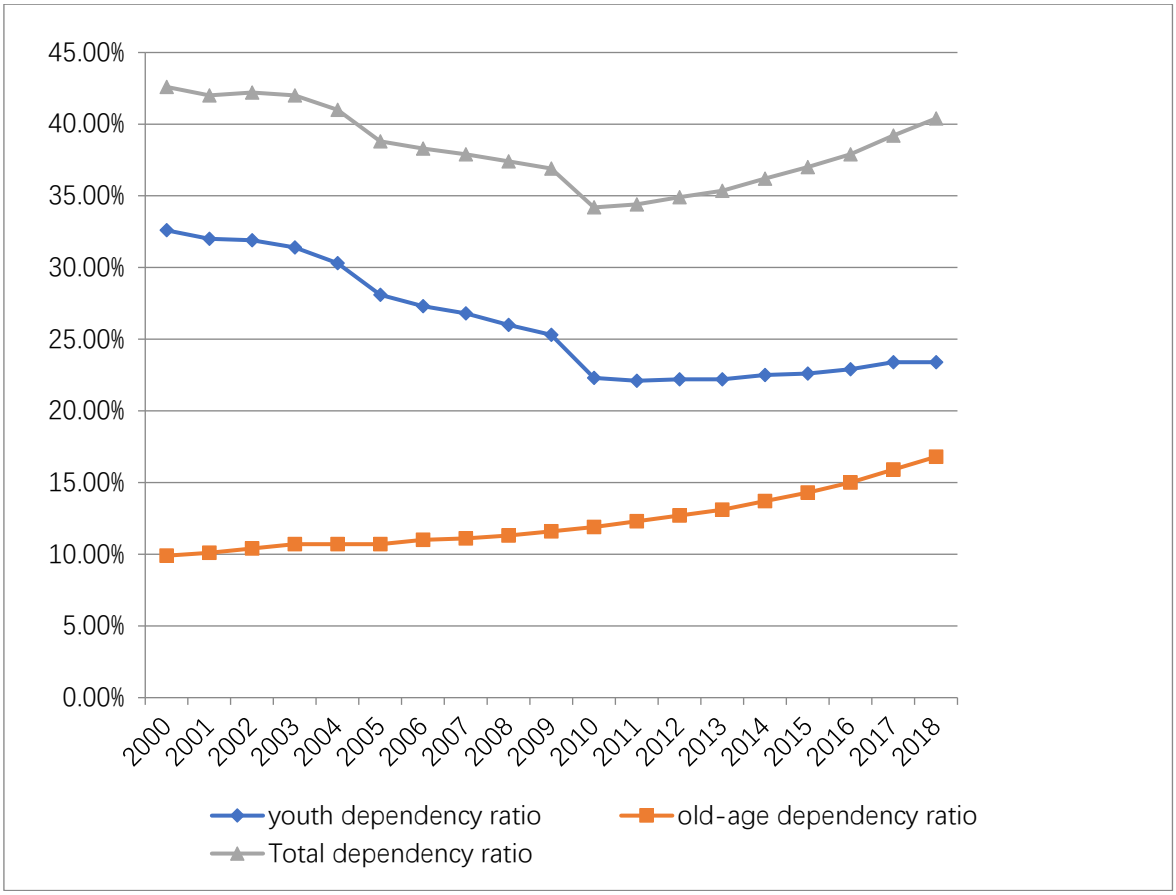

Figure 2. youth, old-age, total dependency ratio, 2000-2018

(2) mismatching between the social supporting resources for elderly and China's rapid aging population

The rapid aging of China's population needs more social resources to provide support for the elderly. Right now China is obviously not fully prepared for this. At present, there are three modes providing for the aged in China: home-based care, community-based care and institutional care. Among of them, home-based care is most popular for Chinese and this mode stands for Chinese culture most. However, it is obviously unable to adapt to the change of "4-2-1" family structure. In the future, a core family will face the pressure of supporting four elderly people. Therefore, social forces are needed to support the elderly. As a professional institution, the elderly care institutions can meet the elderly's demand for elderly care services and share the pressure of their children's support. There will be more and more social needs for community-based institution for elderly. In the research on Beijing's institutional pension needs by Lin Lei and Liu liming in 2019 [6], it is clearly stated that the insufficient of current number of Beijing's pension institutions, the institutional facilities, the number of beds, and professional medical staff and so on. These are the major obstacles to the development of Beijing's pension industry. Zhou Xiaoli, Jiao Yanhui and Wang Chong also pointed out that nearly half of such institutions in Xi'an is lacking of personnel and facilities to carry out the mode of combination of medical care and health. In Zhu Li and Liu Lihang's research on the attitude, exploration and integration of the aging medical care and health in China, they also pointed out that most institution of combination of medical care and health in China is faces collocated elderly care. At the same time, the strategic goal of healthy aging puts forward new challenges to the mode of combination of medical care and health. The new journey of the combination will face many operational difficulties, such as: the renewal of health view, the structural adjustment of service (the gap between supply and demand of healthy pension is large, and the mismatch between pension institutions and population, etc.). In Yang Yan, Li Huiju and bu Xiaoli's research on the current situation of pension institutions in the western region (taking Gansu Province as an example), [9] pointed out these facts: the overall lack of resources of pension

institutions, unbalanced development, imperfect facilities of pension institutions, generally low nursing capacity of pension institutions, few pension institution types, and lack of number of professional pension institutions. All of the above findings show that although the pension industry in China has developed rapidly, the lack of existing pension institutions, outdated pension ideas, and the lack of professional medical staff and facilities in pension institutions have impacted the development of pension industries in China, which urgently needed to solve.

4. The Education Impact on the Aging Population

More recently, enhancing education has been advocated as an effective option against the negative consequences of population aging.

(1) The role of education in improving the fertility rate.

China has started to lose its “first demographic dividend” in recent years due to an aging population (Mason 2005). In the face of China's declining fertility rate, how to improve the fertility rate of the population is in front of us the Chinese government has begun to relax its one-child policy, first allowing couples where at least one partner is a single child to have two children in 2014, and then most recently ended the one-child policy officially to allow all couples to have two children. These adjustments have thus far had limited impact (the Economist 2015; Zhai and Li 2015). In terms of education, we publicize the national population policy through school education to explain the current population situation and future development trend of our country. The other side ,considering the increasing cost of childbearing and the inestimable effects to the career development plan of modern women, it is also need education to make public give enough understanding and support for modern woman and their family.

(2) The role of education in improving the working ability of workers.

With China's entering into an aging society, the number of working age population in China is gradually decreasing, and the shortage of social labor resources will become increasingly serious [10]. In response to it, China has substantially expanded its education enrollment since the 1990s, increasing the college enrollment by sevenfolds since 1999, in order to improve the quality of its labor force. By vigorously developing undergraduate education, higher vocational education, secondary vocational school and other schools or pre job education, our country enables our workers to use advanced science and technology and improve the quality and skills of workers to generate greater labor capacity and more social wealth. By mastering or operating AIT (artificial intelligence technology) could rise the income of workers, and it also to make up for the shortage of labor resources in the aging society. The increase of the individual income level of the workers can help us to cope with the economic pressure of bearing and raising the offspring, reduce the social burden of the workers, and adapt to the gradual deepening of the aging reform of Chinese society.

(3) The role of education in the industry of combination of medical and nursing

At present, the development of China's medical care industry cannot adapt to the rapid aging of the social population. There is a lack of a large number of professional medical and nursing personnel and professional management personnel [6-9, 11], which requires universities and colleges to establish geriatric medicine major, geriatric nursing major and medical care and health management major, and cultivate a large number of professional geriatric medical and management personnel through college education, vocational education, etc.to meet the needs of the combination of the medical care and health industry in the aging society, and to provide high-level human support for the deep combination of medical care and health industry in China.

(4) The role of education in improving the happiness of the elderly.

The traditional home-based pension mode has not been able to adapt to the current situation of our country, while the traditional view of home-based pension for the elderly has not changed. Firstly, a large number of elderly people are not willing to go to the community or the pension institutions of the combination of medical care and health and care for the elderly. Secondly, elderly people even think that it is unreasonable to send the elderly into the nursing home, and at the same time, they think that it is a shame to live in the nursing home provided for age when their own

children live in the same city, let alone a sense of happiness. We need to firstly change the "home-based pension" model into the new social pension model with mainly "community-based pension" and "institutional pension", "home-based pension" supplement [12] .Secondly through education, with the exchange platform for the elderly in the elderly university, urban community service center, neighborhood committee and village committee, we should make the old people know the gradually accept the new pension mode. At the same time, it is necessary to set up courses in the above-mentioned elderly communication platform to teach, learn and share, such as music, manual art, chess, etc., organize some activities to enrich the life of the elderly, so that the elderly can have a real sense of security and happiness, and improve the elderly's happiness in life.

5. Conclusion

The aging of population has some influence on every side of society, such as the shortage of social human resources, the increase of social burden of workers, and the mismatch between the rapid aging of population and social support resources. Through the research, we found that education could improve the social environment for couples, especially more support for woman, improve the personal quality and labor skills of workers through education to make up for the shortage of social human resources and reduce the social and economic burden of workers, and vigorously carry out the training and education of geriatric medical care and professional management for the industry of combination of medical care and health provided for elderly. Meanwhile, we could change the traditional concept of old-age care and improve the happiness of the elderly. Education is playing such important and positive role in coping with China's aging population.

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Undergraduates' Mental Health Education from the Perspective of Positive Psychology

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Abstract. In order to solve many problems occurred in applying traditional psychological health education model to psychological counselling for undergraduates, the related theories of positive psychology by using a questionnaire survey to analyse the advantages of applying positive psychology in undergraduates' mental health education are introduced, and the innovative ways of undergraduates' mental health education from the perspective of positive psychology are proposed. The results show that positive psychology can promote the development of undergraduates' mental health education. When positive psychology is applied to innovate psychological health education of undergraduates, it will not only help undergraduates solve psychological problems and get rid of its distress, but also help them better shape healthy personalities and positive qualities. The effective theoretical guidance for the innovation of undergraduates' mental health education is proposed.

Keywords: Positive Psychology, Undergraduates, Mental Health Education, Educational Innovation.

1. Introduction

Undergraduates, as the pillars of the country in the future, are nurtured in colleges and universities. The current society is now ever-accelerated, so undergraduates need to face more and more challenges such as family-related factors, emotion-related factors, study and employment pressure which can easily lead to psychological problems for undergraduates [1]. They are now in their early youthful period, so their physical and psychological ages are at a turning point from ignorance to ignorance. When facing some hardships and sufferings which are unable to bear, they will easily produce psychological imbalances that will cause serious harm to themselves, others or the entire society [2].

Psychological health education for undergraduates is a psychology-focused education that uses various methods to solve undergraduates 'psychological problems and improve their psychological quality. Traditional psychology is widely used by most schools for mental health education. Traditional psychology aims at treating and repairing students' psychological trauma. However, some certain negative hints are contained at the same time during psychological counselling, resulting in the failure of mental health education. The concept of positive psychology firstly appeared in Mary Jaherd's article *"Modern Positive Mental Health Conception"* in 1958, who believes that positive psychology is a good interaction between personality characteristics (or personality) and social organization [3,4]. In the 20th century, positive psychology emerged and entered into people's vision as a new psychology subject. Some scholars believe that positive psychology is to explore human psychological phenomena positively, that is, rather than reminds people to be in darkness, it tries its best to bring people under the sun. Baker proposed that positive psychology should be applied to guide students to establish positive ideas in 2019 [5]. Positive psychology had completed the transformation from a theory to a discipline, and eventually evolved into a way of practicing psychological education.

In summary, the advantages of application to positive psychology to mental health education are mainly studied, and an innovative approach to psychological health education in combination with positive psychology is proposed in this research. Also, it puts forward effective solutions to the problems of traditional psychological education in undergraduates' mental health education, and also provides help for them to cultivate healthy personalities and shape positive qualities.

2. Methods

2.1 Positive Psychology

Since the psychological health education of undergraduates combined with positive psychology is studied, so the development and content of positive psychology will be introduced.

The concept of positive psychology was proposed by Seligman, the chairman of the American Psychological Association in the 20th century. He believes that when a nation suffers from wars or starvation, the mission of social science and psychology is to protect and cure; While in peace time, the main task of it is to make people live happier. In 1998, Seligman, Mihalyi Csikszentmihalyi, Fleur, Deena, Jamison and others conducted researches on the content, methods and structure of positive psychology at the Akumal Conference. In 2000, Seligman published *"Introduction to Positive Psychology"* in a journal called American Psychologist, which marked that positive psychology has become an emerging psychology subject.

With the society's continuous progress and development, the theory of positive psychology is constantly being improved. The content is now divided into three parts: positive experience, positive personal characteristics and positive social environment. Positive experiences can be divided into two categories: positive emotions and positive affections, which respectively represent the subjective and objective feelings of individuals. These experiences can be brought about when individuals recall the past, feel the present, or look forward to the future. Positive psychology believes that the important conditions for positive experience are the individual's happiness when recalling the past and hoping for the future. Positive personal traits are the development of one's potential in real life. Positive psychology mainly studies 24 kinds of positive personal traits, which basically belong to the category of personality traits. When a certain potential is activated which allows individuals to produce positive behaviours, positive personal traits will be generated. A good environment is the most important prerequisite for the healthy growth of an individual. An ideal school education should be helpful for the development of personal potential and the cultivation of positive personal traits. A good and positive social environment is beneficial for individuals living a happy and cheerful life.

Positive psychology believes that everyone is born with positive qualities and strengths, and encourages people to develop their positive personality potential so that they can have a good and optimistic attitude when treating people or dealing with things around them; more, people's own positive factors can be fully mobilized by it, which can lead people to eliminate their own psychological problems and confusion, and finally experience the happiness and warmth of life. Positive psychology believes that the development of individual's own positive qualities is the best way to prevent psychological problems [6]. The development of one's positive quality will allow them to maintain an inner peace in mind to face the encountered difficulties and frustrations, so as to own an incredibly strong heart and enjoy life actively and optimistically.

As a discipline, positive psychology mainly studies human's quality of health and development of potential, and connects society, family and school to take the guideline in cultivating qualified citizens. It believes that the starting point of psychology should be focused on many aspects such as internal quality and personality shaping rather than confined in fixed contents. The attitudes of psychologists should be adjusted, which means they should analyse and interpret human psychological phenomena from the perspective of positive psychology. The psychological phenomena mentioned here also include people's psychological problems. The priority of work should be changed on this basis, and psychologists should actively explore the individual internal potential and positive qualities, leading people to move towards a better life (people mentioned here include people with certain psychological problems). As long as they are guided properly, their internal potential can be fully activated to form positive features and they will have a beautiful life as expected.

2.2 Questionnaire Survey

Questionnaire survey is a method of empirical investigation in the form of issuing questionnaires. The subjects of this survey are four universities in S province, and some of the students are selected randomly among those universities for investigation. The questionnaire used in this survey is compiled by referring to the compilation method and concept of Zheng Richang's "*Construction on Mental Health Questionnaire for Undergraduates"*. 300 questionnaires in this survey are distributed, and 273 valid questionnaires are collected.

3. Results and Discussion

In order to solve the psychological health problems of undergraduates, an equal relationship should be established by psychology instructors to understand, communicate with and solve the psychological problems of their students. The traditional education model is usually aimed to diagnose and treat undergraduates who are exposed to psychological problems. As shown in Figure 1, the results of the survey found that most students believe that the object of focus of mental health education is only on students with psychological problems.

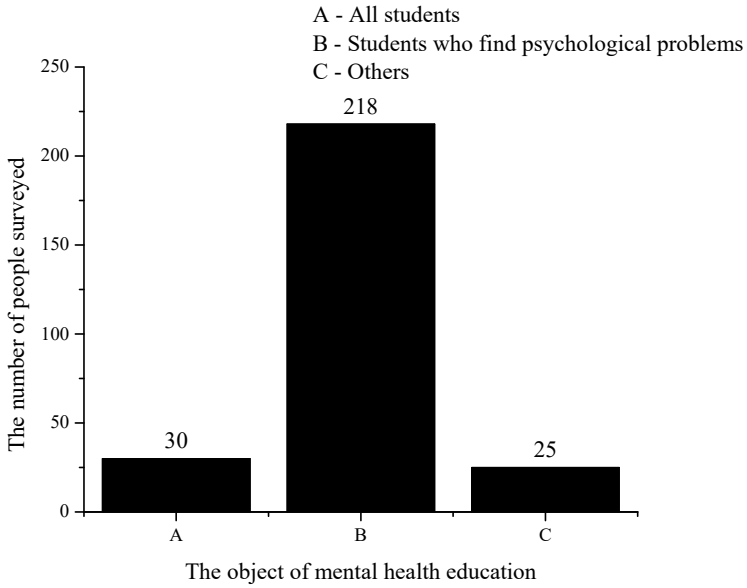

Figure. 1 Objects of focus of undergraduates' mental health education

This kind of psychological counselling seems to be an effective solution to the problem, but, in practice, students are always being treated as the source of the problem by teachers when conducting the counselling. Therefore, the way to solve the psychological problems for students becomes to review themselves and face their own psychology, which lead to the expansion of psychological trauma. The relationship between students and teachers is gradually be deteriorated resulting in students' resistant for psychological counselling, and eventually more serious psychological problems will be evolved. The negative emotions and cognitive bias also can be produced even among the mentally healthy students who undertake this kind of counselling. Such mental health education has too little effective help for students. As shown in Figure 2, the survey results find that only a very small number of students believe that the existing mental health education is useful.

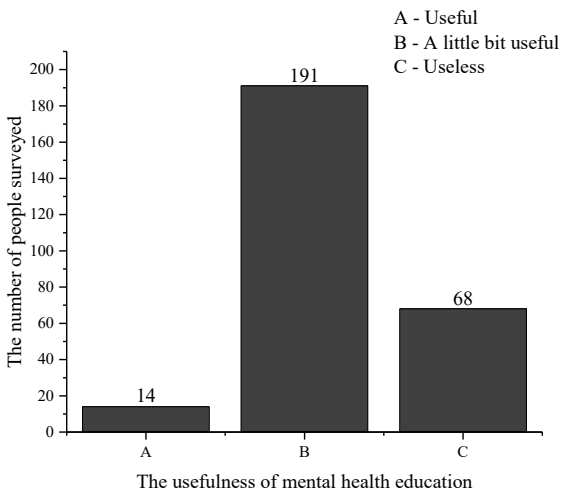

Figure. 2 The effect of mental health education on undergraduates

Mental health education applying positive psychology has changed the method of psychological counselling in which traditional psychology treats students as the source of the problem. The focus of this education method is that teachers should help students improve their positive qualities, understand students from a more positive, right, and brighter perspective, and emphasize students' cognition of their own strengths so that they can gain students' trust and recognition. By using positive discourse for long-term guidance, encouraging and helping students to realize their full potential, a good teacher-student relationship can be established, and it will further promote the impact of positive psychology on students' psychology and lastly enable students to regain self-confidence so that they will always have an optimistic attitude towards study and life.

In the current psychological health education for undergraduates, the psychological teacher will list the psychological problems of the students, and then make a specific analysis of these problems. The psychological problems are arranged according to the degree of impact on the students' study and life and the most influential one should be solved firstly. This way tends to only solve some temporal psychological problems of the students and fails to cultivate students' optimistic attitude and healthy personality. As shown in Figure 3, the survey finds that most students also believe that the attention of the content of mental health education should be paid more to the solutions of psychological problems.

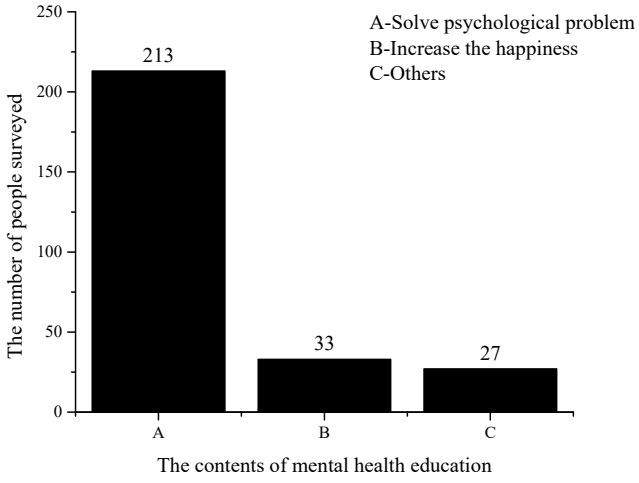

Figure. 3 Contents of mental health education for undergraduates

Traditional mental health education still needs some improvement and mental health education will focus on more after applying positive psychology. As shown in Figure 4, it find that most students believe that mental health education is aimed to reduce the occurrence of psychological problems.

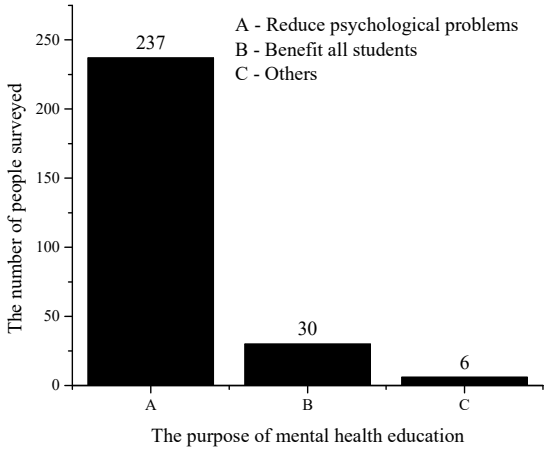

Figure. 4 The purpose of mental health education for undergraduates

Reduction of the occurrence of psychological problems is only the basic purpose of mental health education. The final purpose of mental health education applying positive psychology is to discover the positive characteristics of students for them acquiring a healthy outlook on life and values, so that the students can eventually cultivate a healthy personality. Carrying out mental health education with positive psychology will form a positive environment for students' study and life in which teachers and students can't only enrich the content and form of mental health education in the process of actively, but also participate in mental health education, only in this way the results of the mental health education can be achieved better.

To sum up, positive psychology is beneficial to promote the development of undergraduates' psychological health education and the application of positive psychology in undergraduates' mental health education can change the shortcomings of traditional psychology education. Therefore, we can apply the theory of positive psychology in the work of mental health education to improve the content of undergraduates' mental health education. This is one of the educational innovations.

Firstly, a sound mental health education system should be established in order to prevent undergraduates from having psychological problems. The ultimate goal of mental health education is to help undergraduates cultivate a healthy and perfect personality, so the students' psychological problem-solving is only a part of it. Therefore, it is necessary to apply positive psychology in mental health education by cultivating their optimistic attitude and positive quality to prevent the emergence of undergraduates' psychological problems. In this way, the prevention mechanism of psychological problems and the cultivation of undergraduates' healthy personality, which lack in traditional education, are completed and the mental health education system is improved.

Then, a positive and equal relationship between teachers and students should be formed. In mental health education with the application of positive psychology, teachers will treat each student with respect and fairness, reward students for their efforts and progress, and provide students with all kinds of support. Teachers are supposed to actively encourage and guide students and help them to fully understand themselves, so that they can easily be recognized by students in return. At last, a relationship of equal trust between teachers and students can be formed.

Finally, positive psychological qualities of undergraduates should be called forth to solve their psychological problems. When undergraduates are in counselling, it is necessary to bring out the positive side of their character and guide them to cultivate their optimistic attitude. Teachers should

continue to stimulate and strengthen the individual's various reality and potential through positive words so as to let them see their own advantages; and to help them form a healthy outlook on life and values, so they can ultimately cultivate positive qualities.

4. Conclusion

Many deficiencies are dwelled in traditional mental health education when it comes to undergraduates' counselling. The application of positive psychology theory to solve these problems is proposed. This study introduces positive psychology and questionnaire survey methods, analyses the advantages of applying positive psychology in mental health education based on the survey results, puts forward innovative approaches to undergraduates 'mental health education from the perspective of positive psychology and finds that the application of positive psychology is beneficial to the development of mental health education. This research provides a theoretical guidance for the innovation of mental health education. However, the ideas and methods of applying positive psychology in the innovation of mental health education are proposed while the substantive education content needs to be further studied in practice.

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Study on the Consistent Response Time Function of Adolescent Executive Function Psychology with Cognitive Participation

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Abstract. The meaning of executive function can be divided into broad sense and narrow sense. In a broad sense, executive function refers to the cooperative operation of many cognitive processes of individuals. The narrow sense of executive function usually refers to inhibition control. Most researchers have found that cognitive participation interferes with inhibitory function. Executive functions generally show a trend of increasing with age, but each executive function also has its own unique development trend. The research holds that executive function is a cognitive structure, which consists of the output elements of effectors, including inhibition, working memory, and organizational strategies necessary to respond. Bipolar disorder is one of the common mental diseases of adolescents. It not only affects their own learning and social functions, but also affects the harmony and stability of family and society. More importantly, adolescents are prone to develop into antisocial personality disorder. Based on this, this paper will discuss the consistent response time function of adolescent executive function psychology with cognitive participation.

Keywords: Cognitive Participation; Young People's Executive Function; Uniform Reaction Time; Bipolar Disorder.

1. Introduction

Bipolar Disorder (BPD) is a group of severe mental disorders characterized by high and low emotion, accompanied by corresponding cognitive, behavioral and interpersonal changes or disorders, and accompanied by certain physical symptoms. Earlier studies mainly used clinical methods, subjective reporting methods and behavioral measurement methods to understand the psychological characteristics of adolescents, but the study on the neurocognitive function of adolescents with bipolar disorder is relatively less [1]. Individuals who suffer peer rejection may have a series of serious adjustment problems in their later social life, including emotional problems, behavioral problems, academic problems, etc. Bipolar disorder is one of the common mental diseases of adolescents, which not only affects their own learning and social functions, but also affects the harmony and stability of family and society. More importantly, adolescents are prone to develop into antisocial personality disorder [2]. It is an advanced cognitive function to require individuals to select necessary information from a large number of information to implement the best plan, behavior, reasoning and problem solving when they need to make quick decisions. One thinks that the theory of mind is different from other general cognitive abilities and has domain specificity. The other thinks that the theory of mind has domain generality and can be explained by general cognitive abilities. This study will focus on the consistent response time function of adolescent executive function psychology with cognitive participation.

2. The Meaning and Structure of Executive Function

The meaning of executive function can be divided into broad sense and narrow sense. In a broad sense, executive function refers to the cooperative operation of many cognitive processes of individuals. The narrow sense of executive function usually refers to inhibition control. Individuals coordinate the activities of multiple cognitive subsystems in a dynamic and flexible way in the process of implementing goal behaviors [3]. Previous studies have found that emotions have significant effects on the executive functions such as planning, attention, decision-making, consistent response time function, problem solving, creativity and behavior control [4]. The

research holds that executive function is a cognitive structure, which consists of the output elements of effectors, including inhibition, working memory, and organizational strategies necessary to respond. If the executive function is impaired, it will inevitably cause obvious defects in neuropsychology. The results of the study found that, after matching the psychological ages of the two groups of subjects, autistic adolescents performed significantly worse in false belief tasks than normal adolescents. [5-6]The clinical manifestations of adolescents are different from those of adolescents, so it is still uncertain whether their executive functions are also different from those of adolescents . With the development of neuroimaging technology, more and more neuroimaging evidences prove that long-term physical activity can affect the structure and function of frontal lobe, thus people are more and more interested in physical activity and executive functions related to frontal lobe.

3. The Influence of Cognitive Participation on Various Executive Function Sub-components

3.1 The Influence of Cognitive Participation on Inhibitory Function

Most researchers have found that cognitive participation interferes with inhibitory function. Executive functions generally show a trend of increasing with age, but each executive function also has its own unique development trend. Sun Xiaodan and others studied the structure of executive function with latent variable analysis method, and examined the three sub-components of executive function [7]. Specifically, the executive function mainly includes integrating multi-channel sensory input, generating multiple different reactions, maintaining fixed set, completing behaviors under the guidance of objectives, adapting to the changed environment, making plans and conducting self-evaluation. Executive function does not begin to appear until puberty, but more studies show that executive function develops earlier. Therefore, Sun Xiaodan and others believe that the correlation between adolescents' individual theory of mind and executive function may be caused by age and language influence. Bipolar disorder adolescents often show a series of abnormal behaviors such as fighting, playing truant, running away from home, lying repeatedly, stealing, arson and disobedience, which seriously affect the learning function of adolescents themselves. The research conclusions of neuropsychology and neuroimaging are consistent [8]. In addition, other studies have found that there are gender differences in the interference of cognitive participation on inhibitory function. The growth of working memory is larger, while inhibition and cognitive flexibility change in a smaller range.

3.2 The Influence of Cognitive Participation on Switching Function

In recent years, some scholars have paid attention to the effect of executive function on the function of consistent response time. In different executive functions, the brain regions that depend on have different emphases. For example, the activation of anterior cingulate gyrus is mainly needed in the process of attention and inhibition of processing.[9-11]. In recent years, researchers began to explore the relationship between emotion and executive function[12-13] The conversion cost under positive emotion is significantly higher than that under neutral emotion[14], while the conversion cost under cognitive participation is not different from that under neutral emotion[15]. Physical activity may affect executive function by promoting physical health. It is believed that the relationship between the theory of mind and the executive function cannot be explained only by the needs of task execution, but there is a deep development link between them.

Deficiencies in cognitive flexibility, working memory, inhibitory control and planning. Executive dysfunction persists in remission, suggesting that adolescents may have organic or functional impairment of frontal lobe. It was found that compared with neutral faces, both emotional faces can interfere the participants' performance in the task of stopping signals, i.e. low-threat cognitive participation interfere inhibitory function[16-18].

3.3 The Effect of Cognitive Participation on the Function of Consistent Response Time

Due to bipolar disorder adolescents have a wide range of cognitive impairment, mainly including executive function, attention, reaction time and memory, which can occur in different stages of the disease. Meanwhile executive function is damaged particularly significant[19]. According to Pavuluri et al, emotional state is not an influential factor of cognitive dysfunction, such as executive function, working memory, attention and speech learning, which is a characteristic symptom of adolescent BPD.[20]Inhibition function refers to the conscious inhibition of dominant, automatic and dominant reactions. Compared with positive emotional materials, depressive subjects are more susceptible to cognitive participation materials and more difficult to have consistent response time function. Cognitive participation information in working memory shows that cognitive participation impairs the consistent response time function of depressive subjects. In the process of reaction inhibition, there are mainly activities of dorsolateral prefrontal cortex. Task management requires activation of dorsolateral prefrontal cortex and anterior cingulate cortex, but anterior cingulate cortex is not dominant. The development of individual theory of mind is hierarchical and sequential, and the understanding of other people's beliefs and white lies appears earlier than the understanding of gaffes. The number of errors at this stage reflects the complete set of attention switching ability, which is used to explain the flexibility and execution control problems when changing tasks. This indicates that attention switching and flexibility are poor for adolescents with bipolar disorder. Therefore, we speculate that the improvement of juvenile executive function may be related to drugs, and some studies show that mood stabilizers and atypical antipsychotics have the effect of improving juvenile cognitive function.Exercise has stronger influence on people with poor executive function, which also tells us that exercise has different influence on executive function[21]. The more poor executive function people have, the more sports they need.

4. Relationship between Physical Activity and Executive Function of Adolescents

4.1 Selective Effect of Physical Activity on Executive Function

The execution function also involves the attention process. The prefrontal lobe obviously plays an important role in attention. It is responsible for searching, monitoring, concentrating and changing the direction of attention. Young people's real-time monitoring and operation ability for newly entered working memory information decreases because the subjects cannot use the central execution system or long-term memory system to improve the work of voice loop during information processing. The upward counterfactual produced by teenagers is significantly more than the downward counterfactual. Addition counterfactual is significantly more than subtraction and substitution. There is no significant difference between subtraction and substitution of counterfactual. In particular, cognitive participation can increase the activation of the extensive connection network of emotion-related thoughts, thus consuming cognitive resources and enabling subjects to meditate on thoughts related to emotion but not related to tasks. Studies on adolescents have similar conclusions: executive dysfunction is positively correlated with the course of disease [22]. Correlation analysis also showed that executive function damage had no correlation with the severity of clinical symptoms. Some scholars' research shows that bipolar disorder has high impulsiveness [23], therefore, they may be eager to accomplish this task without serious thinking and planning. The inhibitory ability of exercise to executive function has been strengthened. The prefrontal lobe is the latest region of cerebral germline development and the slowest region of individual maturation. The development of prefrontal cortex should continue to the early stage of teenagers and even adolescents. It is possible that the relevant models of psychological theory and executive function are different between teenagers and preschool children.

4.2 Influence of Physical Activity Characteristics on Executive Function

Attention resource theory is quite consistent with cognitive load theory. It holds that emotion and cognitive processing both need to call attention resources, and the two will compete for limited attention resources. Exercise intensity is linearly related to cognitive function and inversely U-shaped to cognition. The persistence of executive dysfunction seriously damages the learning and social functions of teenagers and cannot return to society well, thus causing repeated attacks of teenagers. It seems that teenagers can produce more counterfactual thinking, and the characteristics of counterfactual thinking in positive outcome events need further research. There are individual differences in the capacity of executive function and nerve efficiency. The capacity of executive function depends on whether the individual uses situational memory to connect the current job with the information in long-term memory. Teenagers did not decline in their ability to perform inhibition-conversion. Therefore, the poor performance of adolescents in verbal tasks may not be limited by executive function. Adolescents with bipolar disorder have poor task completion, relatively more errors, and cannot adopt a search strategy to help them complete the task. The budding self-control skill indicates the existence of executive function. This work is undoubtedly important in explaining that appropriate developmental tasks can reveal early executive function.

Previous studies have shown that the function of consistent response time is affected by adolescents' inhibitory ability, and there are obvious differences between underachievers and gifted students in inhibitory interference stimulation.[24-25]Because human social interaction and communication are quite complicated, involving the operation of various executive functions. The task of psychological theory includes executive components. For example, when teenagers complete classical false beliefs, they cannot understand false beliefs if they cannot suppress the dominant idea of the actual location of objects. Zhang Huili et al [26] found that executive dysfunction is related to attention deficit hyperactivity disorder, but is not related to oppositional defiant disorder and bipolar disorder. However, even if they are all visual evoked, the evoked effects are not consistent. For example, video evoked is more authentic and vivid than simple lexical evoked and emotional picture evoked, and the evoked effects are relatively ideal. Research holds that executive function is an important manifestation of intelligence. At the same time, when individuals with high neural efficiency process the same information, the activated brain regions are relatively small, indicating that less executive function resources are occupied, while conversely, larger executive function resources are occupied. It can be considered that there is no parallel relationship between the executive dysfunction of adolescents and the severity of clinical symptoms. It is speculated that the executive dysfunction of adolescent BPD may be a separate symptom.

5. Summary

The Stroop effect of the executive function suppression subfunction and the task effect of the information consistent response time subfunction have negative predictive effects on the consistent response time function.[27] Individuals with better performance may also adopt certain processing strategies when processing information, thus making up for the increase in task difficulty. Teenagers have more counterfactual judgments than other judgments and irrelevant judgments, which shows that even young teenagers can pay attention to the story and produce content related to the story. Teenagers all have defects in executive functions such as inhibition control, working memory, cognitive flexibility and planning. Bipolar mania is more serious in inhibition and control than bipolar depression. The different performances of adolescents in two kinds of mental theory tasks with different complexity indicate that the later developed mental theory declines earlier, while the earlier developed mental theory declines later. Understanding and explaining some social phenomena and mental health problems will help to cultivate the innovative ability of normal teenagers and autistic teenagers to adapt to various learning environments and lay a theoretical foundation for the overall implementation of quality education.

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An Empirical Research on the Competencies of Distance Education Tutor at the Open University of China in the Context of Blended Learning

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Abstract. Considering the common contradictions between work and study as well as family and study among distance learners, “more online, less face-to-face” should be an ideal mode in distance learning. How the distance education tutors implemented blended learning (BL) via the platform of Moodle at the Nanhai Experimental College of OUC(NHOUC) is investigated by means of semi-structured interviews and unstructured observation. Besides, what competencies the tutors have already possessed and will need to develop are looked into through a questionnaire survey. The study has found the best current practice of BL at the NHOUC is no more than “face-to-face equal to online”. Hence, the recommendations include that tutors should have a good grasp of basic learning theories and creatively apply them to design for learning, strengthen services of non-academic support and attach importance to distance education principles to effectively employ the mode of “more online, less face-to-face”.

Keywords: Blended Learning, Distance Education, Tutor, Competencies.

1. Introduction

Since the beginning of 21st century, blended learning (BL) has become a buzzword in the field of education and training. As for the definition of BL, different scholars have different ideas based on different perspectives, such as delivery mode, technology, chronology, locus, roles, pedagogy, focus and direction [1]. However, it typically refers to a combination of traditional face-to-face (F2F) and online learning [2] so as to enjoy an integration of merits provided by classroom lectures and E-learning and thus achieve optimal learning outcomes [3].

As the key institution guiding Chinese distance education, the Open University of China (OUC) would build a new learning system characterized by learner-centered, web-based autonomous learning that uses distance learning methods supported by F2F tutorials, as was stated in *the Scheme for Developing OUC (2011)*. This so-called “new learning system” is actually a mode of BL.

According to the present system in the OUC, the distance education teachers are divided into three categories, namely, 1) host teacher who is in charge of updating the course materials and organizing the teaching and research activities within the confines of the whole country; 2) duty teacher who is to participate in learning design and materials construction, organize or take part in the teaching and research activities, and guide or supervise the implementation of learning design within the confines of a province; 3) tutor who is not entitled to learning design and materials construction but offering personalized support and service to distance learners such as tutorials on any difficulties, keeping track of how the learners are getting on with their study and facilitating their learning process if necessary within the confines of a learning center. Accordingly, it is stated in the newly-made document *Standards of Teachers’ Capabilities in the OUC* that a tutor is required to possess basic academic and support service capabilities, hence the ability of learning design is excluded. The drawback of the above regulations is that the tutor who directly help distance learners learn does not have the authority to design any learning activities on line while the host and duty teachers who are empowered to construct online course materials can not design scientific and well-targeted learning activities due to the lack of understanding of learners[4]. Consequently, Li *et al*. have proposed that the tutor should be empowered to design learning and construct resources[5]. Actually, the tutors of optional courses (since all the compulsory courses must be designed by the headquarter of the OUC in Beijing) at the Nanhai Experimental College of OUC(NHOUC) have been fully authorized to design for learning and construct resources via the platform of Moodle since the spring semester in 2015. Based on this context, the duties of tutors to

be discussed in this study include traditional tutorials, keeping track of the learners' learning process as well as learning design and online course construction.

Berge first defined the four capabilities of tutors, including teaching, social, organizational, and technical[6]. Salmon enumerated the qualities of an e-moderator from five perspectives: understanding the online learning process, mastering the technical operation of the learning software or platform, having online communication skills, possessing content expertise and having certain personality traits [7]. Wang held that the competencies of distance teachers consist of academic knowledge, distance learning skills and support service skills[8]. A booklet *Teaching and learning with the Open University* compiled by the Open University in UK provides a concise summary of the skills that tutors need: academic support and non-academic support – the former refers to working with students' cognitive needs in learning while the latter refers to working with students' organizational and emotional issues around learning[9]. Among the existing researches, a few are based on the methods of literature analysis to summarize the abilities and qualities that distance education tutors should possess [8, 9], most on the methods of empirical research to investigate the duties and roles of tutors [5, 6, 7] while few focus on the context of BL in open universities in China to study the ability status quo and needs of tutors. Undoubtedly, when the tutors undertaking BL in the OUC transfer from the traditional mode of fully F2F, teacher-centered conveying of knowledge to the current more online, learner-centered construction of knowledge, they must have specific qualities and abilities and will meet some difficulties and challenges. So how do they improve their abilities to adapt to the BL mode of "more online, less F2F"? Studying these problems will definitely have important empirical value for the improvement of the quality of distance education in China in the era of advanced information and communication technologies (ICTs).

Based on the integration of the views of various scholars and the analyses of the semi-structured interview results of the research subjects, this study listed 18 qualities and abilities of distance education tutors (Table 1), which can be roughly categorized into four perspectives: pedagogy and learning design, content expertise, distance teaching skills and support service skills. And, based on these 18 qualities and abilities, a questionnaire was designed to investigate the ability status quo and needs of tutors at the NHOUC which serves as an experimenter and model of learning modes innovation in the national system of open universities in China.

Table 1. Qualities and abilities of distance education tutors

Categories	Qualities and abilities
Pedagogy and learning design	Basic learning theory
	Ability to innovate teaching methods
	Ability to design online learning activities
	Ability to design formative assessment scheme
	Ability to build F2F collaborative learning environment
	Ability to build online collaborative learning environment
Content expertise	Academic knowledge of the course
Distance teaching skills	Distance education principles
	Technical ability to organize distance learning activities
	Ability to integrate F2F with online learning
	Ability to construct online resources
	Ability to communicate online
	Ability to assess online assignment and give feedback
	Ability to monitor online learning
Support service skills	Ability to help learners solve technical problems in online learning
	Ability to stimulate learners' motivation
	Ability to provide guidance to learners on learning methods
	Ability to provide psychological help to learners who have experienced setbacks in the learning process

2. Methodology

This study was conducted with the main method of qualitative research and the supplementary method of quantitative research.

2.1 Semi-structured Interviews

Based on four indicators such as age, gender, years of teaching, and majors of teaching, 10 interviewees were selected who undertook the distance education tutoring work via the Moodle platform at the NHOUC in the school year of 2016-2017. The interviewees were interviewed individually by means of QQ (a very popular Chinese instant messaging tool) chat for a duration of 30-40 minutes on the following three open-ended questions:

A. What difficulties do you think you have encountered in the process of online teaching via the Moodle platform?

Prompt words for "difficulties": learning guidance and promotion; learning activity design and organization; technical support; etc.

B. What do you think is the biggest improvement/gain you have achieved in the process of online teaching via the Moodle platform?

C. What do you think of the effect of your online teaching on the distance learners? Will you deploy the full formative assessments without the traditional proctored final examination?

2.2 Unstructured Observations

From February to July in 2017, the researchers observed 10 BL courses undertaken by the above 10 interviewees. The frequency of observing F2F classroom is once at the beginning, the middle and the end of the term respectively, with the focuses on what multimedia teaching approaches are deployed, what pedagogy is used, how the tutors design and organize the F2F learning, and how they blend F2F with online to help learners learn effectively? While the frequency of observing the Moodle platform is once every 2 weeks, with the focuses on how the tutors construct or use online resources, how they design and organize online learning, and how the learners perform in online learning.

Both the data of the interviews and observations were analyzed with Nvivo software and the main results were derived.

2.3 Questionnaires

Based on the difficulties encountered by the tutors in the process of online teaching as well as the problems existing in the implementation of BL, as were collected by means of interviews and observations, *a Questionnaire on the Competencies of Distance Education Tutor at the NHOUC in the Context of BL* was compiled, which consists of two parts including ability status quo of tutors (18 single-choice questions using the Likert five-level scale) and needs of tutors (the same 18 single-choice questions as the survey on the ability status quo but from the aspect of "importance" instead).

In order to secure the authenticity of data, the questionnaire was published on the website www.wjx.cn (a popular platform for online survey in China) to anonymously collect the relevant information of full-time tutors at the NHOUC in the spring semester of 2017. The questionnaire was open for one week and 43 valid samples were received. According to the information that the researchers learned from the teaching department of the NHOUC, the number of full-time teachers who routinely undertake the tutoring work is about 50, so the sample is representative.

The data of the questionnaire were imported into SPSS software for statistical analysis and the supplementary results were derived.

3. Results

According to the interviews of 10 research subjects as well as the observations of their F2F classroom and online courses on the Moodle platform, six of them (see Table 2) implemented the

mode of “more F2F, less online” while the remaining four (see Table 3) “face-to-face equal to online”, hence no one has adopted the mode of “more online, less F2F”. How the tutors implemented BL actually reflects their different qualities and abilities.

3.1 Six Tutors Implemented the BL Mode of “More F2F, Less Online”

3.1.1 Results of Interviews

A. Difficulties encountered in online teaching

Except Tutor C2, the other five tutors all thought that they or their students encountered technical difficulties, just as Tutor R described:

“It was my first time to use this platform, so I didn’t know very well how to operate it. When I met the technical problems such as the students couldn’t enroll on or I couldn’t arrange the online test questions, I asked a technical colleague in the Learning Support Service to help me. He directly logged into my account to deal with all these problems himself and then explained to me on QQ but unfortunately I still didn’t get those skills.”

Four tutors thought it was difficult to “identify whether the assignment was plagiarized”.

B. Improvement/gain achieved in online teaching

Three tutors didn’t think that they gained something other than finishing the work required by the College while the other three did think they benefited from their online teaching, such as “effectively controlling the pace of submitting assignments”, “learning to arrange more diverse assignments” and “mastering new forms of formative assessment”.

Comparing the interview results of “difficulties encountered” and “improvement/gain achieved”, the researchers found that the technical or operational difficulties obviously affected the tutor’s feelings in online teaching: They were unfamiliar with the learning design tools on the platform so they naturally distributed more efforts on the traditional F2F and less online.

C. Effect of online teaching on the distance learners

Accordingly, the three tutors who didn’t think that they gained something from online teaching didn’t think that the distance learners had a better learning effect, either, while the other three believed that their online teaching had certain but very limited effects.

As for the full formative assessments without the traditional proctored final examination, five of them believed that the final examination was definitely necessary to guarantee the quality of study while only one accepted the full formative assessments without final examination with the premise of strictly evaluating the learners’ F2F performance, which inferred that this group of tutors didn’t have confidence in their online teaching skills.

3.1.2 Results of Observations

A. Observations of F2F classroom

The observations of the six tutors’ F2F classroom are shown in Table 2. In terms of the multimedia approaches, the tutors generally prepared PowerPoint courseware covering the main knowledge points of the textbooks and some extended cases or related extracurricular knowledge. And, in terms of pedagogy, they followed the traditional didactic, “teacher-centered” methods to systematically elaborate the knowledge points for learners and organize the discussion of related cases by way of asking the learners to read certain parts of their textbooks or simply find some tips from the tutors' courseware. The amount of information that tutors delivered in the classroom was large, and the tasks of the learners were to diligently absorb without actively exploring. Except that Tutor F often gave some feedback on the completion of online assignment in the F2F classroom, the remaining five tutors didn’t link their F2F to online.

Table 2. Observations of the six tutors' F2F classroom

Initial letter of tutor's surname	Course name	Multimedia approaches	Main pedagogy	How to blend F2F and online
L1	Psychology	PPT	Mainly didactic, supplemented by case discussion	F2F was not linked to online.
F	Financial case analysis	PPT; training software; online platform	Mainly didactic, supplemented by heuristic interaction.	Feedback on the completion of online assignment in F2F
C2	Multimedia courseware production and application	PPT	didactic	F2F was not linked to online.
R	Practical writing	PPT; WORD	Mainly didactic, supplemented by case discussion	F2F was not linked to online
C1	International business management	PPT	Mainly didactic, supplemented by heuristic interaction.	F2F was not linked to online.
L3	Foreign legal history	PPT	Mainly didactic, supplemented by case discussion	F2F was not linked to online.

B. Observations of Moodle platform

As an open source course management system, Moodle embodies many useful features for learning design including some tools suitable for interactive learning activities, such as wiki collaboration, interactive evaluation, chat, forum and voting. Generally, all the tutors, required by the College, used the tools "forum" (interactive, for three to four times of asynchronous discussions), "quiz" (non-interactive, for some unit-tests), "assignment" (non-interactive, for some writing work), "folder" or "file" (non-interactive, for uploading the related teaching materials) and didn't explore more tools for interactive activities. By checking the log-book that comes with the platform, the researchers found that the "forum", "quiz" and "assignment" were frequently visited by learners because they were usually the main part of formative assessment while the "folder" or "file" was rarely visited although there stored a large volume of resources. Hence, on the whole, the six tutors were not able to guide the distance learners to an effective online learning.

3.2 Four Tutors Implemented the BL Mode of "F2F Equal to Online"

3.2.1 Results of Interviews

A. Difficulties encountered in online teaching

These four tutors mentioned two difficulties, one was in learning guidance and promotion. As Tutor L2 described:

"Students didn't complete the online learning task as required to prepare for class discussion hence the F2F discussion failed to achieve the desired results."

The other was in creating proper learning activities. As Tutor T mentioned:

"I designed quite a few activities for formative assessment but some learners reported that they suffered from the stress in coping with these assignments, and I myself suffered from the troublesome in calculating the final score."

B. Improvement/gain achieved in online teaching

All the four tutors believed that they benefited from their online teaching, such as "more convenient in organizing learning process", "helping learners review and consolidate the learning contents after class", and "more timely feedback on assignments".

Compared with the difficulties and gains mentioned by those six tutors, these four tutors thought of more problems on learning design, learning guidance and promotion and were more willing to explore some tools on the platform to facilitate their F2F teaching.

C. Effect of online teaching on the distance learners

In this regard, the four tutors were also divided into two groups. One believed that the effect of online teaching depended on whether learners learned actively or not, the other definitely believed that their online teaching had good effect on learners.

As for the full formative assessments without the traditional proctored final examination, two of them accepted it because this arrangement might give them some discretion in designing for more practical learning while the other two were worried about it because the current learning resources and activities on the platform were not completed or scientific enough to support qualified full formative assessments without teachers' invigilation.

3.2.2 Results of Observations

A. Observations of F2F classroom

The observations of these four tutors' F2F classroom are shown in Table 3. Compared with those of the six tutors, the same thing was that they also adopted the "teacher-centered" teaching methods in transferring the contents to learners; the difference was that they placed stress on online learning, took measures to guide and urge learners to complete online learning tasks, and tried to link their F2F to online.

Table 3. Observations of the four tutors' F2F classroom

Initial letter of tutor's surname	Course name	Multimedia approaches	Main pedagogy	How to blend F2F and online
T	Community governance	PPT; online platform	Didactic and interactive	Change the F2F contents to questions in the online "quiz" or topics in the "forum".
L2	Tax basis and practice	WORD; EXCEL; online platform	Didactic and case based	Before F2F, learners were required to self study some online cases for F2F presentation.
H	Finance accounting practice	PPT; online platform	Didactic and case based	In F2F, arrange some time for learners to do the online "quiz" and give immediate feedback on the completion; video the key contents of the F2F and upload them on the platform.
Z	Structure and maintenance of automotive engine	PPT; online platform	Didactic and authentic	In F2F, feedback on the completion of online "quiz", providing targeted guidance and comment.

B. Observations of Moodle platform

The tools that these four tutors used frequently were also "forum", "quiz", "assignment", "folder" or "file" and no other tools were explored for interactive activities. But, these four tutors were more skilled in using the tool "quiz" and able to urge a higher proportion of learners to complete the quizzes, which indicated that this group of tutors were slightly better at distance learning skills.

3.3 Questionnaire Survey on the Ability Status Quo and Needs of Tutors

3.3.1 Results of the Survey on the Ability Status Quo of Tutors

This part of survey required the tutors to honestly evaluate the availability of their existing qualities and abilities (Table 4). Among them, the three items with highest average value and hence most confidence were "academic knowledge of the course", "distance education principles" and "technical ability to organize distance learning activities" (which scored the same as the item of "ability to communicate online"), while the three ones with lowest value and hence least confidence

were “ability to construct online resources”, “ability to innovate teaching methods” and “ability to help learners solve technical problems in online learning”.

Table 4. Self-evaluations of the ability status quo of tutors

Question\Option	1 Not at all	2 Less than	3 Generally available	4 More than	5 Fully available	Average
Q1. Distance education principles	0(0%)	1(2.33%)	16(37.21%)	20(46.51%)	6(13.95%)	3.72
Q2. Basic learning theory	0(0%)	2(4.65%)	13(30.23%)	25(58.14%)	3(6.98%)	3.67
Q3. Ability to innovate teaching methods	1(2.33%)	5(11.63%)	16(37.21%)	20(46.51%)	1(2.33%)	3.35
Q4. Academic knowledge of the course	1(2.33%)	2(4.65%)	6(13.95%)	22(51.16%)	12(27.91%)	3.98
Q5. Technical ability to organize distance learning activities	0(0%)	1(2.33%)	19(44.19%)	15(34.88%)	8(18.6%)	3.7
Q6. Ability to design online learning activities	0(0%)	3(6.98%)	23(53.49%)	13(30.23%)	4(9.3%)	3.42
Q7. Ability to integrate F2F with online learning	0(0%)	3(6.98%)	18(41.86%)	16(37.21%)	6(13.95%)	3.58
Q8. Ability to design formative assessment scheme	0(0%)	2(4.65%)	20(46.51%)	17(39.53%)	4(9.3%)	3.53
Q9. Ability to construct online resources	0(0%)	6(13.95%)	21(48.84%)	12(27.91%)	4(9.3%)	3.33
Q10. Ability to communicate online	0(0%)	1(2.33%)	17(39.53%)	19(44.19%)	6(13.95%)	3.7
Q11. Ability to assess online assignment and give feedback	0(0%)	1(2.33%)	18(41.86%)	18(41.86%)	6(13.95%)	3.67
Q12. Ability to build F2F collaborative learning environment	0(0%)	4(9.3%)	16(37.21%)	19(44.19%)	4(9.3%)	3.53
Q13. Ability to build online collaborative learning environment	0(0%)	6(13.95%)	18(41.86%)	14(32.56%)	5(11.63%)	3.42
Q14. Ability to monitor online learning	0(0%)	5(11.63%)	18(41.86%)	17(39.53%)	3(6.98%)	3.42
Q15. Ability to help learners solve technical problems in online learning	0(0%)	8(18.6%)	14(32.56%)	17(39.53%)	4(9.3%)	3.4
Q16. Ability to stimulate learners' motivation	0(0%)	2(4.65%)	17(39.53%)	22(51.16%)	2(4.65%)	3.56
Q17. Ability to provide guidance to learners on learning methods	0(0%)	3(6.98%)	18(41.86%)	17(39.53%)	5(11.63%)	3.56
Q18. Ability to provide psychological help to learners who have experienced setbacks in the learning process	0(0%)	7(16.28%)	13(30.23%)	18(41.86%)	5(11.63%)	3.49

3.3.2 Results of the Survey on the Ability Needs of Tutors

Although this part of survey consisted of the same 18 matrix questions, the tutors were required to evaluate the importance of the qualities and abilities. As could be seen from Figure 1, the tutors believed that the first most important ability was “academic knowledge of the course”, the second were “technical ability to organize distance learning activities” and “ability to stimulate learners' motivation” and the third were “ability to innovate teaching methods”, “ability to integrate F2F with

online learning" and "ability to communicate online". The researchers made a comparison between the three items of the most confidence and the three of the greatest importance and found that the tutors were the most confident on "academic knowledge of the course" and also considered it the most important; very confident on "distance education principles" but didn't consider it so important; confident on "technical ability to organize distance learning activities" and "ability to communicate online" and also considered them important; not confident on "ability to innovate teaching methods", "ability to stimulate learners' motivation"and "ability to integrate F2F with online learning"but considered them important.

The tutors believed that the first least important was "ability to help learners solve technical problems in online learning", the second were "ability to build F2F collaborative learning environment" and the third were "ability to assess online assignment and give feedback", "ability to design formative assessment scheme"and "basic learning theory". The researchers also made a comparison between the three items of the least confidence and the three of the least importance and found that the tutors were the least confident on "ability to help learners solve technical problems in online learning"and considered it unimportant, which was even mentioned clearly in the open-ended fill-in-the-blank question at the end of the questionnaire as "the role of the tutor should not be confused with that of the technician" and indicated that the respondents did not think they needed the technical capabilities in helping the learners other than organizing their own teaching.

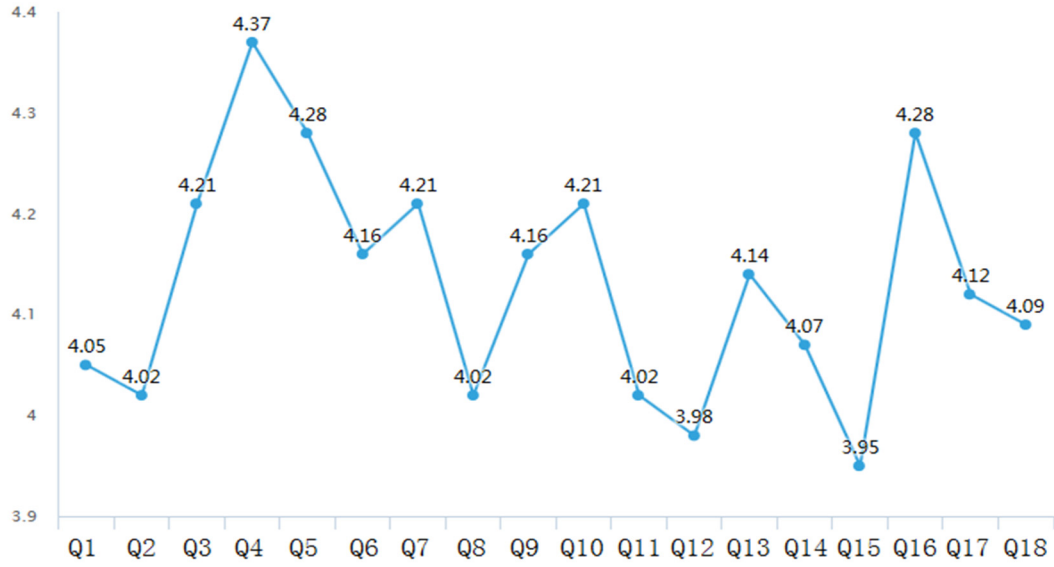

Figure 1. Evaluations of the ability needs of tutors

4. Discussion

Technology is an essential element in the effective implementation of BL mode. Berge pointed out that learners expected their tutors to have the expertise and skills in online teaching. When learners found that tutors themselves were clumsy in using the learning platform, they would lack confidence in online learning[10]. However, that the respondents did not agree to provide technical support for learners and some themselves even had difficulty in operating the platform directly led them to place more emphasis on F2F but less online and to be incapable of linking F2F to online or exploring more tools on the platform for interactive activities, which undoubtedly negatively affected the learning experiences of distance learners.

For the tutors at the NHOUC, the innovation of pedagogical concept and the improvement of the ability to design for learning should be paid more attention to. In the context of learning powered by various ICTs, the constructivism learning theory may work as appropriate pedagogy because constructivists advocate that learners, guided by teachers and supported by ICTs, actively participate and explore in the learning processes so as to construct knowledge from their own

experiences rather than passively accept the knowledge transmitted by teachers. If the virtual learning environment(VLE), even with much use of learning technologies, offers online learning in a way that relies mainly on knowledge transmission rather than construction, both the learners and teachers will experience banality, confusion and even disappointment [11, 12, 13]. However, the tutors at the NHOUC considered such pedagogical abilities the least important as building F2F collaborative learning environment, designing formative assessment scheme and having a good grasp of basic learning theory, that's why most of them could not scientifically link F2F to online and suffered from the difficulties in online learning promotion and proper learning activities creation.

It is an absurd logic that on the one hand the respondents were not confident on the abilities to innovate teaching methods, to integrate F2F with online learning and to stimulate learners' motivation but believed them important, on the other hand they were confident on basic learning theory but considered it unimportant. As far as the researchers were concerned, should a tutor have a good grasp of basic learning theory, he /she would be capable of scientifically designing F2F or online learning based on different attributes of different courses and innovating their own teaching methods by adopting such pedagogical approaches as inquiry based, problem based, case based, collaborative, dialogic, situate, constructivist and so on instead of solely didactic. However, the truth was quite different. In the actual implementation of BL modes, the respondents only added technical factors to their traditional didactic, lecture based classroom in terms of using PPT to transmit knowledge to learners in F2F, the tool "folder" or "file" on Moodle platform to upload related teaching materials for learners to review after class and the tool "quiz" or "assignment" to arrange some "drill and practice" tasks for learners to complete, which did not essentially change the traditional teaching mode. Did they have no intentions of innovating or not know how to innovate? For the former reason, it might be necessary for the NHOUC to design some institutional rules to require the tutors to innovate their teaching paradigm; for the latter, it might be of urgency for the tutors to receive targeted and continuous training.

The importance of the ability to design formative assessment scheme was ranked the third least important, which was mutually confirmed by the interview results that some respondents did not trust the feasibility of full formative assessments without the traditional proctored final examination. However, Salmon believed that good formative assessment design should empower and engage the learners: the former aims to facilitate opportunities for self-assessment, reflection and self-correction, to encourage positive motivational beliefs and to apply what is learned in new tasks; the latter refers to capturing sufficient study time and effort in learning activities, inducing deep learning, and evenly distributing learners' effort by way of weekly or topical learning arrangements [14]. Hence, if the tutors at the NHOUC had scientifically designed formative assessment schemes and strictly implemented the assessment criteria, good quality of learning would not have depended so much on the traditional proctored final examination and even full formative assessments based on learning processes would help to supervise and motivate learners to effectively complete all the required learning tasks.

5. Recommendations

The findings of this research suggest the tutors at the NHOUC take the following initiatives to improve their competencies to adapt to the BL mode of "more online, less F2F ":

(1). Having a good grasp of basic learning theories and creatively applying them to design for learning. In designing F2F activities, the learners should be promoted to have autonomous online learning prior to class meetings while in designing online activities, the learners should be driven to interact with peers and explore more so as to construct knowledge from their own experiences. Above all, when designing a formative assessment scheme, tutors should arrange the assessment tasks by constructive alignment of "learning what", "assessing what" and "achieving what".

(2). Strengthening services of non-academic support. By being trained or self-exploring, a tutor should manage to proficiently operate the learning platform and help learners solve some common

technical problems, and in case of uncommon technical inquiries, the tutor could refer to specialized technicians in the College and track the resolution of the issues. At the same time, a tutor should be approachable, listen sympathetically to the adult learners' difficulties arising out of the struggles between work and home commitment, offer guidance on learning methods and strategies, and provide emotional support for the learners experiencing setbacks in the course of study.

(3). Attaching importance to distance education principles and effectively putting them into practice. Feng et al pointed out that the tutors' complaints about learners' lack of enthusiasm for learning actually reflected their lack of understanding of adult distance learners [15]. When designing for BL, tutors should pedagogically adapt to distance education by considering the learners' age, learning motivation, computer-aided learning abilities, current academic foundation and available learning conditions.

6. Conclusion

This paper has investigated how the distance education tutors implemented BL via the platform of Moodle at the NHOUC, what their current abilities were like and what abilities they expected to develop in the implementation of BL. The findings suggest that most tutors in this study still relied heavily on the traditional didactic, lecture-based classroom to convey knowledge instead of guiding learners to learn autonomously online to construct knowledge, and that the mode of "face-to-face equal to online" was the current "best" practice of blending, let alone that of "more online, less F2F". Actually, how the tutors implemented BL reflects their different qualities and abilities. To improve their competencies to adapt to "more online, less F2F ", the tutors at the NHOUC need to have a good grasp of basic learning theories and creatively apply them to design for learning, strengthen services of non-academic support and attach importance to distance education principles and effectively put them into practice.

Although this research was undertaken in the environment of the NHOUC, the findings are of certain representative value for the whole system of the open universities in China. BL has placed greater demands on the competencies of distance education tutors. However, even when the tutors know how to improve their competencies, it would still remain a problem whether they are willing to pursue better performances in the implementation of BL. The paper hence concludes by suggesting further research into the distance education institutions' strategies for requiring the tutors to innovate their teaching paradigm and adapt to the mode of "more online, less F2F ".

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Exploration on the Path of Synergistic Effect of Patriotism Education in College English of Application-oriented Colleges in China

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Abstract. As a basic required course for non-English majors in most colleges in China, college English (CE) plays an irreplaceable role in the implementation of patriotism education. This paper first reviews the connotation, theoretical guidelines and principles of implementing synergistic effect of patriotic education (SEPE) in application-oriented colleges. Then, it introduces practical explorations from Tianjin College, University of Science and Technology Beijing (TJC, USTB) which are focused on student-centered patriotism activities in CE classroom and extracurricular practice. Lastly, a trinity path is put forward on how to implement patriotism education in English Language Teaching (ELT) courses.

Keywords: College English, Synergistic Effect of Patriotism Education, Student-centered, Application-oriented Colleges.

1. Introduction

In the new era, each course in Chinse Higher Education should play a role of SEPE to cultivate talents for socialism cause. The importance of CE for non-English majors is highly reflected in the recently released The National Guidelines for CE Teaching in 2017. For one thing, it is urged to learn frontier science and technology from foreign countries, to exchange the management experience and advanced thoughts and ideas, to further understand the world excellent culture and civilization. For another, it is also to strengthen Chinese language, spread Chinese culture, promote extensive contacts with the people all over the world, so as to enhance national soft power [1]. As a stage for the fierce collision between Chinese and western ideologies and cultures, CE is supposed to undertake the mission of cultivating talents with both patriotic feelings and international vision with its advantages of a wide audience and a long course duration.

2. Connotation, Theoretical Principles of SEPE in Colleges in China

Generally, patriotism is the deep love and loyalty for one's country which may be reflected in both personal dream and daily chores. When the 21st century has witnessed close exchanges of culture, economy, politics and other areas with an ever-increasing process of globalization, patriotism has become an important source of mental strength in promoting national development and social progress for people all over the world. A vast majority of countries has had a clear and mighty system of cultivating their youths.

2.1 Connotation of SEPE in China

Patriotism education for college students refers to the practice of ideological and political education that aims at cultivating the patriotic feelings, thoughts, and actions of college students in a purposeful, planned and well-organized way according to national policies and characteristics of the emotions, mindset, behaviors of this specific group [2]. In China, as the core of the traditional Chinese virtues, patriotism features the Chinese national spirits such as unity, love, peace, diligence, courage and self-improvement, etc. In colleges, a special course, Theory of Ideology and Politics, is required to take for nearly all major students, while other courses including CE for take responsibilities for SEPE to promote students' team spirit, passion of life, accountability, creativity and cultural tolerance, etc.

2.2 Theoretical Guidelines of SEPE in Colleges in China

Patriotism education should be comprehensively studied from "knowledge, emotion, intention and action" and follow the rule of gradual progress to tailor varied levels of goals and requirements for students at different ages based on their characteristics of physical and mental development. [3] At present, The Program for the Implementation of Patriotism Education in the New Era (PIPENE), officially released by the CPC Central Committee and the State Council in 2019, has become a guide to implement patriotism in the new era. "Practical Thinking Mode" (PTM), the way of thinking contained in Marxist thought", [4] is employed to interpret PIPENE from the perspective of PTM's three main core concepts: the problem consciousness from the practice; the specific consciousness from the "realistic person"; the overall consciousness from the real world of the real person. As is shown in table1, realistic situation, national history, ideals, civilization and methods are five perspectives of PIPENE to help choose focus and content of SEPE.

Table 1. An Interpretation of *PIPENE* in light of PTM

Concepts	Perspectives	Focus	Practical Content
problems in practice	realistic situation	challenges, opportunities	social conditions of a new era and policy-making in China and the world
	history	dreams of a happy life	traditional Chinese culture, reform and opening-up
the realistic person	ideals, beliefs	four confidence, the great socialism cause	in-person experience of patriotism bases, memorials, rituals, festivals, natural /historical tourism
the real world of the real person	civilization orientation	accountability of peace & development	global unity in culture, ecosystem, economics, safety and security, health, etc.
	method/path	harmony of yesterday, today, tomorrow;	force of examples & literary works, mass-media; mindset of openness, tolerance; rationality and peace; legal guarantee

2.3 Implementation Principles of SEPE in Colleges in China

New elements in content and methods of patriotism education in China has been revealed from PIPENE: four confidence, striving spirit, awareness of new media network and mode of Sanquan Education —the entire-staff, the whole-process and the all-around. From perspective of PTM's patriotism, four principles should be followed.

(1) Unity: objectives of virtue growing, ability training and knowledge imparting are highly compatible with the epoch themes; we refuse to ignore Chinese history and emerging online techniques and resources. (2) A Student-centered System: patriotic emotions, thoughts, will, and action of college students are closely connected in a whole process which is "not an additional course or activity"[5]; but inherent requirements of language teaching embodied in the historical and cultural background knowledge such as inspirational stories, traditional festivals, current hot topics, ensuring students' role of active participants, experiencers, organizers. (3) Nationality and Openness: not only is the Chinese red culture highlighted, but the excellent foreign cultures suitable for China's development are selectively absorbed to share outstanding global cultural resources worldwide. (4) School-based Assessment: students change their original way to understand study and exams which they are perfectly accustomed to during Gao Kao preparation and raise awareness of soft skills like morality, critical thinking, innovation. To guarantee a positive outcome of SEPE, CE teachers should devote to employing various strategies to stimulate the enthusiasm and initiatives of students, such as material and spiritual awards, portfolio as part of formative assessment.

3. Current Situation of SEPE in Application-oriented Colleges in China

Since its emergence in the 1990s in China, application-oriented college education has boosted three distinct characteristics—locality, industrialization and internationalization, and formed a complete organic whole of five application-oriented parts—participation of local affairs, knowledge

transfer, teaching and learning, scientific research and internationalization.[6] Their goal is to cultivate talents with moral quality, practical abilities, social service awareness, a comprehensive humanistic and international perspective for development of the regional economic and social development of China. [7]

In recent years, application-oriented college teachers have actively conducted enormous research on patriotism education in response to the policy of fostering virtue through education. However, only 23 journal papers on PIPENE is found: the study on patriotism practice activities is the most, up to 9, 6 on excellent case studies, 3 on cultural awareness, 2 on path studies, and 3 respectively on teaching methods, strategy and motivation. It is worth mentioning that the research from the perspective of teachers and students has not been found yet, leaving room for further exploration.

4. Exploitation on SEPE of CE in TJC, USTB in China

4.1 Team-building of SEPE and Management of WeChat Patriotism Column

As teaching designers, CE teachers should have the awareness of reading classics about patriotism in Xi jinping: The Governance of China, forming a team to further discuss and dig out more ideological elements in textbooks and hot topics in mainstream media at home and abroad. At practical level, the goal of "bilingualism with political and humanistic function" is to be achieved while sorting out teaching materials with Chinese-specific expressions. After designing a teaching plan in advance, team member can seek feedback from their students or collect suggestions from other colleagues. Besides self-training, the team have taken responsibility for explaining patriotism education to other CE teachers to build up the momentum.

The team have learned to employ WeChat to exert patriotic influence. Tianyuan English, a platform of English learning, has a special column on patriotism for teacher-student communication. In there, teachers share optimistic English quotes, patriotic stories, videos, or write original inspirational articles on Chinese and western cultures. Meanwhile, students have their own stories, self-made videos shared to express personal experience of college life and individual growth in competence or morality.

4.2 Practice of SEPE for Teaching Material Enrichment

Designers of CE textbooks are meticulous about both the national policy and official documents related to English teaching. Although most texts are based on the background of western cultures, the theme of each unit is basically consistent with the traditional Chinese culture and the core socialist values. What teachers need to do is sharpen their senses to find out those implicit elements of patriotism education. Thus, students' awareness of critical thinking and appreciation of culture diversity can be raised to develop the mindset of openness, tolerance; rationality and peace. As is shown in Table 2, additional patriotism materials are designed from perspective, focus, content, method or path to compensate main text theme in the chain activities of English learning: listening, reading, speaking and writing. From a real person and realistic challenges in their growth to civilization-oriented matters of the real world they live in, college students experience a lot more than language training with practical content and paths on culture, values, way of thinking.

Table 2. A teaching design of SEPE for the freshmen

Perspective	Focus	Practical Content	Method & Path
college life	Chinese dream	The Stars from Peking University	my dream
language learning	language & culture	Don't insist on English (TED)	mindset of openness
parents-children	filial piety vs equality	stories on traditional virtues	harmonious family
growing up	realistic changes	I Love my Family vs Growing Pains	self-tolerance
knowing yourself	the realistic person	A song: Knowing Yourself	self-confidence
civility/manners	civilization-orientation	Traditional Chinese Etiquette	cultural confidence
interrelationship	peace accountability	the socialist core values in English	harmonious society
friendship	proverbs of friendship	International Day of Friendship	collaboration
sports	sportsmanship	2008 Olympic Games, China: Time of Xi	national pride
health	meaning of health	Laugh.mp3	individual harmony
love	truth of love- to give	Great Love Without Borders-Wenchuan	spirit of utter devotion
happiness	Happiness of Chinese	The UN World Happiness Report	pursuit of happiness

4.3 Practice of SEPE for Student-centered Activities in TJC, USTB

In 2018, the Ministry of Education in China officially issued The National Standard for Undergraduate Teaching Quality in General Institutes of Higher Education, which attaches great importance to three major elements of education: student-centered approach, output orientation and sustainable development.

Many college students are more physically mature than mentally who are easy to act on impulse, so they should be guided to become “rationally patriotic, inspirational, truth-seeking, practicing” in the new era. Based on characteristics of college youths and five perspectives of PIPENE, a series of student-centered activities for freshmen are organized in a gradual process to arouse their patriotic emotions and will, rational patriotism, through sense of ceremony to patriotic actions and service of consciousness. Table 3 presents extracurricular activities in TJC, USTB to implement patriotism education. Those who have participated in three of the extracurricular patriotic activities will obtain five grades in course formative assessment.

Table 3. A design of SEPE activities for the freshmen

Perspectives	Focus	Practical Content
a real person	emotions	Chinese-specific terms into class, technological exhibits, historical museums, red movies
national history	strong patriotic will	Comrade Lei Feng, Martyrs' Day, National Constitution Day, repeat the steps of 25,000 Li on the Long March, patriotism bases, etc.
ideals/beliefs	sense of ceremony	Tree-planting Day, Tomb-sweeping Day, Mother's Day, Father's Day, Dragon-boat Festival, Double-ninth Day, Mid-autumn Day, Thanks-giving Day, Spring Festival,
civilization orientation	patriotic actions	school-based activities: volunteers of beautiful campus, tour guide competition, translation competition of traditional Chinese culture, singing red songs in English, etc.
method/path	service consciousness	volunteers of tutoring primary school students, picking up litter, publicizing energy conservation knowledge, maintenance of household appliances in local nursing home,

5. The Path of SEPE in CE in TJC, USTB in China

In the new era of multicultural shock, patriotism education should highlight and be integrated into the contemporary theme like peace and development. Many developed countries have put forward a new concept of “whole person development” in education to meet the requirements of talents and formed an organic combination of the three-classroom path: classroom teaching, activities connected with theoretical learning on campus and social practice.[8] CE teachers of TJC, USTB follow the suit and create a trinity path of classroom-campus-community(3Cs) to implement patriotism cultivation.

Firstly, teaching objectives, staff quality and teaching design of SEPE play a crucial role as far as teacher’s initiative is concerned. More freedom and financial support can help to efficiently implement SEPE. Secondly, the classroom atmosphere, student assessment and campus culture help to increase students’ patriotic emotions and enthusiasm through fierce discussion of topics related to Chinese virtues such as benevolence, righteousness, courtesy, wisdom and trust. Thirdly, social practice is the best path to turn strong patriotic will into real actions. Red tourism and community service outweigh theoretical knowledge, but patriotic actions in the new peaceful era means many small deeds in everyday life, including talking and thinking positively, working out regularly, using water wisely, no whispering, sleeping or playing games in class, to name a few. Lastly, to better realize the supplementary role of traditional path, new media, like Douyin, is supposed to exert a fascination on the majority of teachers and students to study CCTV news, to summit video or audio assignments.

6. Conclusion

CE is a proper project of “language training + patriotism cultivating”, focusing on talents who harbor patriotic emotions and strong will to serve the society and resist the temptation of unhealthy ideas and actions rationally. The path of 3Cs help CE teachers update teaching content, methods, student evaluation to guide students to achieve language goals, live a happy life full of love and faith in socialism through class infusion, campus and community activities. With “four confidence” and awareness of striving to realize both their personal dream and Chinese dream of the great rejuvenation, Chinese talents in the new era should continuously make a contribution to their local community, Chinese nation and mankind through productive labor, social practice, innovation and creation.

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Study on the Cultivation of Students' Creative Ability in Higher Vocational Computer Teaching

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Abstract. In computer teaching in higher vocational colleges, paying attention to the cultivation of students' innovative ability is of great significance for achieving teaching goals, improving teaching quality, enhancing students' ability, and promoting students' employment. At present, in computer teaching in higher vocational colleges, there are still a series of problems such as low awareness, insufficient attention, and lack of practice in the cultivation of students' innovative ability. The existence of these problems affects and restricts the effective development of computer teaching activities, affects and restricts the improvement of students' innovative ability, and needs to be seriously addressed.

Keywords: Higher Vocational Education; Computer Teaching; Cultivation of Students' Creative Ability.

1. Introduction

Computer professionals play an important role in our country's economic construction and development, carry important responsibilities, and become an indispensable and important force. How to train computer professionals who are needed by the society and improve students' innovative ability has become a particularly important new topic in the practice of computer teaching in higher vocational education.

2. The Cultivation of Students' Innovative Ability is a Golden Key to Achieve the Goal of Talent Training

Requires higher vocational colleges to focus on cultivating students 'innovation ability and stimulate and activate students' innovation enthusiasm. Only in this way can we cultivate professional and technical personnel with real talents for the society, and continuously deliver fresh blood and inject new vitality for economic construction and social development. This shows that the cultivation of students' innovative ability is not only of great significance, but also has a profound impact.

2.1 The Cultivation of Innovation Ability is an Urgent Need for our Country to Move from a Manufacturing Country to a Manufacturing Country

Innovation is the driving force for economic development and the country's competitive capital. Without innovation, there will be no high-quality development. Without innovation, there will be no vitality for economic development. Without innovation, there will be no impetus for economic development. At present, the development of science and technology is changing with each passing day, and innovation has become the focus of competition between countries and the biggest bargaining chip.

Higher vocational education bears the important task of professional talent training, and it has become the only option to deliver innovative talents to the society.

2.2 The Cultivation of Innovative Ability is the Need to Effectively Stimulate Students' Enthusiasm and Interest in Learning

The process of cultivating students' creative ability is actually a process of promoting students to study hard and realize the growth of talents. In this process, the two are a process of promoting each other and interacting with each other. On the one hand, through the cultivation of students' innovative consciousness and the promotion of innovative consciousness, innovative learning and

innovative practice, new results, new progress and new gains are continuously obtained, opening up a new world and a new horizon for students; on the other hand, this This new concept and new practice greatly stimulated the students' enthusiasm for learning, inspired the spirit of innovation and enterprising, and became the driving force and source for them to continue moving forward.

2.3 Cultivation of Innovation Ability is the Need to Improve Students' Entrepreneur Ship and Employability

The cultivation of students' innovative ability has a profound impact on their future entrepreneurship and employment. This influence is reflected in whether it adapts to the integration with society; whether it is competent in the work of the post; whether it is successful or not in the practice of innovation.

The momentum of economic development in our country is rapid. Especially after becoming the world's second largest economy, the requirements for innovation and development are even more urgent. There are many urgent reasons, such as the blockade from Western technology, the need for self-development, the desire for a better life, and the need for future entrepreneurship. Therefore, the cultivation of students' innovative ability is more important and urgent now.

3. Fully Understand the Disadvantages in the Cultivation of Students' Innovative Ability, and Actively Remove Obstacles and Fetters on the Way Forward

Undoubtedly, the cultivation of students' innovative ability is very important, and it has become a common consensus in computer teaching in vocational colleges. However, we should also clearly realize that in the process of cultivating students 'innovative ability, there are still many problems and disadvantages that affect and restrict the cultivation of students' innovative ability. We must arouse enough attention and continue to improve and perfect them.

3.1 Not Strong in Innovation

Low awareness and low awareness of the cultivation of students' innovation ability. In teaching practice, the task of completing teaching tasks is given priority, and the cultivation of students' innovative ability is given priority. Only teaching has serious teaching ideas.

3.2 Insufficient Innovation Ability

In the computer teaching activities of higher vocational colleges, there is also the problem of insufficient innovation ability of teachers. As a result, the phenomenon of lack of guidance and leading stalls in the cultivation of students 'innovation ability has become the biggest obstacle for students' innovation ability cultivation.

3.3 The Teaching Method is Simple

Science is developing, technology is progressing, and computer teaching must also keep pace with the times. However, in the practice teaching process, the traditional teaching method and the dependence on the traditional teaching method are serious, and the innovative teaching path is lacking. This rigid teaching aspect and mode has also become a training shortcoming that affects students' creative ability.

3.4 Imbalance in Teaching Arrangements

The allocation of time between theoretical teaching and practical teaching is unscientific. The contradiction that attaches importance to theoretical teaching and neglects practical teaching is still prominent. This is an important factor affecting students' ability training.

4. Try to Find a New Way to Cultivate Students' Ability and Realize a New Breakthrough in Computer Teaching

With the rapid development of China's economic construction, the demand for talents with innovation ability is more and more urgent. The new characteristics and changes of this kind of talent demand put forward higher requirements for the cultivation of computer talents in higher vocational colleges. It is urgent to cultivate innovative talents and explore new ways of talent cultivation.

4.1 We Should Improve our Ideological Understanding and Try to Change our Ideas

The cultivation of students' innovation ability is inseparable from the change of teachers' concept. Only when we have a deep understanding of the significance and role of the cultivation of students' innovative ability, can we consciously put the cultivation of students' innovative ability into practice in teaching practice and strive to achieve the goal of talent cultivation. To change the concept, it is important to step out of the shackles of traditional teaching concept and take a new way of innovative teaching according to the requirements of the new era.

4.2 Strengthen the Construction of Teachers' Team and Actively Respond to the Challenges

The lack of teachers' ability reflects the construction of teachers' team. The key to the cultivation of students' innovative ability is the construction of teachers. Because teachers shoulder the main responsibility of teaching and the construction of teachers is not up to the standard, how can students' innovation ability be improved? In order to build a strong team of teachers, we should not only strengthen the training of the team of teachers, but also encourage teachers to take the road of "double teacher type" development, and build the team of teachers into an excellent team that keeps pace with the times through multiple channels and initiatives.

4.3 Change the Teaching Method and Innovate the Teaching Path

In the past, some traditional teaching methods have been unable to meet the needs of the cultivation of students' innovative ability. In accordance with the requirements of the development of Higher Vocational Education in the new era, innovative teaching paths have become an inevitable trend. Only by actively exploring and constantly summarizing new experiences and practices can new breakthroughs be achieved.

4.4 Arrange the Teaching Plan Scientifically and Increase the Practical Teaching Time Reasonably

In addition to improving the consciousness and interest of innovation, the key to the cultivation of students' innovation ability lies in the improvement of innovation ability. The improvement of this ability requires not only theoretical mastery, but also practical excellence, which requires scientific and reasonable formulation of theoretical teaching and practical teaching plans, and reasonable allocation of teaching time. Only when they are organically combined, can they get twice the result with half the effort.

5. Summary

The cultivation of students' innovation ability in higher vocational computer teaching is not only related to the improvement of students' quality, but also related to the in-depth development of teaching reform. Therefore, we should constantly solve new problems, explore new paths, launch new initiatives and achieve new development.

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Construction of the Translator-oriented Eco-translation Teaching Mode

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Abstract. Eco-translatology is the translation studies from the perspective of ecology, which emphasizes the translators' central position in the process of translation and redefines translation activity by classifying it into a more extensive perspective of translational Eco-environment. The article tries to combine the concept of "Translator-orientation" with teaching principle, objective, contents, classroom teaching, teaching evaluation and teaching effects to construct a Translator-oriented Eco-translation teaching mode, aiming to change the situation of translation teaching for English majors and cultivate qualified English professionals and translators.

Keywords: Translator-oriented; Eco-translatology; Eco-environment; Teaching Mode.

1. Introduction

At the beginning of the 21st century, Prof. Hu Gengshen in Tsinghua University proposed the theory of Eco-translatology which focuses on the whole ecosystem of translation, concerns about translational ecology, the "survival" and central role of translators and emphasizes the holistic view of translation. It is a discourse system of translation theory. Eco-translatology is a brand-new research paradigm of translation and "translator as the center" is in its core, which focuses on the central role translators play in the process of translation.

Based on the theory of Eco-translatology, the teaching of translation is viewed as a huge and complicated ecosystem in that the steps in teaching are interrelated organically to each other and become the components of the so-called ecosystem of translation teaching. And it is the diversified teaching methods and the relations among components that link the teaching steps together. In the ecosystem, students are the main sentients and the whole translation teaching process is a process of multi-dimensional adaptation and selection. The ecological system of translation teaching consists of hardware environment and software environment. The former refers to foreign language teaching resources, including syllabus, training program, teaching materials, teaching equipment, corpus and libraries. The latter refers to the humanistic environment in foreign language teaching which is mainly composed of translation teaching mode, teaching method and characteristics of interpersonal relationship of both teachers and students.

2. The Drawbacks of Traditional Translation Teaching

In traditional translation teaching, teachers choose teaching material and set the papers according to their own preferences. In general, the question types in the papers are sentence translation and paragraph translation, which is unitary. And the contents are mainly about literary translation, and mostly are closed-book examination. There are too may subjectively factors in marking the paper and the single evaluation mode cannot measure the effects of teaching and the level of students accurately. The teaching concepts and methods are out-of-date.

The teachers dismiss the process, standards and principles of translation, and pay no attention to the relationship among the translator, the original work and the translation. They also show no interests in the factors involved in the process of translation and the conditions to be adapted to. They ignore the further study of mother tongue and the accumulation of cultural knowledge and attach little importance to the cultural differences between English and Chinese, which lead to the commonly used European Chinese and Chinglish. The students educated in the framework of traditional translation teaching find that they can not adopt appropriate translation strategies or

methods to translate different styles of texts in different fields or situations according to the requirements of their customers, which shows that translators can not adapt well to the ecological environment they are in. The employers respond that students have a narrow range of knowledge and lack knowledge of multi-discipline, mother tongue, literature, history and philosophy, etc., which reflects that translators lack the basic skill to adapt to translational Eco-environment.

3. The Construction of Eco-translation Teaching Mode

In the translation teaching of English majors, it is very common that teachers are the central part of teaching activities while the students, as translators, are not in the central position. The teaching concepts of Eco-orientation requires the teacher-centered mode change to student-centered mode, and to bring students' subjective initiative into play and to train their creative thinking ability. The translation teaching mode under the theory of eco-translatology will adjust the key elements in the ecosystem of teaching such as teaching contents, teaching methods and teaching evaluation, etc. and exert students' subjectivity to make translation teaching a system of dynamic balance, macrocosm relevance and diversified unity.

3.1 Translator-oriented Teaching Principles, Objectives and Contents

The teaching principles based on Eco-translatology mainly focus on the central role of translators. It requires translators to be treated as leading, perceptual individuals and to be allowed to exercise their creativity, which is the cornerstone of smooth translation. In class, the students are the translators in translation process. And their creativity should be fully activated so as to make them involved in the teaching process, thus co-creative a favorable translational Eco-environment.

The teaching objectives based on Eco-translatology are mainly to explain the interrelationship and interaction among the subsystems of translation. For example, the process of translation necessarily checks and promotes the basic presetting processes such as listening, speaking, reading and writing. The ultimate goal of translation teaching is to promote translators' comprehensive qualities which mainly include bilingual knowledge, curriculum knowledge, professional knowledge, translation strategy, cultural knowledge, translation criticism, social morality and psychological accomplishment. And all these are all integrated in different modules such as the basic module of language and culture, the translation theories and practices module, the extension module and the translation technology module. In the teaching process, teacher should use modern teaching and information technology to keep pace with the times. They also should ingrate translation teaching resources and gradually implement normalization of information-based teaching, which will provide guarantee for improving students' compressive abilities in the process of learning. And the key points of teaching contents should enable all kinds of teaching methods and contents collaborate and interact with each other and can be specified to train students in translation.

3.2 Translator-oriented Classroom Teaching

The core of Eco-translation teaching is the classroom teaching. And in traditional translation teaching, the central position of students as translators is not prominent, which means in the teaching process, teachers work out teaching plan and designate teaching martials. In class, teachers' explaining occupies most of the time. Teachers give out translating materials and then correct students' translation mistakes according to the standard translation, which takes no account of students' requirements and acceptability. The translator-oriented classroom teaching put the translators, i.e. the students in the central part and enable them involved and closely related to the teaching activities.

3.2.1 Students' Participation in Planning Teaching Plan

Teaching plan plays an importance role in teaching because it directly decides the teaching contents, leaning process, learning methods and assessment approach, etc. of a course. In the past, teachers work out the plans before the new term without asking students' opinions and students

follow teachers' plans passively. Now, teachers ask students' opinion after they have drafted teaching plan, and adjust properly the teaching plans to students' interests and requirements till they reach an agreement and then carry out the plan in classroom teaching.

3.2.2 Students' Participation in Choosing Translation Materials

Compared with teachers, students are not in their dominance of choosing translation materials. But as the subject to interpret teaching material and construct meaning, students have to adapt themselves to the teaching material and have the function to amend teaching material or to make teacher adjust the choice of chapters or the combination of teaching contents from different sources to adapt to students' learning eco-environment. From above analysis, it can be seen the use of translation teaching material is a cyclic process of "selection-adaptation-selection" which is exactly the opinion of Eco-translatology which guide the teachers and students keep ecological harmony and integrated balance in selecting and using of teaching materaials.

Moreover, only when teaching materials are closely related to students' life and personal experiences can they find echo with students. Students participating in selecting translation materials will give them considerable autonomy and arouse their interest in learning. But without any constraints, it will cause many problems such as poor systematicness, weak purpose, unbalanced difficulties and incomplete translation strategies, etc. Therefore, to build a comprehensive and systematic translation teaching materials requires to keep students' selection within limits with teachers' check.

3.2.3 Students' Participation in Presenting

Students are the most active elements in the eco-system of translation teaching. They accomplish the process of translation in exploration and learning. In the eco-system of translation teaching, teachers become the designer, instructor and supervisor of translation tasks. Student as translators are at the center and play a dominant part. Teachers should try their best to break traditional word-based and sentence-based teaching methods in translation teaching, shift the focus of translation teaching and keep an eye on various translation objects. Translator-oriented teaching method enables students adapt to the texts selectively and select texts adaptively hence to achieve the goal of transforming among the three dimensions—language, culture and communication. Teachers can introduce task-based or interactive teaching methods such as scenario simulation, task construction and program cooperation, etc. to incorporate simulated translation behavior such as all kinds of speeches, seminars, press conferences, the UN General Assembly meeting, foreign tour guidance, etc. into teaching design to create opportunities of translation practices for students. In the process of practice, students will adapt selectively to all kinds of situations and finish the whole process of learning at the same time. Students also should be encouraged to participate in group discussions in or after class. Teachers should assign translation tasks after class especially in form of team work to let students enjoy the fun of translation in group work.

3.3 Translator-oriented Teaching Evaluation

Perfecting the mechanism of teaching evaluation is an important part of translation teaching mode based on Eco-translatology. From the perspective of eco-tanslatolotgy, the result-oriented teaching method should be turned to process oriented. The summative assessment should be turned to process assessment and translator evaluation. In the end, the evaluation mechanism of "punishment after translation" will be established. The evaluation system based on eco-translatology put more emphasis on teaching process and translator-oriented assessment and evaluation, in which the quality of translation is judged by both teachers and students on the basis of discussion. There are discussions between teacher and students, discussions among students and self-evaluation, which makes translators' subjectivity respected and students' sense of responsibilities enhanced.

3.4 Translator-oriented Teaching Effects

Translator-oriented teaching effects based on eco-translatology can be assessed with the principle of "survival the fittest". Students take part in extracurricular translation practices, all kinds of tests of translation professional abilities such as ETTBL, various translation skill competitions and accomplish translation practices jointly held off campus. The students' practical results can reflect the effect of translation teaching. In the process of translation teaching, only through synthesis studying and analyses of students' practical translation effects, can the essence of translation be better understood in the following teaching, teaching objectives be established in depth, teaching process be adjusted adaptively to achieve the expected effects in translation teaching.

4. Conclusion

The Translator-oriented Eco-translation teaching mode requires to treat translators as the central role in the process of translation fundamentally, requires the teaching contents meet the needs of translators, requires the teaching methods centered on translators and requires to establish translator-centered evolution system in order to improve students cultural awareness and ability to transform languages and prepare them for their future work in society.

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Study on the Implementation of Club Teaching Mode in Public Physical Education in Applied Colleges and Universities

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Abstract. In the face of the further development of economic society, the reform mode of College Physical Education in China is also gradually changing. The overall promotion of the sports club mode in Colleges and universities can effectively promote the optimization of physical education in Colleges and universities, and adapt to the environment of social change. This paper briefly analyzes the meaning and characteristics of club mode in college physical education teaching, then analyzes the main role of club mode in physical education teaching, and puts forward specific measures to promote the club mode in college physical education teaching, in order to promote the in-depth development of College Physical Education Teaching in China.

Keywords: College Sports; Sports Club Teaching; Sports Teaching Mode.

1. Introduction

In recent years, the concept of new sports teaching has been gradually promoted, and various types of clubs have emerged. College sports clubs have become the main place of sports activities. In the form of sports club, students can not only make full use of their spare time to improve their health, but also effectively improve the autonomy of participating in physical exercise. Under the background of the development of the new era, the full development of college sports clubs can not only effectively improve the current situation of college sports teaching in China, but also stimulate the enthusiasm of students, guide students to participate in sports activities, and promote their physical and mental health development.

2. The Basic Meaning of the Mode of Physical Education Club in Colleges and Universities

The establishment of sports clubs in Colleges and universities, in fact, is to take the students' conscious practice as the basis, the sports venues within the school as the carrier, and launch around specific exercise items. It mainly adopts the form of club, which integrates physical education, extracurricular physical activities, exercise items, team competitions, etc., and then constructs a new college physical education mode. This mode belongs to one of the physical education teaching modes in Colleges and universities. It aims to enhance the physical quality of students, enhance the physical culture quality of students, and then cultivate the feelings between teachers and students, students and students, and finally help students form the correct exercise habits and lifestyle. Generally speaking, college sports clubs can be divided into three categories: in class clubs, extracurricular clubs and in class comprehensive clubs. In class club is to use modern means to carry out physical education knowledge teaching for students, and take the construction of new college physical education teaching method as the main goal. Extracurricular club belongs to the extension and development of classroom teaching, which aims to expand the scope of college physical education teaching, cultivate students' good exercise habits, and highlight students' personality characteristics. The comprehensive club in and out of class is an integrated teaching mode which adheres to the idea of lifelong physical education and regards the cultivation of high-quality and high physical talents as the basic education concept.

3. The Main Characteristics of the Mode of Physical Education Club in Colleges and Universities

3.1 Rich Content

College sports clubs include a variety of activities, such as basketball, football, tennis, volleyball, table tennis, badminton, swimming and so on. In addition, it also includes a series of sports that are difficult to implement in the school, such as mountain climbing, cross-country, rock climbing, shooting, field survival, large-scale sports and so on. These events can enrich the contents of College Students' sports activities to a great extent, and arouse their enthusiasm for sports. Because compared with the traditional sports teaching methods, the college sports club formed by these items is actually the compensation and extension of classroom sports teaching. When students participate in these activities, they can get the pleasure that is hard to feel in the classroom physical education. Therefore, the rich content of sports teaching club can effectively promote the all-round development of students' physical and psychological quality.

3.2 Process has Initiative Characteristics

For students, interest is the main driving force for them to study actively, explore ideas and explore bravely. In college sports clubs, students can choose suitable sports according to their interests and hobbies. If students have strong interest in a specific activity, they can participate in the activity independently, improve their physical fitness and technology in the process of practice, and then get the satisfaction, pleasure and achievement of exercise. With these feelings, it is easier for students to join in the ranks of physical training and cultivate good habit of independent exercise. In order to help students set up the idea of lifelong physical exercise, the school must go through this process, establish a college sports club, and let the idea of strengthening physical exercise go deep into students' hearts. In many colleges and universities, the number of students in the class is large, but the teacher resources are obviously insufficient, and the venue and equipment are relatively lack. In this case, it is difficult to classify or group teaching according to students' interests and hobbies. The emergence of sports clubs can effectively make up for this deficiency.

3.3 Diversity of Purpose

After selecting their favorite activities, students can keep on training every day, and then step by step, increase the amount of exercise, and finally reach a certain technical level. For example, first exercise for 1 hour every day, then slowly increase to 1.5 hours, 2 hours, and feel the gradual improvement of your physical quality. When students through their own efforts, get the affirmation of others and self satisfaction, they will set higher goals for themselves, and once again into sports. In this way, it can produce a virtuous cycle, which makes students' enthusiasm for exercise high. Therefore, college sports clubs can help students to set up a variety of sports goals, make students constantly improve themselves under the role of various driving forces, and cultivate their love for sports at the same time of gradual development.

4. The Specific Role of Club Mode in College Physical Education

4.1 Help Students to Establish a Sense of Lifelong Physical Exercise

The implementation of the teaching mode of sports club in Colleges and universities is the improvement and supplement of the physical education in Colleges and universities, and it has a very good promoting role for the physical education in Colleges and universities, and it can set up the idea of lifelong exercise for students. Setting up sports clubs in Colleges and universities can break through the shackles of the limited time of physical education courses in the past, and will not be hindered by the teaching plan and related syllabus, and will further extend physical education to the whole process of College Students' activities. In addition, the club mode also has the characteristics of varied forms and rich contents, which can help students cultivate their interests

and hobbies in sports while establishing their awareness of exercise, so that students can get all-round development. In this way, college physical education and society are effectively linked together, so that students benefit for life.

4.2 It is Beneficial to Arouse Students' Interest in Sports

The establishment of sports clubs in Colleges and universities can break through the constraints of the original teaching mode to a large extent, and offer a variety of club courses based on the needs of students. Students can choose their favorite sports to exercise according to their own preferences, which breaks through the boundaries of departments, classes and even grades, so that students can organize different skill classes together for learning. In this way, it can fully meet the needs of students with different foundations, different levels and different personalities, so as to help students learn sports skills and exercise in a healthy and pleasant atmosphere. In addition, because students have common or similar interests, students can also communicate with each other in the process of participating in sports club activities, changing the previous single and boring learning style, so that students' sports interests can be further improved.

Table 1. Number of Students Participating in Sports Club Activities

Attitude	N	Less than 10 Times	11-15	16-20	More than 21 Times
Proportion of people	2100	32.1%	45.7%	15.6%	6.6%

Table 2. Students' Attitudes Towards Attendance Regulations

Attitude	N	Great Impact	Influential	No Impact
Proportion of People	2100	42.5%	36.4%	21.1%

Sports venues, equipment and sports events are the objective conditions for students to carry out good physical education. At present, sports venues and equipment basically meet the needs of students. However, due to the weather in the north, the number of students who like swimming is relatively small, and half of the students want to increase swimming clubs. In addition, a considerable number of students think that the badminton court and table tennis court are insufficient , gym small equipment shortage, indoor teaching field shortage, etc. The ability of self-consciousness and self-discipline of college students is limited. It is necessary to establish strict management system while giving full play to the subjectivity of students. From questionnaire 1 and table 2, it can be seen that if the number of times is not specified in each semester, the majority of students can not guarantee to participate in sports once a week. Therefore, from the school's specified attendance week in this semester, 2 / 3 of the students are affected.

4.3 Conducive to the Construction of Campus Culture

Sports club is a new popular campus sports cultural activity in recent years, which is very suitable for the current situation of domestic colleges and universities. To carry out sports club activities in the campus can set off a wave of physical exercise in the school, and make the gymnasium, sports facilities, sports venues and other efficient use. The teaching mode of sports club has a strong cohesive force, which can connect the participants with similar interests and preferences, so as to greatly improve the enthusiasm of students for physical exercise. Under the influence of such atmosphere, college sports culture can be sublimated to a new level, and the connotation of campus culture will be further enriched and improved, driving the vigorous development of the whole college culture.

5. The Implementation Measures of Club Mode in College Physical Education

5.1 Build a Club Model with Students as the Main Body

In order to meet the individual needs of students, colleges and universities should focus on students, create a student-oriented environment, and provide students with a variety of interactive activities. The teaching mode of student-centered sports club should have a very flexible organizational form, so that students can choose learning time, teachers, course content, etc. according to their own wishes, and show their interests and hobbies. For the teaching organization, the model should be able to show the characteristics of diversity, diversity and so on, in order to meet the needs of the majority of students' sports learning to the greatest extent. From the perspective of the relationship between teachers and students, this model should focus on the mutual cooperation and two-way development between teachers and students, which is conducive to the construction of a harmonious and equal relationship between teachers and students. Generally speaking, the construction of student-centered club mode must embody the characteristics of sociality, times, pertinence and effectiveness, and ensure the scientific rationalization of the implementation process and evaluation methods. Such a way is quite operable and can show the characteristics of humanized physical education.

5.2 Promote the Integrated Club Mode in and out of Class

The integration club mode in and out of class refers to taking the stadium as the carrier, insisting on the premise of "health first" and "lifelong physical education", and promoting the ideal development of students in the three levels of psychology, physiology and society. The school should let the students choose their own clubs, and integrate various teaching methods and skills, combine the content of physical education in class with extracurricular physical activities, and form an integrated club mode. This model can not only complete the classroom teaching task properly, but also guide the students to do extracurricular physical exercises. For example, teachers explain sports culture knowledge to students in class, and then make full use of the network outside class to guide students to study independently, participate in physical exercises, or arrange sports competitions between classes. In this way, it can integrate the teaching in and out of class, so as to improve the teaching effect to the maximum extent. This kind of club teaching mode has obvious advantages, because many domestic clubs in and out of class have gained rich experience, which provides basic support for the wide spread of this mode. Therefore, the club construction mode of integration in and out of class can become the main development direction of colleges and universities for a long period of time.

5.3 Design Non Competitive Sports

In the sports clubs set up in Colleges and universities, the primary teaching goal is to strengthen the physique of students, not to train sports talents for the country. Therefore, the design of the project should be different from the competition mode in sports colleges and universities. We can try to avoid some boring technical training, such as walking, middle and long distance running, and try to select some interesting and attractive projects, so as to arouse students' interest and ensure that students can actively participate in them. For example, most of the female students like to take part in some non competitive sports, such as badminton, table tennis, swimming and so on. Most boys like to play tennis, basketball, football and so on. Colleges and universities can combine students' interests and hobbies to set up targeted sports clubs, so that students can achieve the purpose of physical fitness in the process of playing. In addition, such projects usually have strong popularity advantages. Even if students go out of campus, they can participate in similar exercises. Therefore, these non competitive sports can provide great help for students' future study, work and life.

6. Conclusion

To promote sports clubs in Colleges and universities is conducive to helping students to establish lifelong sports ideas, establish exercise goals for students, develop students' sports interests, and establish a unique campus culture. Therefore, the domestic colleges and universities need to attach importance to the construction of club mode in physical education teaching, and fully link the physical education in class with extracurricular physical activities, so as to achieve the prosperity and development of physical education in Colleges and universities while cultivating students' good exercise habits.

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The Development of Kindergarten Curriculum from the Perspective of Life Education

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Abstract. Curriculum is the core of kindergarten education. It is an intermediary linking life and kindergarten activities. Appropriate kindergarten curriculum plays a key role in the healthy development of kindergartens. The kindergarten curriculum should follow the child's actual life, and based on the child's existing experience, extract the curriculum content from the child's life. According to the survey, it is a common problem in kindergartens that kindergarten curriculum is separated from children 's lives. In view of the lack of living aspects of cognitive attitudes, curriculum resources, etc., it is proposed to increase the awareness and attention of preschool education workers to life-oriented courses. The investment of life-like curriculum resources and suggestions for the construction of a life education curriculum system to realize the life of the kindergarten curriculum and ensure that children grow up healthily and happily.

Keywords: Life Education, Kindergarten Curriculum, Curriculum Life.

1. Introduction

At the end of the nineteenth century, John Dewey, an American pragmatist educator, proposed that education is life, education is growth, and education is experience reorganization or transformation. It emphasizes that students trained in schools must be consistent with the reality of life and have practical values. needs. Mr. Tao Xingzhi's theory of life education also shows that life and education are integrated and inseparable. Life is education, education is life, and life is development and change. The content, methods and purpose of education should reflect in light of the changes in life, the implementation of life education is to cultivate the trend of the times. Kindergarten education is the most basic stage of school education. Students trained in kindergartens should be in line with the reality of life. They cannot be separated from life and society. The kindergarten curriculum is living, which is beneficial to kindergarten students, and it is more conducive to the healthy growth of children.

2. The Relationship between Life and Kindergarten Curriculum

Toddlers are individuals in the living world. Their lives are ecological, systematic, and developmental. They are in line with the processes of children's life activities. Life development is also an ecosystem process. Therefore, the life process should be incorporated into the curriculum, and the children should be in the development of life, we must continue to make new developments. Life-based kindergarten curriculum does not simply paste and copy the life of young children, but means that the curriculum must have the characteristics of life. The curriculum must come from life, at the same time be higher than life, and finally return to life [1].

3. Investigation on the Status of Living Kindergarten Curriculum

The "Kindergarten Education Guidance Outline (Trial)" states that kindergartens should provide young children with a healthy and abundant living and activity environment to meet the needs of children's multifaceted development, so that they can benefit from physical and mental development in their cheerful childhood. experience. According to the outline's requirements for kindergartens and the needs of implementing a kindergarten curriculum for daily life, the surrounding kindergartens were surveyed and visited in terms of cognitive attitudes, curriculum resources, curriculum systems, etc., and found the following status quo.

3.1 Cognitive Attitude of the Life-based Kindergarten Curriculum

In interviews with surrounding preschool teachers, it was found that preschool teachers did not understand the connotation of life-based kindergarten curriculum, and had only a vague concept. At the same time, they did not pay attention to the important role of life education theory in kindergarten education. It is difficult to implement in kindergartens.

3.1.1 Misunderstanding of the Connotation of Life in Kindergarten Curriculum

Most preschool teachers have misunderstood the true meaning of life-based kindergarten curriculum because they have not studied the theory of life education systematically. What they think of as a kindergarten curriculum is to add sporadic elements of life to the kindergarten curriculum, or that the curriculum is just a simple restoration of life. The real life-based kindergarten curriculum refers to incorporating the theory of life education into the kindergarten curriculum, selectively extracting educational content from the life of young children, and implementing it in a living environment to promote young children. A course for healthy growth that follows the laws of life.

3.1.2 Pay Less Attention to Curriculum Life

Most preschool teachers understand the basic connotation of life education theory, but have not paid much attention to it, and are unwilling to implement a life-based kindergarten curriculum. Prior to their early childhood education, they expected to use Mr. Tao Xingzhi's life education theory to promote the good development of the kindergarten curriculum. However, after entering kindergarten, due to insufficient time, insufficient preparation, difficult implementation, and high work pressure, he did not integrate Mr. Tao Xingzhi's life education theory into education and teaching activities.

3.2 Status of Investment in Kindergarten Living Curriculum Resources

Through a survey of surrounding kindergartens, it was found that the environment, materials, curriculum content, and other aspects of the kindergarten lacked investment in living resources.

3.2.1 Fewer Living Elements in Environmental Creation

The "Guide to Learning and Development for Children 3-6" states that young children's learning is based on direct experience and is carried out in games and daily life. We should cherish the unique value of games and life, create a rich educational environment for children, and reasonably arrange children's day-to-day life, to maximize support and meet the needs of children to gain experience through direct perception, practical operation and personal experience. One point emphasized the important role of the living environment in the lives of young children. However, the environment creation of the kindergarten, the teacher did not include the children's life elements when designing and designing, and did not regard the children as the main body of the kindergarten. The whole environment creation process rarely involved children.

3.2.2 Lack of Living Materials in Kindergartens

The corner of the kindergarten, the teaching toys used by teachers in class, is to make children understand the content of the lesson, so that children can experience life and experience life, but the teaching toys put in the corner of the kindergarten are not in line with children's life. For example, the books in the book corner, many kindergartens will design a book corner for young children, to allow children to read the book at the appropriate time, and cultivate the good habits of children's autonomous learning. But for the books in the corner of the book, teachers did not carefully screen, some books that do not meet the physical and mental development and age characteristics of young children are also mixed in.

3.2.3 Kindergarten Curriculum Content is out of Touch with Children's Life

The content of the kindergarten curriculum should be closely connected with the child's life, and it should also be developed and changed to conform to the child's development. However, the curriculum content of most kindergartens has not been updated in a timely manner and cannot keep

up with the pace of social development. As a result, the curriculum content of kindergartens is out of touch with children's lives. At the same time, the kindergarten did not fully investigate and understand the children in the kindergarten. The curriculum content of the kindergarten was not closely related to the cultural environment, economic environment and political environment of the child's own life. There was a huge difference between the curriculum content and the familiar environment of the child, which made the child uninterested.

3.3 No Life-like Curriculum System

Curriculum is a system about educational goals, content, methods and evaluation, and a bridge for transforming educational thoughts and educational theories into educational practices. Kindergartens should build a complete living curriculum system to promote the development of life education. However, when developing kindergarten-oriented courses, the kindergarten did not focus on integrating with life education theories, did not pay attention to curriculum reflection and summary, and did not evaluate the living-oriented courses in a timely manner. Therefore, the living-oriented courses throughout the kindergarten are fragmented, impromptu. Teachers do not see the advantages and disadvantages of the life-oriented courses that they carry out. Each life-course course appears relatively random, without a systematic measure and plan.

4. Strategies and Suggestions for Improving the Kindergarten Curriculum of Daily Life

Life education requires that education be combined with life. The kindergarten curriculum should be rich in elements of life. The content, purpose and method of education should be updated as life develops and changes, and it must be constantly adapted to the needs of life development. To increase the living elements in the existing kindergarten curriculum and strengthen and improve the life education in kindergartens, we can start from the following aspects.

4.1 Increasing the Awareness and Emphasis of Preschool Teachers on the Life-like Kindergarten Curriculum

Provide preschool teachers with learning opportunities for preschool education theory knowledge, and carry out more life education teaching and research activities, so that preschool teachers 'ability to carry out life-based kindergarten courses is improved; provide more internship opportunities for students in preschool teachers' schools, and make their theory It can be used in practice; strengthen the communication between preschool teachers and normal students, so that the theory of life education can continuously improve and follow the development and change of life. The person in charge of the kindergarten must take the lead, pay attention to the implementation of the life-like kindergarten curriculum, overcome the difficulties encountered in the implementation of the life-like curriculum, and promote the development of the life-like kindergarten curriculum.

4.2 Increasing the Input of Resources for Kindergarten Living Curriculum

The rich curriculum resources play an important role in children's learning. Therefore, the implementation of a living kindergarten curriculum can break through from the curriculum resources. Specifically, it can increase the input of living elements from the aspects of environment, course materials, and course content.

4.2.1. Creation of Children's Living Environment

The kindergarten environment is a necessary condition for kindergartens, that is, all conditions that can have a certain impact on the physical and mental development of young children, including material and spiritual conditions. In terms of creating the physical environment, you can choose themes that are closely related to children's lives, the change of the four seasons, places to play, traditional festivals, homes to live, etc., which can arrange scenes that children are interested in. At the same time, children's ideas should be respected, children's abilities should be trusted, children's

creativity should be liberated, and children's planning and design should be invited to even transform their small world.

4.2.2 Placement of Children's Living Materials

The teaching aids and teaching materials used by teachers in class can be obtained from children's lives. As Mr. Tao Xingzhi said: "Everywhere is life, that is, education is everywhere." [2] When putting in materials, we must consider the characteristics of children's physical and mental development, put in living materials that can promote children's comprehensive development, and let children in the process of doing it yourself, increase life experience and stimulate young children's potential.

4.2.3 Exploration of Children's Life Courses

All the content that is closely related to the life of young children and is of interest to young children can be integrated into the content of early childhood education. [3] The content of the kindergarten curriculum should come from the children's own life, and it can promote the growth and development of children. All aspects of children's life are closely connected, and they have the characteristics of integrity and balance. Only on the premise of fully understanding the children's life, can they extract the content that children are really interested in from life. The content of the kindergarten curriculum should not only choose things that interest them and interesting phenomena within the scope of children's life experience, but also help children expand their existing experience and knowledge. [4] The multi-faceted and complex nature of social life determines that not all life can be used as a kindergarten curriculum content. When extracting kindergarten curriculum content from life, it is necessary to choose the one that conforms to the laws of physical and mental development of children, positive and healthy, and civilized and beneficial. The habits and common sense that are closely related to children's life are refined and sublimated to form a harmonious and unified kindergarten curriculum.

4.2.4 Design of Children's Life Games

Game activities are part of social life, but not just "everyday life". Toddlers' preferences are obvious, and their interests will naturally manifest in day activities. [5] When designing game activities, we should pay attention to children's performance, characterize children's interests and lives, filter out meaningful and valuable events from children's lives, regularize these events, and transform them into life-like kindergarten games. We must fully respect children's experiences and abilities, and let games become children's own games, and become a kind of valuable life activities and learning activities in the process of children's growth [5].

4.3 Constructing a Curriculum System for Kindergarten Life Education

Based on Mr. Tao Xingzhi's life education philosophy as the theoretical foundation, establish a life-oriented curriculum goal, curriculum content, curriculum implementation and curriculum evaluation plan, and set up a specialized research group on kindergarten curriculum life, and regularly conduct curriculum life research in kindergartens the meeting will propose solutions and conduct practical tests for problems encountered in various links in the implementation process. Finally, the successful cases will be compiled into a book, which will provide a realistic basis for the implementation of future life-oriented courses and promote the possibility of kindergarten curriculum. Sustainable development.

Kindergartens should be a learning environment full of joy, childlikeness, and rich content. Developing a kindergarten-based curriculum can help young children learn common sense of life, gain experience and skills, and lay a solid foundation for future study and life. The kindergarten curriculum under the guidance of life education theory has its own characteristics, so we should also create a kindergarten life curriculum with local characteristics.

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Application of Cognitive Metaphor Theory in English Vocabulary Teaching

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Abstract. English vocabulary teaching is a key and difficult point in English teaching. At present, the degree of studying it is becoming deeper, and different related theories have been applied to vocabulary teaching. The improvement of the application-based cognitive linguistics provides a theoretical basis for the teaching of English vocabulary. This paper mainly focuses on the cognitive metaphor theory put forward by cognitive linguist Mr. Lakoff, and explains how to apply this theory to English vocabulary teaching effectively to improve the teaching effect.

Keywords: English Vocabulary Teaching, Cognitive Linguistics, Lakoff's Theory of Cognitive Metaphor.

1. Introduction

Vocabulary teaching plays an important role in English teaching, which goes together with pronunciation and grammar. They constitute three elements of language. Many linguists have mentioned the importance of vocabulary in language. For example, Harmer once said that if we compare the structure of language to a skeleton, then vocabulary are the blood and flesh on it. Krashen & Terrell also explained the important role of vocabulary in language and the role of successful vocabulary teaching in students' classroom learning, social life and further study. Mr. Hu Chundong, a Chinese linguist, held that vocabulary teaching in a broad sense was the mainstream of English teaching. In 1990, he proposed five equations, namely that the generalized teaching of vocabulary referred to the whole teaching of English. Specifically, teaching vocabulary is equal to teaching culture, teaching vocabulary is equal to teaching communication, teaching vocabulary is equal to teaching thinking, teaching vocabulary is equal to teaching learning, teaching vocabulary is equal to teaching language. It could be seen that English vocabulary teaching was not only emphasized in foreign countries, but also in China. So many theoretical methods have been applied to the study of English vocabulary teaching in China. For example, cognitive psychology, cognitive linguistics, semantics, stylistics, pragmatics, intercultural communication and corpus have all mentioned the importance of vocabulary teaching. In cognitive linguistics, there are some people who make use of Lakoff's metaphor theory, but most of them only focus on the introduction of Lakoff's metaphor theory.

2. Lakoff's Framework of Metaphor Theory

The emergence of cognitive linguistics is closely related to the discovery of the cognitive meaning of metaphor in human thought and language. It has the basic characteristics of cognitive linguistics. Its basic point is that language is no longer autonomous, but a part of people's general cognitive ability based on the embodied philosophy. Cognitive linguists represented by George Lakoff have made great contributions to the emergence of cognitive metaphor theory. The emergence of cognitive metaphor theory is not the work of only one person, however, we shortened the cognitive metaphor theory known in cognitive linguistics to “Lakoff's cognitive metaphor theory” in order to facilitate the expression and highlight Lakoff's primary contribution.

In 1980, Lakoff and Johnson published an epoch-making monograph on metaphor theory named “the metaphor on which we live”. They defined metaphor as: metaphor refers to the way people understand and experience another thing with one thing. The objects human understand at the beginning are often tangible, concrete, easy to understand, the vocabulary they created and used are

mostly the corresponding specific things. With the development of knowledge, human beings have acquired the ability to treat intangible, abstract and difficult-to-define concepts by reference to the conceptual knowledge and experience of known concrete things. Therefore, they gained the ability to express abstract concepts with the help of concrete words, and formed a metaphorical language in which different concepts were related to each other. The working mechanism of metaphor is concept mapping, namely the concepts of source domain and target domain proposed by Lakoff. The source domain is familiar and concrete, while the target domain is unfamiliar and abstract. Mapping between source and target domains is used when understanding some unknown thing. For example, “love is a journey” reflects the basic way of people's cognition: It ranges from concrete to abstract. So we can describe the mapping of “love is a journey” as followed:

destination of love → travel destination
twists and turns of love→ difficulties in travelling

Many metaphors are obvious, but there also contains a large number of so-called dead metaphors in language.

Such as the following:

The time will come.
We construct a theory.

In fact, these statements have been solidified like any other words or phrases, and the mapping from the source domain to the target domain is largely invisible. It is found that metaphor is an important way for people to understand abstract things through this research. According to statistics, 70 percent of meanings of vocabulary in languages derive from metaphor, and the phenomenon of metaphors is also universal because of the similarity of human cognitive mechanisms. Therefore, metaphors can be regarded as an important way of the development of vocabulary meaning.

3. Application of Lakoff's Metaphor Theory in Vocabulary Teaching

Metaphors often appear in daily language, so it is far from enough to teach and understand the literal meaning of vocabulary in English vocabulary teaching. The literal and figurative meanings of words should be considered together from the perspective of applied linguistics. Of course, foreign language learners should firstly grasp the core meaning of vocabulary, which can also be said to be the basic literal meaning. This meaning is also listed firstly in the dictionary. Secondly, the metaphorical meaning of vocabulary in specific context should be revealed. Perie & Oshlag believe that the teaching function of metaphor is reflected in that metaphor can make use of the common experience base between teachers and students and build a bridge of communication between teachers' rational knowledge and students' knowledge. Thus, how to let teachers make full use of the theory of cognitive metaphor to improve English vocabulary teaching is discussed in the following aspects.

3.1 To Understand the Mode of Thinking of English Metaphor and Stimulate Students' Cognitive Awareness of Metaphor

Metaphor, as a cognitive mode, is ubiquitous in all languages. Teachers should explain the implicit meaning of each word during teaching process, and help students gain the ability to think from the one to the other, so as to help students understand the feature of polysemy of the word, and strengthen the memory of vocabulary. Therefore, we should understand the cognitive mechanism of metaphor, that is, concept mapping. The concept of metaphor is conducive to the internalization of linguistic information, these concepts have generality, which systematically reveal the internal construction of certain things from relevant aspects, and they are expressed in discourse through a

series of linguistic forms. Therefore, it will undoubtedly help them induce, comprehend and acquire the target language well if students are inspired to use these concepts well in teaching process.

The following mainly illustrates how teachers should guide students to learn the way of thinking of metaphor through the specific teaching of several kinds of English vocabulary. Firstly, for the vocabulary which belong to the idiomatic or colloquial phrases. The teaching process of idioms was more rigid and students adopted the method of rote learning in the past. The teacher only treats idioms as a whole and fails to notice that most idiomatic words have implication behind them, which are mostly metaphorical statements.

Such as:

Conceptual metaphor of “Love is fire”:

I am burning with love.

She carried a torch for him.

Conceptual metaphor of “Violence is fire”

The killing sparks of the riot.

They extinguished the last spark of revolution.

Location metaphors like the following:

Happy is up; sad is down

Health and life are up; sickness and illness are down

He came down with the flu.

I'm feeling up today.

I'm feeling down this morning.

All the above examples use concrete things to replace the abstract things which are difficult to understand, these examples belong to category of idiomatic statement. Understanding the word directly from literal meaning is not OK, teachers should use the overall teaching method namely putting forward the concept of metaphor firstly and point out that they are not only adoption of the rhetoric, but a way of thinking. Secondly, with the source domain, namely the knowledge students have learned and been familiar with to explain and study the target domain, as a result, the new and more abstract knowledge is formed. Teachers should make students consciously discover and learn metaphors. When students are familiar with metaphor methods, they will be able to memorize these expressions with idiomatic properties.

In fact, there are many words which have multiple meanings. Many words have many extended meanings in addition to their core meanings. The teacher should make clear that these extended meanings are formed through considering the concrete meaning as a more abstract meaning. The polysemy of words is a difficult part in teaching, so teachers should make full use of the metaphor theory. For example, the word “heavy” basically means that something is heavy, but in some phrases like heavy rain, heavy storm, heavy tea, etc., it is not easy to directly understand its meaning even if you consult the dictionary. Only by using conceptual metaphorical thinking can you better grasp its collocation. For example, the phrase “heavy rain” maps the meaning of “heavy” to the concept of more rain, so that people can feel the rain pressing on people like a heavy object with weight, which is specific and vivid. In the process of teaching, it should be noted that vocabulary has only one basic meaning, namely, the core meaning, and its marginal meaning is often connected with the core meaning through conceptual metaphor. Students' cognitive process of lexical metaphor will make them remember the relevant phrases of the word deeply and longer. When teaching this kind of vocabulary, teachers should guide students to notice that the meanings of a word are interrelated. It is found that the core meaning and extended meaning are connected by conceptual metaphor through the learning of context and socialized knowledge.

3.2 Introduce Relevant Cultural Background in Time to Expand Students' Scope of Knowledge

Metaphor is a tool for people to understand the world and construct knowledge. It is one kind of psychological transfer and a mapping from the original source cognitive model to the target cognitive model. Therefore, the selection and matching of vehicle and tenor is not only a linguistic form, but also a conceptual model and a cultural model, which has its cultural connotation.

Metaphor has no national boundaries, but we can see the convergence and divergence of different national cultures in the world by viewing the metaphors used by different nationalities. Therefore, the relevant knowledge of cultural background must be taught together when teaching metaphor.

For example, Britain is an island country surrounded by sea, and its navigation skill has been developed greatly since ancient times, so there are a lot of maritime metaphors in English. Such kind of phrases as “To keep one's head above the water”, “be all at sea”, “take the wind out of one's sail”. These metaphors are linguistically idiomatic and cognitively conceptualized, many of them have been used for a long time. They describe and record sailors' life at sea and their struggle with the sea. China was considered as an agricultural country with the majority of the agricultural population in Chinese history. There are also many metaphors in Chinese to reflect the industrious and simple excellent moral character of Chinese farmers, which is the summary of their experience in farming or life with strong local flavor. For example, phrases like “when you sow a melon, you reap melons” and “when you sow a bean, you reap beans”. The people of two countries have different religious beliefs, which are reflected in the metaphors they use. Buddhism has been popular in Chinese history, and there are many related metaphors in Chinese, such as “The monk couldn't make head or tail of it”, “doing a monk runs a bell for a day” and so on. The English people believe in Christianity, and churches can be seen everywhere in Britain, so many metaphors of church have been added to the English language, such as “As poor as the church mouse”, “A wolf in sheep's clothing”, etc., it will help to master metaphorical words In this way after understanding the relevant cultural background.

3.3 Teach Metaphor Systematically

Metaphor must be systematically taught if the above steps are to work fluently. Firstly, the students must be taught to master and understand the cognitive mechanism of metaphor. We can study the theory of cognitive metaphor in brief, so that students can learn to think metaphorically. Since knowledge and human life experience are inseparable, we should learn to understand the cultural background and human direct experience contained in language. Secondly, the collection of typical metaphorical examples for systematic teaching can arouse students' interest in learning because every metaphorical word has its own interesting knowledge, which can not only build a knowledge network but also dispel students' fear of vocabulary learning. Thirdly, it is better not to let go of the metaphorical examples in the process of teaching, so as to develop students' habit of metaphorical thinking. The last step is to explain Chinese and foreign culture. These above steps are often integrated and cannot be separated completely. Therefore, teachers are required to have a high level of cultural literacy.

4. Conclusion

We realize that metaphor is not only a figure of speech, but also a basic way of thinking through a brief introduction to the theory of cognitive metaphor. Therefore, we should first make clear the characteristics of metaphor in vocabulary teaching. That is, metaphor is a cognitive way which people can understand and experience another thing with the help of one thing, so as to guide students to apply the knowledge they have learned to the new knowledge to deepen their understanding. Secondly, it should be clear that generally vocabulary has more than one meaning, in addition to the most core meaning, there are extended meaning. Students can be easier to extend the polysemy of vocabulary and grasp its metaphorical meaning quickly in this way, which is also of great help to idiomatic vocabulary learning. In a word, teachers should strengthen this aspect of teaching, so as to help students open the way to learn English vocabulary well.

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Correlation Analysis of Mental Health and Academic Achievement of Freshmen based on SCL-90

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Abstract. To find out the influence of mental health on academic achievement to improve student's academic achievement, the psychological state of freshmen was investigated. In the survey, the Symptom Checklist 90 (SCL-90) was used for psychological tests, and the academic achievement of the 2018-2019 school year was selected as the academic achievement. By comparing with the national norms, the high and low groups, to get the statistical analysis of data by SPSS23.0 software. The results show that the mental health of freshmen has a certain influence on academic achievement. The score of Somatization, Obsession, Anxiety, Horror, and Psychosis were higher than the national norm, and the rest were lower. The highest detection rate were Obsession and Interpersonal Sensitivity. Comparing high group with low group, high group are relatively serious. Anxiety and academic achievement show a significant positive correlation. Depression and academic achievement show a significant negative correlation. Through this investigation, we hope to improve the academic achievement of college students to provide a certain theoretical basis.

Keywords: SCL-90, Mental Health, Academic Achievement, Freshmen.

1. Introduction

College students' excellent academic performance of achievement goal orientation have significant positive correlation [1][2]. And good and stable mental health qualityis contribute to the smooth progress of learning activities. People can play their potential effectively, and conducive to the self-realization of the intended goals. It's focused on the single study of students' mental health or academic achievement, and rarely combined mental health with academic achievement in previous studies. Therefore, it's necessary to explore the correlation between mental health and academic achievement focusing on freshmen, which in order to provide necessary theoretical support for the improvement of academic achievement.

2. Object and Methods

A total of 194 questionnaires were distributed to students of the college in 2018. And 180 valid questionnaires were recovered with a recovery rate of 92.8%.

Symptom Checklist 90 (SCL-90) was used for psychological test. The SCL-90 contains 90 rating items, assess the psychological symptoms and the severity from a variety of perspectives, such as feelings and emotions [3]. The scale is level 5 scoring system, and students choose according to which score level they feel is.The bigger the number, the more serious the problem. The total score $\geqslant$160 or factor score$\geqslant$2 is the standard to define the psychological barriers.

The students' academic achievement in the 2018-2019 academic year was used for the students' academic achievement. In view of the difference of the total score in different majors, the average grade point is used as the index. The Grade Point$\geqslant$3.20 is defined as the high group, the Grade Point$\leqslant$2.54 is the low group, and the rest is the general group.

3. Research Results

3.1 Mental Health Status.

According to the SCL-90, 40 cases (22.2%) were found to be psychological barriers, including 16 boys and 24 girls. The average of SCL-90 was ranked that the higher scores were Compulsion, Interpersonal Sensitivity, Depression, Anxiety and Somatization.

Compared the test results with the national norm, it was found that the students' Somatization, Compulsion, Anxiety, Terror and Psychosis were higher, and the others were lower. Among them, the Compulsion, Depression, Anxiety and Hostility were statistically significant ($p < 0.05$) .And others were notstatistically significant ($p > 0.05$) .

3.2 The Correlation.

The Correlation of SCL-90 score and academic achievement show that the difference between them is statistically significant ($P < 0.05$). In the comparison between the high group and the low group, the results show that the proportion of psychological abnormalities in the high group is higher than that in the low group, as shown in Table 1.

Table 1. Distribution Table of High and Low Groups with Psychological Abnormalities

Group	Total Score ≥160	Factor Score ≥2	Psychological Abnormalities
High Group	25%	54.2%	50%
Low Group	12.5%	28.6%	29.2%

Explored the proportion of each factor score ≥2 in different groups to analyze the influence of each factor in different groups. Except for Depression, the psychological abnormalities rate of all other factors in high group was higher than that in low group. And the average score of SCL-90 was higher than that in low group. The Depression rate of the low group was higher than that of the high group, the other factors were lower. The average score of SCL-90 was lower than that of the national norm except Compulsion, Terror and Psychosis. It can be seen that the students in high group have more serious psychological problems than national norms, and higher than the students in low group in college except Depression. The students in low group have higher levels of Compulsion, Terror and Psychosis than national norms, and higher depression than the students in high group in college. As shown in Table 2.

Table 2. Comparison Between Groups And National Norms

Factor	$\bar{x}\pm s$		National Norms
	High Group	*Low Group*	
Somatization	1.48±0.45	1.32±0.42	1.37±0.48
Compulsion	1.76±0.48	1.70±0.46	1.62±0.58
Interpersonal Sensitivity	1.60±0.49	1.53±0.52	1.65±0.61
Depression	1.51±0.50	1.43±0.45	1.50±0.59
Anxiety	1.54±0.44	1.34±0.37	1.39±0.43
Hostility	1.43±0.48	1.27±0.40	1.46±0.55
Terror	1.43±0.50	1.26±0.34	1.23±0.41
Stubborn	1.47±0.53	1.34±0.47	1.43±0.57
Psychosis	1.43±0.45	1.30±0.37	1.29±0.42

Explored the distribution of SCL-90 factors in different groups, and to analyze the influence of each factor in different groups, as shown in Table 3. In the high group and the low group, Compulsion ranked the first and Interpersonal Sensitivity ranked the second. The high group ranked third was Anxiety, and the low group tied for second was Depression. According to the data, Compulsion and Interpersonal Sensitivity are the main psychological problems that college students are facing at present. But they are not closely related to their academic achievements. Students with

excellent academic achievement had higher anxiety level, while students with poor academic achievement had higher depression level.

Table 3. Comparison Of Each Factor In Different Groups

Factor	Factor score ≥2		High Group Sort	Low Group Sort
	High group	Low group		
Somatization	12.5%	8.3%		
Compulsion	29.2%	25%	1	1
Interpersonal Sensitivity	25%	16.7%	2	2
Depression	12.5%	16.7%		2
Anxiety	16.7%	8.3%	3	
Hostility	12.5%	8.3%		
Terror	12.5%	4.2%		
Stubborn	8.3%	8.3%		
Psychosis	12.5%	12.5%		
other	16.7%	8.3%	3	

Taking the academic achievement as the Dependent Variable, the SCL-90 as the Independent Variables, the groups as Dummy Variables (expressed by X1 and X 2 variables) to analyze the correlation by MATLAB [4]. The Correlation Coefficient of 0.753 was calculated, which showed that the variables were closely related.

The Regression was carried out with the $\alpha \leqslant 0.05$. It showed that there was significant difference between academic achievement with Depression (t=-0.8031, p=0.039) and Anxiety (t=9.528, p=0.035). So Depression and Anxiety were important factors influencing the academic achievement. The Coefficient of Depression was negative (-0.646) , and the Coefficient of Anxiety was positive (1.231) . As shown in Table 4. So Anxiety is conducive to improving academic achievement, while Depression is not conducive to improving academic achievement.

Table 4. Coefficients

Factor	B	S.E.	Beta	T	Sig.
Somatization	-0.059	0.586	-0.033	-0.101	0.520
Compulsion	-0.094	0.721	-0.056	-0.130	0.597
Interpersonal Sensitivity	-0.610	0.674	-0.390	-3.906	0.171
Depression	-0.646	0.027	-0.390	-8.031	0.039
Anxiety	1.231	0.106	0.654	9.528	0.035
Hostility	0.402	0.496	0.229	1.811	0.423
Terror	0.187	0.434	0.103	0.430	0.670
Stubborn	0.328	0.622	0.209	0.527	0.401
Psychosis	-0.281	0.627	-0.149	-0.448	0.457

4. Discuss

4.1 General State of Mental Health

The survey showed that 22.2% of freshmen in 2018 had psychological abnormalities, which is in line with the 10%-30% of freshmen in China. It indicates that freshmen's mental health state is generally good in the college. But factors of Somatization, Compulsion, Anxiety, Terror and Psychosis were higher than the national norm, and the others were lower. The top two factors are Compulsion and Interpersonal Sensitivity, which are the main psychological problems college students are facing.

4.2 Mental Health has Certain Influence on Academic Achievement

Mental health has certain influence on academic achievement through the survey[6]. The proportion of psychological abnormity of high group is higher than low group. And in the analysis

of factors, the high group is higher than the national norm except Interpersonal Sensitivity and Hostility, the low group was lower except for Compulsion, Terror and Psychosis. It can be seen that the students with excellent academic performance have more serious psychological problems.

According to the results of Correlation, Analysis, Compulsion, Depression, Anxiety and Hostility had some effects on academic achievement. Among them, Anxiety and academic achievement showed a significant positive correlation, Depression showed a significant negative correlation. It is suggested that moderate anxiety may contribute to the improvement of academic achievement, while certain depression may hinder the improvement of academic achievement.

From a psychological point of view, Depression is an ineffective response to life. If students do not alleviate their depression, it will have a negative impact on their study and life. Anxiety is a defense mechanism of our brain. It can alert us to potential dangers around us. It is an appropriate response to our environment. Therefore, appropriate anxiety can help students to understand the situation more objectively. But if the anxiety is excessive, the effect is counterproductive.

Above all, mental health status has a certain influence on academic achievement. Students with excellent academic achievement have more serious psychological problems. Anxiety is conducive to improving academic achievement, and Depression is not. Colleges should strengthen humanistic care and peer psychological mutual aid to improve students' mental health with poor anti-frustration ability, weak interpersonal skills and strong self-consciousness. And positive psychological intervention for the existence of major psychological problems is necessary.

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Innovative Strategies in English Teaching based on the Background of Big Data

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Abstract. English is the most widely used language in the world. For Chinese students, having a good command of English will have a positive impact on their future studies and work. Therefore, the English teaching model in colleges and universities should keep up with the pace of the times, increase information and intelligence, make full use of big data's advantages, innovate teaching methods and improve teaching quality. This paper mainly analyzes the problems existing in college English teaching and then probes into the innovative strategies of college English teaching under the background of big data's wide application.

Keywords: Big Data; College English; Teaching Model; Innovative Strategy.

1. Introduction

Big data, also known as a huge amount of data, is a major reform in the information age, which is not only to master the data and information but also to optimize and deal with these large amounts of data [1]. At present, big data has gradually integrated into our lives and become an important factor in social development. As an important place to train socialist successors in the new era, colleges and universities are also deeply influenced by big data and shoulder important responsibilities. Under the background of the application of big data, the ways for students to acquire knowledge are becoming wider and more convenient. Therefore, colleges and universities should strengthen communication with the outside world, constantly improve their technical level, enhance their honesty ability, and break the original teaching model. Actively innovate teaching methods, make use of multimedia technology and big data technology to create a network platform to realize the informationization, science and technology and high efficiency of English teaching in colleges and universities. Improving the quality of English Teaching in Colleges and Universities

2. The Present Situation of English Teaching in Colleges and Universities and the Existing Problems

2.1 The Present Situation of English Teaching in Colleges and Universities

With the continuous development and deepening of big data, its application rate in various fields is getting higher and higher, and colleges and universities, as the main place for students to study and the main gathering place for scientific research, many educators are actively involved in scientific research, and there is the emergence of new information in various fields. As an educational place, colleges and universities themselves have huge information, and constantly excavate the information of colleges and universities, which can present the information about colleges and universities. Judging from the current situation of English teaching in colleges and universities in China, it is mainly to use big data to update the mode of English teaching in colleges and universities, but in this model, we need to build a sound educational mechanism and a sound teaching system. Also, we need to spend a lot of manpower, material and financial resources to run, debug and maintain the system. These problems are difficult to achieve for most colleges and universities at present. Therefore, at present, colleges and universities only use big data to share and transmit relevant materials on English learning and cannot collect data on students' learning behavior. Therefore, in the process of English teaching in colleges and universities, we can set up English online courses in the university, through which we can collect the time, times and content of students' visits, so that we can simply record the students' learning behavior. and based on this to

analyze the learning needs of students. The use of this way can not only increase the school's educational resources and broaden students' learning horizons but also help the school to make a comprehensive understanding and analysis of students' learning situation. and then set up some targeted English courses that are conducive to the development of students. This method has been widely used in English teaching in most colleges and universities, but it still has many shortcomings, such as insufficient data collection, inaccurate analysis of students' learning behavior and so on. therefore, many colleges and universities carry out English teaching with the help of some mature third-party platforms, which can enrich their teaching resources and help students achieve the goal of personalized learning. Stimulate their interest in learning and self-study potential, improve the interaction rate between students and teachers, and achieve diversified learning and diversified evaluation. Although most colleges and universities in China have begun to carry out English teaching with the help of third-party platforms, this teaching model still can not meet the development of the current society. Therefore, in the process of English teaching in colleges and universities, it is still necessary to establish an independent English education information system, build an independent English teaching system and formulate a scientific and reasonable student training model to provide high-quality talents for the society.

2.2 Problems in English Teaching in Colleges and Universities

In recent years, big data's idea has been gradually integrated into a college education and teaching, but from the overall development direction, big data's thought has not penetrated college English teaching. Therefore, the use of big data by English teachers and students in many colleges and universities is not very scientific, resulting in big data's advantages and effectiveness have not been brought into full play, thus affecting the improvement of the quality and level of English teaching in colleges and universities. Besides, the mode of English teaching in colleges and universities in China still stays in the traditional teaching methods, teachers' teaching methods and ideas have not been innovated, and the teaching model still adopts the traditional installation teaching methods. the boring teaching content has not been able to stimulate the current students' enthusiasm and interest in learning English. at the same time, many college English teachers have not paid attention to the practicality of English education. The process and methods of teaching do not take into account the actual needs of students, and English education lacks practical value, which affects the future career of college students. As a result, some college students are resistant to learning English and lack self-learning awareness and autonomous learning ability when they escape from English teachers, which hinders the expansion of the coverage of English education, and education is limited to a certain extent. it is difficult to ensure the effectiveness of English teaching.

3. A Rational Analysis of College English Teaching Strategies under the Background of Big Data's Application

3.1 A Broad Consideration of Big Data's Application to English Teaching Strategies in Colleges and Universities

Data is the numerical value. Under the concept of data in computer science, data is the numerical value on which all kinds of calculations, statistics, technical design, and scientific research are carried out. On the other hand, big data expands the data, which means that it is impossible to manage, process, capture and collect it with conventional software tools within a certain time. It is necessary to have stronger insight, optimization ability, and decision-making power to have massive and diversified information assets. The connection between big data and college English teaching strategies is to change the current teaching situation in colleges and universities, build a more efficient teaching model, analyze, understand, compare and master relevant information resources. and then extract valuable data parameters and knowledge content to provide scientific decision-making and analysis for college English teaching. Some researchers put forward: "big data

has induced the reform of teaching structure and thinking. To continuously deepen the deep reform of teaching and promote the deep integration of big data and university teaching, it is necessary to make use of the supporting conditions of deep teaching reform induced by big data. We should mine the behavior data of teachers and students, build valuable big data teaching resources, and cultivate a harmonious and symbiotic big data teaching culture." [3]

3.2 The Narrow Embodiment of Big Data's Application in College English Teaching Strategies

The narrow embodiment of big data's application to college English teaching strategies is mainly based on the teacher's role, how to make use of big data's value and function to teach [4]. College teachers can use big data to guide students to realize personalized learning, tap big data's teaching value, put forward big data's innovative strategies to induce teaching reform in practice, define teaching objectives, and adopt targeted teaching methods. build a personalized teaching model and so on. Teachers' application of big data in teaching includes: obtaining, storing and collating relevant educational data. In theory, the smart classroom is to record and store the students' daily behavior data through sensors and analyze the relevant educational data. This requires the use of learning analytics to analyze the degree of repetition and residence time of students, and with the help of machine learning, semantic analysis, psychology and other contents to locate students' learning difficulties and present relevant educational data. through practice, study, examination and other methods to analyze the students need to be strengthened to carry out targeted teaching.

4. Innovative Strategies of College English Teaching under the Background of Big Data's Application

4.1 Innovating College English Teaching Ideas with Big Data

Under the background of big data's application, there is a great difference between the college English teaching model and the traditional college English teaching model. If the traditional teaching concept is still adopted to implement the current college English teaching under the background of big data, it will seriously affect the development of college English teaching and reduce the quality of college English teaching. Therefore, university administrators and college English teachers should change and innovate their teaching ideas in time to ensure that college teachers can teach English correctly under the background of big data. And adopt appropriate teaching methods to promote college students to adapt to the development of the times, give full play to big data's advantages, and take the teaching road of digitalization, information and science, and technology.

4.2 Flexible Formulation of Teaching Plans through Diversified Teaching Methods

In general, there are four forms of English teaching in colleges and universities, namely Lecture, Tutorial, Lab, Workshop. The lecture mainly transfers English knowledge through classroom teaching. Due to a large number of students in the classroom, most of the classroom time is occupied by teachers, and the English classroom teaching is carried out in the form of unilateral teaching with teachers as the main body. Therefore, in class, students must pay attention and take relevant notes. A tutorial is the next step of Lecture, which mainly aims at the topics described in class to carry out group discussions, allowing students to communicate and communicate independently in the discussion, and conduct in-depth research on relevant knowledge points. At this stage, students are free to ask questions, so students are required to make preparation and study plans before class. Also, teachers can add some practical interactive activities, such as situational dialogue, to allow students to participate in it and enliven the classroom atmosphere. The lab is to carry out classroom communication activities with the help of network technology and make effective use of spare time to ensure the continuity of students' learning. The workshop mainly exercises after class to enhance the understanding of English knowledge, and it is also a way to test students' learning achievements. Therefore, according to different stages and teaching needs,

teachers should choose appropriate teaching methods and formulate scientific and reasonable teaching plans to help students have an in-depth understanding of the relevant English knowledge.

5. Conclusion

To sum up, the advent of the big data era has brought opportunities and challenges to the development of English teaching in colleges and universities. English teaching in colleges and universities should abandon the traditional teaching ideas, combine the development advantages of the data age, and reform and innovate the teaching mode. open up a new development path and build a teaching model in line with students' development. College English teachers should combine teaching materials and students' cognitive laws, innovate teaching concepts, keep up with the pace of the times, and apply information technology to improve the quality of English teaching in colleges and universities. Besides, teachers should correctly face the problems existing in the current teaching process, actively innovate college English teaching strategies, break through the traditional teaching model, constantly improve the comprehensiveness of English teaching, and stimulate students' enthusiasm and interest in learning. promote the overall improvement of students' English quality and achieve teaching goals.

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Research on the Blended Teaching for Engineering Course based on Student Profile

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Abstract. The implementation of blended teaching mode is the trend of higher education reform. The blended teaching mode can not only realize the sharing of high-quality course resources, but also promote the teaching reform of higher education. Meanwhile, Student profile is a virtual representation of real students based on a series of real data. In this paper, one improved blended teaching mode based on the student profile was developed. The course of mechanical design was used as the research object. Both the establishing and implementing guidelines of the developed blended teaching mode were addressed and discussed. It was found that the developed blended teaching mode based on student profile can provide feasible solutions.

Keywords: Blended Teaching; Student Profile; Engineering Education; Student Behavior.

1. Introduction

With the deepening of education reform, the popularization of computer information technology and the rise of networked learning have had a strong impact on the teaching mode of higher education. The blended teaching mode is a new teaching mode. It is a carrier of deep integration of information and educational resources. It is regarded as the development of the traditional teaching mode under the background of Internet. The implementation of the blended teaching mode is the trend of higher education reform. For the blended teaching mode, the sharing of high-quality course resources can be realized, and the teaching reform of higher education can be promoted[1, 2]. The blended teaching mode provides a new direction for the teaching reform of higher education.

In addition, with the rapid development of information technologies such as the Internet, big data and artificial intelligence, all kinds of data generated by individuals can be fully stored and mined. These data would be gradually accumulated into a mass of information. How to use and analyze these data has gradually become the focus of attention. In the process of teaching, teachers can accumulate a large number of student data. By integrating and processing these data, the behavior characteristics of students can be depicted comprehensively from different dimensions, and gradually form accurate student profiles. The developed student profiles can provide references for teacher.

In the paper, the concept of student profiles would be introduced into the blended teaching, so as to achieve better teaching effect. The course of mechanical design would be adopted as the research object. Both the establishing and the implementing guidelines of the developed blended teaching mode based on the students' profiles would be addressed and discussed in the following sections.

2. Background on the Blended Teaching and the Student Profile

In the field of education research, the blended teaching is regarded as a teaching mode including offline teaching and online teaching[3]. It has several characteristics. First of all, the online teaching is an important part of the whole teaching process, not as an auxiliary of traditional teaching; the offline teaching and online teaching complement each other. Secondly, since the online teaching breaks through the limitation of traditional teaching in time and space. The teaching part and the learning part no longer need to be carried out in the same place or at the same time, the blended

teaching will inevitably lead to the reconstruction of traditional classroom teaching. In the traditional teaching process, the teacher's teaching was paid too much attention and the students' thinking was ignored. It results in the gradual loss of students' initiative in the independent learning. It also leads to great differences in the learning effect of students with different abilities.

User portrait is a virtual representation of real users based on a series of real data. For examples, the online shopping successfully employs big data technology. After analyzing customers' purchase behavior, the customer is labeled. The target customers are modeled and classified, so as to find the potential customers and recommend products to customers, thus achieving the goal of accurate marketing. For teaching, teacher can accumulate a large number of student data in the process of teaching. By integrating and processing the data, the accurate student profiles can be gradually formed to provide reference for teacher[4].

3. The Improved Blended Teaching Approcah

Generally, the courses of engineering are theoretical and difficult to understand. The students' mathematical ability and logical analysis ability are required. The characteristics of engineering courses can be summarized into three points: path dependence, practical dependence and thought integrity dependence.

In the traditional teaching mode, the teacher can control the setting of learning path, but it is difficult to guarantee the learning effect of each student. Most of the time, teachers can only control the pace of teaching through the classroom response of a small number of students. The blended teaching mode can provide a self-feedback learning method for each student. The blended teaching mode mainly includes three modules: online self-study, offline unified teaching and hierarchical teaching. According to the course arrangement, students preview online. Later, similar to the traditional education, the students conduct offline unified teaching. In spare time, after the review of the online course, students are encouraged to take an online test. Those students who fail the online test will have to review again and take the test until they pass the test. According to the online learning effect and the online test results, the teacher can arrange students of different levels to give individual lectures. In this way, the one-to-one inspiring teaching effect can be achieved. Finally, the theoretical knowledge can be consolidated through practical courses.

The highlight of the blended teaching model is that students can arrange their study time by themselves to preview and review courses through online learning resources. Teachers can arrange individual lectures for students of different levels based on the effects of online independent learning and online test scores. The combination of theoretical study and practical activities can also deepen students' understanding and mastery of knowledge.

Moreover, creating student profiles for the course can help teachers better understand and help students. Many discrete data are stored in online databases of the blended teaching. In order to obtain more accurate profile of students, the data preprocessing is one of important steps in data mining. It is necessary to mine as man features as possible from the database, so as to make the student profile more accurate. It can lay a foundation for the subsequent production of student profiles to ensure the reliability and availability of student profiles. The acquisition of student profile can be divided into the following four steps:

1.Data collection is the first thing to do. By collecting students' learning data, progress data, homework data, test data and other data, these data need to be further processed and cleaned up by filling in missing values and outliers. Finally, the database to be analyzed can be generated.

2. Data features need to be mined from the database using the data mining algorithm model. For example, labels such as "normal", "concerned" and "suspicious" can be extracted from the exercise data, test data and homework data. The teacher can actively intervene in the concerned and suspicious students.

3. Data mining methods such as classification and clustering should be used to model the extracted features or hidden features. In this way, the future behavior of students can be classified and predicted.

4. The student profile uses the category feature to classify the students and further extract the characteristics of the class. According to their class characteristics, students are rated, and those rated as "concerned" and "suspicious" should be given more attention to. For example, the characteristics of students A are less homework, low grades and slow progress, which are more in line with the characteristics of students who fail to complete the course on time. According to the future development trend of such students, it is necessary to give early warning to student A. Student A are then urged to complete the course through intensive study.

Student profile based on course data can make student management more active. According to the data of each student, a multi-dimensional profile can be made from different perspectives, and then the behavioral characteristics of the students can be mined. In the middle of the course, early warning can be given to guide the students' learning, which makes the teaching management more active and intelligent.

It can make the course management work more refined and personalized. Through data analysis, students' preferences in major and personal preference are obtained. For individual students, early intervention in the course learning and course guidance can make students' academic performance better, thus making the student management work more personalized.

Through the big data to understand and analyze the change of student demand, the student profile based on the course makes the teacher and the student closer. In the traditional teaching, there is little communication between students and teachers and the relationship is not close enough. For example, most students seldom take the initiative to communicate with teachers about what they do not understand about their courses. The student profile of the course can actively provide suggestions to the students according to the comprehensive information of the students. The suggestions of the students can also be fed back to the teacher, so as to reshape the student profile and realize dynamic interaction. It makes the teachers and the students closer.

4. Summary

In this paper, an improved blended teaching approach for engineering course was developed by integrating the student profiles concept. Based on the data generated in the process of the blended teaching, a profile of students was formed in engineering courses. The student profile of the course can actively provide suggestions to the students according to the comprehensive information of the students, and the suggestions of the students can also be fed back to the teacher, so as to reshape the student profile and realize dynamic interaction. It was found that the developed blended teaching based on student profile can provide feasible solutions. It is a bold attempt in engineering teaching.

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Reflection on the Construction of Foreign Language Teaching and Management Platform based on Cloud Computing

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Abstract. Computer technology is playing an increasingly important role in all walks of life, which has profound impact in various fields; it has also played a role in foreign language teaching. In recent years, foreign language teaching platform based on cloud computing emerges as the times require; the construction of this platform is closely related to cloud computing technology. Based on this, this paper elaborates the research and application of foreign language teaching platform based on cloud computing, and reflects on them.

Keywords: Cloud Computing, Foreign Language Teaching, Management Platform.

1. Introduction

With the construction and development of informatization, the application of modern information technology in foreign language teaching has begun to change the traditional foreign language teaching modes. As a new computer application technology, cloud computing has been widely used in the construction and development of foreign language teaching informatization, cloud computing also provides a favorable technical guarantee for mobile learning. Applying cloud computing technology to the construction and management of foreign language teaching platforms, with the help of the advantages of cloud computing technology, can achieve the unified planning, deployment and management of many application systems. This will not only improve the use and management efficiency of foreign language teaching resource platform, but also reduce the cost of building foreign language teaching resource platform, thereby truly achieving centralized management and data sharing of foreign language teaching resources. In addition, the popularization of smart mobile devices has brought great convenience to people's lives and learning, the foreign language teaching platform based on cloud computing technology can make people to learn foreign languages anytime and anywhere, and better mobilize people's learning enthusiasm for foreign languages, foreign language teaching based on cloud computing will become a new teaching modes.

2. Overview of Cloud Computing

Cloud computing is a new type of computing mode; virtual technology and data management technology are combined in cloud computing to provide powerful data computing functions, cloud computing technology is a fusion of modern network technology and traditional computer technology. Cloud computing technology integrates scattered computer resources through the Internet in accordance with certain rules; provide users with resource access and application services. Cloud computing deploys the Internet's hardware resources and software resources in the cloud and manages them effectively, cloud computing has powerful data storage capacity. Cloud computing adopts distributed processing technology and parallel computing technology, cloud computing technology has changed the traditional computer processing technology, instead of taking personal computers as the core, cloud computing gathers devices together, uniformly manage data information and provide powerful Internet services, provide a new way for people to obtain information. Cloud computing calculates and stores data information in the background server, and the client terminal uses an intelligent mobile terminal, so that the intelligent mobile client will not be limited in computing processing and storage capacity.

Cloud computing is the result of the comprehensive development of parallel computing, distributed computing, virtualization technology and network storage technology, which has the advantages of virtualized management, distributed storage and flexible expansion, it is not only a technological innovation, but also represents a concept and service model. In the cloud environment, cloud users can use terminal devices at any time and any place, and obtain the resources they need directly from cloud services through the network. Cloud computing can achieve dynamic management of software and hardware resources, unified scheduling and on-demand allocation mechanisms, cloud platforms have the advantages of cost savings, high resource utilization, and strong application scalability in resource management.

3. Analysis of Foreign Language Teaching Platform based on Cloud Computing

In the following, we will analyze the application of cloud computing in foreign language teaching from both the cloud and the user side, and conduct a comparative analysis in combination with the foreign language teaching.

The construction and management of traditional foreign language teaching platform have practical problems such as large capital investment, difficult data sharing, and weak technical strength, using cloud computing technology achieve the construction of teaching resource platform, which can effectively solve the contradiction between resource construction and application services, it has the following advantages for the construction of teaching resource platforms in colleges and universities: cloud computing reduces the cost of resource construction and maintenance, and is conducive to improving the utilization rate of equipment. The virtualization technology is used to build a shared hardware infrastructure resource pool, centralized management; unified scheduling and on-demand allocation of hardware resources avoid repeated construction of equipment, and greatly improve the utilization rate of equipment.

Cloud computing effectively achieves resource integration, which is conducive to the sharing of teaching resources. The foreign language teaching platform utilizes the loosely coupled technical characteristics to effectively integrate the existing various heterogeneous teaching resource platforms, manage and display the original scattered teaching resources in a unified manner, and realize the application integration and data sharing of the teaching platform. Cloud computing can face many users, which is conducive to improving the service capacity of teaching resource platforms. By using the technical characteristics of cloud computing dynamic expansion, when the application scale is expanded, it is not necessary to change the cloud computing application architecture, and the server can be directly added to the cluster. The cloud computing teaching platform can not only undertake teaching services for teachers and students of the school, but also provide service tasks to the public. Cloud computing uses distributed storage, which is conducive to improving the safety and reliability of teaching resources. Cloud computing uses the distributed storage architecture to store teaching resources in nodes of each server in data block units, moreover, the copy backup method is used in the data storage process to realize the storage of several copies of data in different server nodes to ensure data integrity.

At present, many schools have established a relatively complete foreign language teaching environment, and build including computer rooms and speech classrooms, etc. In addition, many schools have established an online self-learning system to enrich students' English learning life, but there is a problem, namely these teaching facilities and resources are in units of various schools, and the advantages of resource integration cannot be fully reflected in the teaching and learning of English. Many schools have established an independent English learning system to assist English teachers in multimedia teaching, however, in actual use; students still reflect the richness of learning resources and the personalization degree of autonomous learning methods cannot meet actual needs, the students' enthusiasm for learning English still fails to meet the expectations of the school.

The foreign language teaching platform based on cloud computing technology can integrate the original scattered resources, so that characteristic teaching resources can be shared and spread nationally or even globally in colleges and universities, This can weaken the difference in teaching

level due to geographical environment, school level and teaching environment, and infrastructure differences. In addition, the foreign language teaching platform based on cloud computing technology can transform the release model of new teaching resources from a single school to a national or even global users, which break the monopoly of resources in some colleges and universities, therefore, the utilization efficiency of network resources is greatly improved, and more schools, teachers and students are promoted from resource sharing in the first time. In addition, the foreign language teaching platform can create open teaching support environment, break the previous technical barriers of information technology for foreign language teaching workers, so that the majority of English teaching participants can use this platform and new technologies quickly developed creative teaching aids. Cloud computing technology can integrate English teaching resources of colleges and universities across the country, so that information sharing and full use of resources can be achieved, the application of cloud computing technology can make students use the experience of English learning models of other universities. The teaching platform supported by cloud computing technology is conducive to professional academic exchanges among teachers, through the teaching platform supported by cloud computing, teachers in relatively backward areas can refer to some teaching achievements and experiences of teachers in developed areas, so as to quickly improve their teaching level, thus achieving the effect of balancing the gap in teaching levels among regions.

Teachers can upload their teaching videos to the teaching platform, so that more students can see their videos and learn by themselves, moreover, teachers can also improve their deficiencies in teaching by watching their videos and students' feedback. Through this video recording method, teachers can be separated from the classroom, and more time is spent on academic research and teaching method improvement. From the perspective of students, students can learn anytime and anywhere through the teaching platform, have more learning space. In actual learning, the teaching mode of teachers is not acceptable to all students, through the teaching platform; students can find the most suitable teaching mode for learning and improve their English level.

From the perspective of the specific application of teachers and students, after logging in foreign language teaching platform based on cloud computing, the integrated and rich teaching resources are presented in a reasonable way; teachers and students can select and use them according to the teaching arrangements and individual specific needs, and provide real-time feedback information for system improvements. Moreover, the whole teaching process is objectively recorded, so that the teachers can refer to the whole process data when summing up and improving the teaching work, the students can also continuously select and try to determine the most suitable personalized learning process for them. It should be pointed out that teachers as an important role in the classroom, they can be freed from many transactional tasks in the past classroom teaching, and they can completely focus on the core teaching work, better understand students, evaluate students, guide students, thus fully implementing personalized English teaching. Therefore, under the support of cloud computing, students can better learn, and teachers can do more creative work.

4. Construction of Foreign Language Teaching Platform based on Cloud Technology

By formulating resource sharing strategies in the cloud, users can easily publish or share teaching materials and spread them within a controllable range; moreover, all users can obtain the advantages brought by new teaching materials, solve the disadvantages of the uncontrollable time lag caused by the previous distribution, and facilitate accurate quantitative analysis of users' use for teaching resources. Various teaching information can be archived to a unified database in real time, so it is possible to obtain first-hand teaching information in time. Based on abundant objective information and its quantitative description, teachers can build professional data mining tools, and modern data analysis techniques can be fully utilized to carry out a complete teaching effectiveness evaluation, thereby overcoming the natural defects, such as relying solely on examination score

comparison or questionnaire surveys in the past. Moreover, based on the mining of teaching data, teachers can continue to promote teaching effects.

Based on the cloud computing platform, each student's learning situation is objectively and truly recorded in the system log library. Therefore, through the above data mining platform, the teachers can deeply analyze each student's learning characteristics and laws, thus formulating personalized learning plan and use teaching resources that match their actual needs. The cloud computing environment make rich foreign language teaching methods and resources to reach every place covered by the Internet, therefore, students and teachers can communicate more fully and freely with foreign language, which is conducive to promoting the improvement of teaching effects. Moreover, this convenient communication also lays a good foundation for the future university foreign language teaching resources to be opened to the society and lays a good foundation for diversified foreign language teaching methods.

The design of foreign language learning platform based on cloud computing should combine the characteristics of foreign language mobile learning, take cloud computing technology and mobile Internet technology as technical support to meet the requirements of students and teachers for foreign language learning, and improve the students' foreign language learning efficiency and self-learning ability in foreign language learning. The design of foreign language learning platform based on cloud computing integrates the school's teaching resources and manage according to requirements of students and teachers, provide an intelligent network platform for teachers and students' teaching and learning, provide students with convenient conditions for querying and acquiring foreign language resources.

The construction of foreign language learning platform must adhere to the principles of standardization and standardization in order to realize the exchange and sharing of resources. The core content of foreign language learning platform must be collected, sorted, processed and developed by professionals so ensure the timeliness and long-term effectiveness of the teaching resource database. First of all, we must establish standard teaching resource database data standard, select elements of more common resources, and construct teaching resource evaluation standards to facilitate user screening, query, evaluation, etc. Second, we must establish teaching resource platform management system, unify the display interface, and display resources in the form of website. Users can search, browse, and download resources according to their authority, and can use the teaching resource library platform for real-time interaction.

5. Conclusion

The foreign language teaching platform based on cloud computing can meet the personalized learning requirements of users, by establishing open cloud resource center, the integration of teaching resource application and data sharing can be effectively realized, which improve the utilization rate of teaching resources. Cloud computing is a new model for the development of computer technology; its emergence has injected new vitality into the integration of foreign language teaching resources, cloud education has not yet become the mainstream in the field of education, however, with the development of cloud technology, foreign language teaching platforms based on cloud computing environment will play a greater role.

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Study on the Innovation of Contemporary Internet Media Literacy Education

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Abstract. The 21st century is a digital age in which the Internet is popular. The rapid development of the Internet provides unparalleled advantages and opportunities for integrating and unifying information in various disciplines and social and culture life. At the same time, the Internet, known as the "fourth media" after the three traditional media of newspapers, radio and television, also has a series of flaws such as plagiarism, insufficient credibility, lack of intellectual property protection, and overflow of spam. At present, as an important audience of online media and online culture, young college students should have the media self-control ability to resist the intrusion and penetration of bad culture under the intensive coverage of immediate, massive and wide-area network information. And the ability to create and disseminate health values and information in media applications, has become an important consideration for the quality education of contemporary college students.

Keywords: Internet, Media Literacy, Education.

1. The Inheritance and Transformation of the Definition of Media Literacy

Media literacy education can be traced back to as early as 84 years ago. The Teacher Recommendation Manual published by the London Board of Education in 1929 specifically set up teacher training programs for boycotting vulgar movies. After that, the education concept of media literacy was introduced by the Institute of Journalism of the Chinese Academy of Social Sciences and applied to China's media education theory and related practice systems. In the current context of Chinese media, the origin and prosperity of the Internet profoundly affect the content and paradigm of media literacy education. In the research process of the definition and evolution of media literacy, the author believes that it is necessary to incorporate online media literacy education into the basic media literacy education plan.

The literacy index of media literacy has been innovated and unified by relevant scholars at home and abroad. The connotation of media literacy has undergone many revisions and innovations, mainly because of three obstacles to making an accurate and complete definition of media literacy: one is that media literacy education has certain influences with the influence of science and technology on the era of media materials variable space; second, the concept and method of media literacy education have subjective influencing factors depending on the educator's own cultivation, level and experience; furthermore, regional and cultural factors are also reflected in the research and practice of media literacy education on a global scale with different geographical restrictions and the control of cultural values. It is also difficult to easily set uniform applicable standards for the connotation of media literacy.

In the development of media literacy education in China, there have been many reintegration's and revisions to its definition. Scholars in related fields each gave their own views based on their own research directions. After careful consideration of the different definitions, the author believes that different definitions of media literacy only have different analysis angles and focus on the direction of differentiation. In terms of the core level and basic scope of media literacy, there is no fundamental differences. After comparison and synthesis, the author is willing to tentatively define the meaning of media literacy as follows: Media literacy refers to people's ability to interpret, create, and disseminate various forms of media information, including critical and constructive sharing and use The personal consciousness of mass communication resources and the active control of media

information and media means make it more conducive to perfecting oneself and serving the personal qualities of society.

2. The Necessity of Media Literacy Education

2.1 The Content of Internet Media Literacy Education

A router and a few network cables can let everyone in a dormitory go online at a low price. Some universities and even the entire campus can wirelessly access the Internet, which provides more convenience for college students to surf the Internet. According to the data disclosed in the "2004 Research Report on Chinese College Students' Consumption and Lifestyle" jointly released by the Communist Youth League, the National Association of Students and relevant market monitoring agencies, online media has gradually become the preferred medium for the contemporary Chinese college student population. In comparison with other traditional media, the contact rate of online media occupies the top position among college student audiences, at 83.3%, higher than that of newspaper and periodical media, 80.7%, broadcast media, 55.9%, television media, 37.4%, and theaters, 33.4%. This figure clearly shows that online media is playing the most important role in influencing college students' information acquisition and dissemination.

First of all, the basic content of media literacy education has evolved from the traditional training of media users' language and text capabilities to the training and application of multiple media information integration methods including text processing capabilities. For example, the ability to accept and disseminate video and audio information.

Secondly, media literacy education in the Internet age requires that individuals not only be able to read and write the information they face, but also whether the media users can use new technical means to give formal symbols with meaning coverage and accurate, artistic communication of their connotations. A new training paradigm is proposed. For example, in the context of network communication in the age of image reading, although the signifier of the picture itself is limited, it may be re-emerged through the re-editing and modification of network animation means, and the unique language style of the network media new meaning and communication value.

2.2 The Necessity of Media Literacy Education

Proficiency in the use of online media and traditional media to receive and create information instantly and efficiently has become a necessary quality for generations, especially college students. Corresponding network media literacy education must also be preferential and reformed according to different media literacy aspects. Here, the author is willing to cite the three basic types of media literacy classified by the American scholar Joshua Merovitz in 1998 in his book to make an investigation on the corresponding media literacy education. Joshua Merovitz divides media literacy into three aspects: content literacy, grammatical literacy, and media literacy. From these three aspects, the research on the innovation direction of online media literacy education should be comprehensive and targeted. The current network media literacy education for college students presents complete and reasonable analysis and suggestions.

The vigorous posture of the Internet has also attracted the attention of academia. At the 7th National Conference on Communication Studies, many participating scholars proposed to make a correct positioning for the increasingly important influence of online media. Some scholars believe that the online media has evolved into a brand new world of human information and cultural communication, and even the level of spiritual communication relative to the real world. This positioning has surpassed the "fourth media" after the three traditional media. The direction of the status becomes a media type with a spiritual interaction paradigm independent of the media classification based on the actual material carrier.

Although the online media has unparalleled advantages, the inherent liberalism and lack of effective supervision also put forward the corresponding media literacy requirements for the audience and the spreaders. Especially today, when the marginalization of the role of "supervisor" in online information is serious, college students are required to possess media judgment ability,

self-control ability and construction ability in order to resist the misleading of poor online information and spread a healthy culture. Therefore, educating youth groups, especially college students, on online media literacy is not only related to the value baptism received by the young generation, but also related to the context of social values and the trajectory of cultural development. It is a long way to go.

3. The Innovation of the Content and Paradigm of Network Media Literacy Education

With the development of online media, the connotation and extension of "media literacy" has also produced new directional content. Nowadays, every individual is more and more integrated into the network media information vortex. The network media has increasingly shown its own massive and instant information processing advantages, becoming an information acquisition channel and a communication channel that are gradually inseparable from individual life. Possessing a good online media literacy not only enables individuals to collect and filter out the most effective and accurate information from the complicated network media, but also enables individuals to use the network to create media information more handy, and at the same time helps individuals spread the correct Values and ethics.

The popularity of the use of network media stems from the large-scale popularization of the Internet and the rapid development and update of network terminals. The arrival of the 3G era allows every information recipient and communicator to interact with the network media as they please. The network media is changing In view of people's lifestyles and production methods, it also puts forward new paradigm expansion requirements and content innovation opportunities for media literacy education.

3.1 Content Literacy Education of Online Media

Content literacy refers to the basic content such as text information, sound information, picture information, and video information presented by network media. Literacy education in this area requires students to be able to analyze the network information interpreted by the media for value cognition and structure, judgment and screening, as well as systematic understanding of the behavior patterns and consciousness patterns in news program production and advertising program production.

Education in this area should focus on cultivating the ability to analyze and integrate network media information and objective judgment. The main reason is that the online media can provide massive and rich information to display hot spots in a panoramic and three-dimensional manner. However, behind the massive information, there are the characteristics of inferior information flooding and the emergence of false information. University students need to improve their language logic ability and clarity. Only from the standpoint of value can we get rid of hypocrisy and save the truth, so as to realize free voyage in the true sense in the ocean of information. According to the research of James Miller, a scholar at the University of Michigan in the United States: when the information contacted by an individual exceeds the limit he can deal with, the excessive bombing of the information will cause a fragmented scene, and it will be difficult for the individual to maintain an orderly information collection and distribution capability. This also requires college students' online media literacy education to keep up with the pace of content updates and keep up with the pace of information evolution.

3.2 Grammar Literacy Education in Online Media

Grammatical literacy refers to a unique set of language rules and techniques that the online media uses to deliver content. Such as the various communication methods, website characteristics and interactive processes included in the online media, in the contemporary Chinese network environment, Weibo, WeChat, Renren and various forums have their own unique grammar rules and operating characteristics It focuses on the acquisition methods of network information in

different directions. Especially as a kind of self-media, Weibo marks that individual voices are greatly freed in the post-modern context. Individuals have gradually become a channel unit for information release, greatly expanding the terminal value of network media and providing individuals with Limited voice space and opportunity.

In addition, the flowmeter algorithm in the era of network media has prompted people to gradually change from relying on text information to over-reliance on pictures, audio and video information. Whether this phenomenon has weakened the audience's ability to analyze and integrate media information is also a topic that needs to be discussed urgently. However, the use of online pictures, audio and video is undoubtedly an important aspect of online literacy education.

A picture's composition method, light layout, and color meaning can all be used to convey information and emotions; the sound effects, editing rhythm, and narrative techniques in a video can also carry the views and values advocated by the video. In this way, the education of online media literacy includes many artistic methods.

3.3 Media Education of Online Media

Media literacy refers to the objective understanding of the immediacy, mass, wide area, and complexity of the online media itself. This aspect of education has a certain degree of stability compared to the first two aspects. It mainly analyzes and understands the characteristics of the online media itself, so that college students have the ability to compare the differences between online media and other traditional media. Features discover the maximum value of media utilization.

There are many discussions on the current network media literacy education. The author has selected content literacy education, grammar literacy education and media literacy education as three aspects, and made a rough review and summary of the concept and direction of the network media literacy education. There is no doubt that contemporary society is informational, and the Internet has become an information express for creating a global village. For all audiences, especially contemporary college students, the Internet has become a window for getting closer to the world and understanding the world. The education of online media literacy is helpful to polish and clean this window of information, so that people can see a healthier , more real world.

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Research on Ebbinghaus's Learning Curve

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Abstract. Memory function is a popular area in cognitive psychology research during recent years. In this paper, I analysis Ebbinghaus' experiment and the result: learning curve. In his experiment, Ebbinghaus makes comparisons between the different sets of data that he had collected and tested the correlations between the different elements. Also, the researcher compared the time required for recalling nonsense syllables with the time required for recalling the stanzas of Bryson's "Don Juan" and discovered that it required much more time and effort to memorize the nonsense syllables than poetic stanzas. The result shows that relearn things repetitively will help people to better memorize it. The study also suggests that the meanings of the content can contribute to people's memorization of the content. For students, reviewing in-class content repetitively and understanding the meaning of learned information can be conductive to the memorization of the acquired knowledge.

Keywords: Memory Psychology, Ebbinghaus Forgetting Curve, Improvement of Memorization.

1. Introduction

Memory psychology is a core area of cognitive psychology research. Over a hundred years ago, a groundbreaking experiment was done for the study of human memory. The experiment was done by a German psychologist named Hermann Ebbinghaus in Germany during two periods of time. One began from 1879 to 1880. The second period started from 1883 to 1884. The researcher intended to discover the relations between the loss of the ability to reproduce information and the length of time in which no repetitions about the information have been made. Ebbinghaus experimented by himself and on himself. He created a set of words made of nonsense syllables and was trying to memorize these series of words. Throughout his work, "Ebbinghaus memorized over 2,000 [of these] nonsense syllables, and he "called each presentation of nonsense syllables a trial" (Dewey). Ebbinghaus's study was trying to reveal how the number of repetitions and the certainty of reproduction are related. Additionally, Ebbinghaus pointed out that the variations of these relations regarding memory and the loss of it were still unknown before his study (Ebbinghaus, 1885). One of the most fundamental analysis in the research was the discovery of the curve that indicates the relation between the percentage of information being recalled and the time without repetition of the information. The curve was later named the "Ebbinghaus forgetting curve", and it demonstrates that people tend to forget about the information learned at a faster speed initially after their acquisition of the information; however, the speed of such losses of learned information would then decrease as time goes by. Many subsequent pieces of research support the result of Ebbinghaus' research. For instance, Murre and Dros performed a replication and analysis of Ebbinghaus' curve affirmed that the results derived from Ebbinghaus' research have high soundness (2015). From this experiment, people learned that reviewing the information moments after learning would be crucial if we want to store the information better in our minds so that we can recall it more easily in the future.

2. Ebbinghaus Forgetting Curve

The memory function takes a significant role in daily life. The two major parts of memory are explicit memories and implicit memories. Explicit memories include semantic contents and episodic events that are encoded through effortful processing with consciousness; they are mainly stored in the frontal lobe and hippocampus. Recalled passwords, remembered a visual scene, or associated names with faces are examples for explicit memories. Implicit memories are created by automatic

processing such as classical conditioning, which happens without consciousness. Implicit memories include procedural memory such as learned skills and classical conditioned associations. The cerebellum and basal ganglia play a key role in forming and storing implicit memories. In Ebbinghaus' research, the learning thing is nonsense syllable; since it needs to encode and memorize with consciousness, remembered nonsense syllable is stored in explicit memories. An important conclusion of this research is that people appear to forget about a great portion of learning information moments after the acquisition of the information. Nonetheless, learning the information repetitively tends to help people to better memorize it. Another concludable remark is that, when the content is larger, people tend to need more time and attempts to memorize it. The study also suggests that the meanings of the content can contribute to people's memorization of the content. Therefore, as a student, reviewing in-class content after attending lectures can be conducive to the memorization of the recently acquired knowledge. Also, the researcher compared the time required for recalling nonsense syllables with the time required for recalling the stanzas of Bryson's "Don Juan" and discovered that it required much more time and effort to memorize the nonsense syllables than poetic stanzas. Furthermore, it might be helpful for people to memorize certain information if they associate it with "meanings" and/or something that embeds their interests.

3. The Application of Ebbinghaus Forgetting Curve

There are different ways people can use the learning curve to increase their memory function. First, they need to ensure that they clearly gain the concepts they are learning. This implies that they would not be in a hurry to learn that concepts but would take time and use all the methods they need to use to ensure that they understand the concepts best. Though the curve does not explain how one can gain maximum knowledge about something, the arguments are that people should gain concepts clearly because if a concept makes sense to them, it will be harder to forget compared to concepts that do not make sense. People would maybe ask someone to explain to them or use different material to understand the concept as deeply as they can.

This would ensure that people's forgetting curve would be shallower than when they learn concepts quickly. The second way is to overlearn the concepts. For example, if they are learning a process, they must try to explain it as many times as possible. If their learning is academic purposes, then they would try to answer and many questions as possible related to the concept. Overlearning helps the concept be engraved better in the memory thus harder to forget than concepts one understood but did not invest in it further (Busch 71). If it's for personal consumption, they would learn about related concepts and how they are interconnected.

People would use mnemonics to increase their memory. Mnemonics help summarize large concepts into a short summary that can be easily remembered compared to paragraphs of explanations. Additionally, they would repeat the concepts am learning several times to ensure the concepts register in their mind better. By doing this, the rate of forgetting these concepts would be slower than one who tries to memorize a whole junk of information. Students would constantly review their notes to refresh their memory about what they learned. During the first days, they would want to do it more often like twice a week. After the first month, they would review the concept once a month. During the first days, the rate of forgetting is high and frequent review reduces the rate of forgetting (Agarwal and Bain 23). After some time, the rate decreases implying they can increase the time that they take between reviews.

The mind has a better memory for things that are more concrete than abstract and what is part of its everyday life (Bybee 76). Learning things by meaning makes it easier for one to understand the context of concepts and other related elements of the concept. For example, if they were learning about homeostasis, a conceit in biology, by understanding homeostasis as the concept it would be easier to understand and memorize related concepts like thermoregulation and osmoregulation and role played by different organs like kidney, liver and skin in homeostatic functions. By learning the characteristics of an element or something, it becomes easier to relates these characteristics with the function and other things one needs to memorize about the concept. Understanding the

characteristics helps to clarify contrasting concepts (Busch 89). For example, using the same example homeostasis, when learning the role of the kidney in osmoregulation, it's important to understand the structural characteristics of the nephrons. Then one would relate the structural features to what happens at each part of the nephron. It's therefore easy to memorize how the kidney helps in osmoregulation by knowing the parts of the nephron. Knowing the characteristics helps relate the features with other concepts (Busch 45). A student who does not understand the structure of the nephron in the kidney have difficulties memorizing how the homeostatic process in the kidney or other concepts they are learning.

4. Conclusion

In this research, I focus on how to use the learning curve to improve memorization of acquired information. I analysis Ebbinghaus' experiment and other researchers' results that related to Ebbinghaus' learning curve to gain the conclusion. To improve memory, people can review things repetitively after learning the concepts. Also, related learned information to the meanings help people to memorize better since people tends to memorize concrete things better. Another concludable remark is that, when the content is larger, people tend to need more time and attempts to memorize it. Using mnemonics would help people to memorize large junks of things faster.

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Research on the Reform of Accounting Course under the Background of the Development of Artificial Intelligence

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Abstract. The rapid development of modern information technology has promoted the emergence of new industries and new forms of business. New technology has gradually penetrated into production and life and changed people's life and work style. By studying the influence of AI on accounting service industry in depth, breadth and development characteristics, we can directly reveal the impact of accounting service industry. In view of the inevitable trend of the function transformation of accounting service practitioners brought about by the development of artificial intelligence and Internet, starting from the demands of enterprise accounting practitioners in school education and vocational training, this paper studies the innovation path of educational initiative and talent training mode in Colleges and universities, and relies on the accounting curriculum reform to solve the shortage of high-level talents in the development of accounting service industry under the development of artificial intelligence Problem, this has certain practical significance.

Keywords: Artificial Intelligence; Accounting Service Industry; Curriculum Reform.

1. Introduction

With the rapid development of science and technology, the penetration of new information technology in various fields is speeding up, and the development of some emerging industries has increasingly played a supporting and driving role in economic development. With the rapid development of artificial intelligence, the pace of new labor robots replacing the traditional artificial labor is speeding up. In the process of science and technology changing people's work and life style, the education of colleges and universities and the re education mode of employees need to keep pace with the times, adapt to the change of talent demand of enterprises, and constantly carry out reform and improvement.

2. The Impact of the Development of Emerging Industries on Employees

The rise and development of some new forms of business has played a more and more significant role in promoting China's economic development. For example, the diversified forms of business supported by Internet technology have developed rapidly all over the world, which makes the demand for talents in different positions of enterprises have also changed greatly. With the development and application of science and technology and big data, the demand of traditional financial accounting practitioners will gradually reduce or even not, and management accounting, which focuses on "creating value" for enterprises, will become the main talent demand object of enterprises. There is a great possibility that some work of accounting practitioners will be replaced by artificial intelligence in the future. Moreover, the supply of middle and low-end accounting personnel is greater than the demand, high-end talents are in short supply, and the future planning objectives of accounting service practitioners have changed. In 2017, according to a report released by national public radio, the probability that the profession of accountant and auditor will be replaced by robot in the next 20 years is 93.5% .[1]Under the background of Internet plus artificial intelligence, the traditional accountants' working mode and business functions have been greatly impacted. A large number of repetitive, error prone, time-consuming and simple accounting work, such as processing of original bills and accounts creation, can be completed by AI, and financial robots can guarantee efficiency and accuracy. , fast data analysis, some accountants no longer need

to engage in the previous simple business, the structure of the manual business has changed, accounting practitioners will be more engaged in high-end management business.

With the development of science and technology, artificial intelligence is gradually penetrating into the field of accounting. In 2017, Deloitte financial robot has been able to engage in simple accounting work, which means that with the popularization of artificial intelligence, traditional simple repetitive work will not need to be completed manually, and the functions of financial personnel will change. [2] Up to 2015, the proportion of senior professional and technical qualifications of accounting practitioners is less than 1%. Up to now, the supply of senior accounting personnel still can not meet the needs of the society. If the popularization of artificial intelligence is accelerated, the situation of shortage of talents will be more prominent. Therefore, accounting practitioners should take the initiative to constantly learn new knowledge, actively participate in CPA, ACCA examination and other continuous improvement of professional skills, participate in continuing education, otherwise they will face the situation of occupation being eliminated. [3] If the financial function is divided into three parts: Business Internal Finance, functional finance and financial operation, the financial operation involves a large proportion of simple repetitive labor, and the risk of this work being replaced by artificial intelligence is the greatest, but the work of artificial intelligence can improve the experience value of customers. As AI is carried out according to the rules set in advance, it can't fully identify some problematic reimbursements, and there is a blind area of recognition in the collection, therefore, the work functions and division of labor of accounting practitioners will gradually change, mainly in the field of making up for the imperviousness or deficiency of AI. [4] With the rapid development of science and technology and artificial intelligence, the traditional artificial financial accounting will gradually fade out. The employees will mainly be engaged in management accounting. They need to master modern information means, and apply and improve artificial intelligence technology.

In short, with the rapid development of big data and intelligent robots, the scope of some standardized and repetitive manual work replaced by machines will gradually expand. In the future, the change of science and technology will have a huge impact on some traditional jobs, and the proportion of traditional low value-added jobs will be gradually reduced.

3. High End Accounting Personnel Training Strategy

With the popularization of science and technology information technology, the work content of accounting practitioners will inevitably change, but there are certain development rules in it. As practitioners, we need to study the development rules and constantly improve their own skills. Under the development of artificial intelligence, the training of accounting talents needs to consider the coupling relationship between the transformation of work functions and the development of artificial intelligence. Due to the change of technical means in the industry, the working functions within the industry organizations will inevitably change accordingly. However, it takes a certain time to cultivate the accounting service practitioners needed by enterprises. The transformation from traditional accounting practitioners to high-end talents who can use large data for analysis and management of artificial intelligence technology requires more scientific research institutes and institutions of higher learning School, social re education institutions and other actors actively play their respective functions, and design accounting service talents training plans and new models that meet the needs of social and technological development. Therefore, accounting talents need to recognize the professional situation in advance, take the initiative to transform, actively study the impact of artificial intelligence and big data development on accounting service industry, the transformation and path of traditional financial accounting functions, the change of enterprise demand for accounting personnel and the assessment and training. Enterprises, as the demand side of talents, on the one hand, should actively strengthen the professional level training and theoretical learning of accounting personnel, on the other hand, they should actively strengthen the cooperation with colleges and universities, which are the suppliers of talents, so as to ensure that enterprises can smoothly connect the required talents.

First, in the integration of science and education in universities, we should study the penetration and development characteristics of "Internet plus artificial intelligence" in the accounting field. The development of financial robot inevitably requires the accountants not only to master the excellent theoretical knowledge and have rich practical experience, but also to learn the computer programming and maintenance related to artificial intelligence operation. Therefore, it can be said that the emergence of financial robot will bring some changes in the work field, and the task division and work mode of accountants will Great changes have taken place. With the widespread adoption of artificial intelligence technology, accounting service industry can not only complete some traditional business functions, but also process and judge complex transactions more effectively on the basis of big data analysis. The development of the Internet plus mode and artificial intelligence has aroused the attention of accounting practitioners, and has gradually infiltrated into production and life, changing the way people work. The research on the depth, breadth and development characteristics of accounting services can directly reveal the impact degree of accounting services. In the process of personnel training, colleges and universities can improve the teaching and training programs in time and appropriately, to better cultivate talents that meet the needs of enterprises.

Secondly, it is necessary to enhance the attention of employees to the transformation path of accounting service industry. The development of smart finance has both advantages and disadvantages. Accounting practitioners need to re-examine the trend of work content change, actively respond to the change of work content, seek their own advantages and skills, and speed up the transformation of roles and functions. With the rapid development of science and technology and the Internet, the requirements of enterprises for the information processing and data analysis ability of financial personnel must be gradually improved. In view of the current situation that there is a shortage of high-end accounting management talents, the accounting practitioners should start from the functional transformation, and actively participate in different skills upgrading education according to the work differences of accounting personnel in various fields of division of labor. In view of the fields and functions that AI may replace, we should make preparations in advance, and strive to transition from financial accounting to management accounting.

With the development of new business forms and the popularization and application of new scientific and technological means, people have paid more and more attention to the practical problems such as the timeliness of accounting information processing, the suppression of financial information fraud, and the security of accounting information. As the actual operation of artificial intelligence replacing accounting personnel is still in a gradual process, it is also a process to change from the industry change driving the function transformation of accounting service industry employees to the active recognition of position risks for accounting employees, and to actively improve their quality and ability. From the practical point of view, in order to cultivate accounting talents in line with the social needs, it is necessary to further promote the collaborative innovation mechanism between universities and enterprises.

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A Case Study of C Language Programming Teaching based on Computational Thinking

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Abstract. Under the background of the continuous development of information technology, the demand for program design talents is increasing, but the demand for talents is also increasing. In order to be better qualified for the post work, students need to master basic theoretical knowledge and have high practical ability, but also need to have computational thinking, which can solve practical problems from the perspective of abstraction and automation. For realizing this goal, it is very important to apply case teaching method in C language programming teaching and pay attention to the cultivation of students' computational thinking. Case teaching method can make abstract knowledge more concrete; students can also better understand knowledge in the case, and achieve the transfer of programming knowledge.

Keywords: Computational Thinking; C Language Programming; Case Teaching.

1. Introduction

At present, many colleges and universities have offered C language programming courses, but the teaching methods adopted in the course of teaching are more traditional and single. In the process of teaching, teachers usually introduce the data types, operation methods and expressions of C language to students first, so that students have a basic understanding of C language. Based on this, we introduce the language application rules of C language programming to students, so that students can understand the basic methods of program running. In this process, teachers will use examples to explain the way to enable students to consolidate these theoretical knowledges. Finally, teachers will assign exercises to guide students to further consolidate the method of C language programming. Although this teaching method can maintain a good teaching order, students can also systematically learn knowledge, but the students' learning effect cannot be guaranteed, and many students think that this teaching method is boring and boring, and the knowledge learned is easy to be forgotten after a few days. At the same time, students trained in this way cannot meet the actual needs of society. In this context, it is very important to cultivate students' computational thinking, and case teaching method is an important way to cultivate.

2. An Overview of Case Teaching based on Computational Thinking

Computational thinking refers to the ability to use computer science knowledge to solve practical problems. With the continuous development and maturity of technology, computer systems become more intelligent and can better understand human thinking activities and behaviors. In order to make computers more convenient for human production and life, and to provide people with a more intelligent life, people should also be able to understand the "mode of thinking" of computers, understand their "logical order ", and design more applicable systems from the point of view of computer systems, following its language and programs. In the process of solving practical problems, it can be found that computational thinking and mathematical thinking have certain similarities and have strong abstraction. But mathematical thinking emphasizes the close connection between numbers and graphics, and forms the idea of combining numbers and shapes through the logical relationship between them. The computational thinking emphasizes the operation of the problem-solving process and the way of solving the problem by computer. Computational thinking will combine basic mathematical thinking in the process of application, and use computer science knowledge to complete the automatic solution of the problem. In computer courses, it is an important teaching goal to cultivate students' computational thinking. During the course of C language

programming, teachers should make students use computer "language" to guide them to accurately describe problems through specific symbol systems, so that computer systems can better identify symbols and automate the execution of programs.

3. Case Design Principle of C Language Program Teaching based on Computational Thinking

For the better integration of computational thinking into C language programming course teaching, teachers need to make students understand relevant theoretical knowledge through teaching cases. In the process of applying case teaching method, it is important to design reasonable and effective cases. During the process of design, teachers should combine the characteristics of C language programming course, pay attention to the cultivation of students' computational thinking on the basis of emphasizing grammar rules, so that students can really understand the rules of degree writing and code debugging, and can use algorithms correctly. C language programming case teaching design principles are mainly the following three.

3.1 Life of the Topics

C the logic and abstraction of language programming is strong, case teaching can enable students to integrate knowledge into common cases in life, to achieve accurate understanding of knowledge. Therefore, when choosing teaching cases, it is necessary to ensure the life and normalization of the cases, and choose the problems that students are interested in and often encounter in life, which can not only attract students' attention, but also stimulate students' interest in thinking. A field survey found that many students had a bad impression of the C language programming course, which they thought was difficult and difficult to understand. In the process of learning will produce fear, and even self-abandonment. And the selection of life-oriented teaching cases can eliminate this bad psychology of students, so that they can actively think about the solution of the problem. At the same time, teachers should guide students to use computer programs to solve problems and cultivate students' computational thinking in the process of imperceptible change, which can also make students realize the advanced nature of computer programs, understand that computer technology can provide people with a more convenient life, connect C language programming with students' life can eliminate their bad emotions, and also create a good atmosphere in the class to make students realize that C language programming exists in our lives.

3.2 Typicalization of Knowledge Points

In order to make the teaching case better play the role of guiding knowledge learning, teachers also need to fully combine the teaching objectives and teaching contents of the course when selecting the case, so that the case can effectively cover the knowledge points that need to be learned in this class, which has a high typicality. Students only need to solve the problems in this case to master the learning content of this lesson. At the same time, the choice of teaching cases also needs to conform to the students' cognitive ability, which is a common problem in students' life but has not been carefully studied and deeply understood, so that students can be willing to understand the problem deeply on the basis of understanding the background of the problem. At the same time, choosing such teaching cases can also make students better understand the teaching content of C language programming, realize the three aspects of knowledge, and be able to use this knowledge to solve more similar problems.

3.3 Procedures for Problem Proposing and Solving

When choosing teaching cases, teachers also need to fully combine computational thinking so that students can stimulate computational thinking by solving case problems. During the process of case selection, teachers should pay attention to the application of language rules and algorithm knowledge in C language programming, so that students can form programmed problem-solving mode and form computational thinking and procedural thinking in this process. As a result, the boring knowledge of

C language programming can be integrated into the case to be solved by the students, in the process of improving' ability to use C language programming knowledge to solve practical problems.

4. Case Teaching of C Language Programming based on Computational Thinking

During the case teaching of C language programming, it is important and difficult to cultivate students' computational thinking. For the better realization of this goal, teachers need to guide students to realize the transformation of thinking mode in the teaching process, and master the knowledge of C language programming in appropriate cases.

4.1 C Language Programming Theory Case Teaching

C language programming course focuses on programming problems and integrates the language knowledge of C language into the design process. In the process, students still need to memorize and recite a lot of boring grammar knowledge and theoretical concepts.

For students to learn this part of knowledge better, teachers can use the story of wolf, rabbit and radish crossing the river together in class to guide students to think C the operation steps of using algorithms to solve practical problems in language programming. and the three basic forms of the algorithm are introduced on this basis. The first is the life algorithm, which is mainly the algorithm of the basic methods and steps to complete the work. Using this algorithm, we can find out how farmers can cross the river safely with wolves, rabbits and turnips. The second is a mathematical algorithm, which is characterized by mechanization of the problem and a unified solution method, such as using this algorithm to calculate the area of different graphics. The third is the computer algorithm, which is characterized by the computer program to achieve accurate description of the problem-solving process, and can achieve automated operations. For example, this algorithm can be used to achieve 1 to 100 accumulation. During this process, computational thinking can be introduced to make students understand that computer algorithms need to use symbols and languages that can be recognized by the computer, and then introduce the concept of C language. Guide students to C signs, variables, statements and program segments in language programming.

4.2 C Language Programming Experiment Computerized Case Teaching

After mastering the basic theoretical knowledge, students also need to learn C language programming from the perspective of practice, and exercise their own computational thinking in the course of experimental computer. During this process, teachers need to exercise students' C language application ability through relevant teaching cases, and at the same time create good conditions for students' independent innovation. In the course of teaching, the teacher should guide the students to express the process of solving the problem in a programmed way, describe the solution of the problem with the algorithm according to the theoretical knowledge learned, and carry out the program through the machine in practice to test the accuracy of the problem solving. For example, when calculating the personal income tax problem, students can consult the personal income tax payment regulations, then write out the mathematical formulas of the tax rate payment under different wage levels, then use the branch structure algorithm to describe these formulas, and finally enter into the computer system to verify the operability of the formula. At the same time, in order to better cultivate students' innovative ability, teachers can design experimental problems of interest to students and integrate computational thinking into them. For example, when learning circular sentences, teachers can introduce the "hundred chicken problem ", which needs to be solved mathematically by the method of infinitive equation, and after learning the programming of C language, they can use computer algorithm to solve the problem quickly, and students can use the repeated operation of exhaustive algorithm to solve the problem. In addition, in this process, teachers also learn to fully feel the difference between computer algorithms and manual information processing, such as when judging whether integers are prime or not, the algorithm will first find out all the prime numbers in 3-100 and

output, then sum the non-prime numbers, and finally use the summation open root way to output the results.

4.3 Procedures for Problem Proposing and Solving

When choosing teaching cases, teachers also need to fully combine computational thinking so that students can stimulate computational thinking by solving case problems. During the process of case selection, teachers should pay attention to the application of language rules and algorithm knowledge in C language programming, so that students can form programmed problem-solving mode and form computational thinking and procedural thinking in this process. As a result, the boring knowledge of C language programming can be integrated into the case to be solved by the students, in the process of improving' ability to use C language programming knowledge to solve practical problems.

5. Summary

Generally speaking, in the course of C language programming, it is necessary to use case teaching method to cultivate students' computational thinking. During the selection of teaching cases, teachers should follow the principles of life, typicalization and procedure, choose interesting cases with good teaching effect, and guide students to transform their thinking in theoretical teaching and experimental teaching, so as to better understand the characteristics and methods of C language programming.

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The Application of Discovery Teaching Method in Three-stage Dividend Discount Model Teaching

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Abstract. In this paper, the discovery teaching method is applied to the teaching of the three-stage dividend discount model in the dividend discount model. Combined with the relevant theories of the discovery teaching method, the differences of students' learning process and learning effect under the traditional chalk and talk teaching mode and the discovery teaching method are discussed, which shows that the discovery teaching method can promote students' understanding and grasp of theoretical knowledge of finance, and improve the ability of autonomous learning and independent thinking.

Keywords: Discovery Teaching Method; Three-stage Dividend Discount Model.

1. Introduction

As a teaching method in a real sense, discovery method is put forward by Bruner, an educational psychologist, in the book Educational Process. He thinks that discovery method, as a teaching method, is aimed at teachers, which is a teaching method referring to under the guidance of teachers, students find and grasp the corresponding principles and conclusions by independent inquiry and active thinking of facts and questions. The "discovery learning" advocated by Bruner is also called "inquiry learning", which is a method that aims at cultivating inquiry thinking methods and takes basic teaching materials as content to enable students to learn through "re-discovery". The teaching applied with discovery method is called discovery teaching.

In accordance with the characteristics of discovery learning, Bruner puts forward the steps of discovery teaching method. On this basis, some latter scholars combine the practical teaching to summarize the general procedures of discovery teaching method. Liu Qiang (2003) [1] thinks that discovery teaching method is a kind of inquiry teaching mode in his New Discussion on Ideological and Political Subjects Teaching, and proposes that discovery teaching method should be divided into four basic steps. The is first step is to create the problem situation. The teacher puts forward the problems to be solved or studied to the students, which may be concepts, principles, or difficult problems, to arouse the students' desire to explore and clarify the goal or center of discovery. Second, students put forward hypotheses or answers. On the basis that teachers provide students with materials or facts that are helpful to solve problems centering on problems, students study independently by reading relevant textbooks, referring to related books, observing, experimenting, thinking, discussing, listening to lectures, etc., and find out by themselves and make one or several possible hypotheses or answers to the questions raised. The third step is to test the answers or hypotheses. Students use analytical thinking to test the answers or hypotheses in theory or in practice. If there are different views among students, they can carry out debate; The fourth step is to make conclusions. On the basis of full verification and discussion, the teacher assists and guides students to compare, modify and supplement the answers and hypotheses, so as to draw necessary conclusions.

In recent years, discovery teaching method has been widely used and studied in China. Chinese scholars have different definitions of discovery teaching method. Zhang Weixian (2006) [2] puts forward the ways to implement discovery teaching method, including giving full play to teaching evaluation function, cultivating students' exploration consciousness, highlighting the main position, allowing students to participate in the whole process of discovery, giving full play to teachers' leading role and infiltrating thinking methods. Pang Yong et al. (2017) [3] introduces in detail the specific implementation process of discovery teaching method in the "Signal and System" course teaching through two typical teaching examples, and summarized a set of generally operable specific methods.

Qiao Ximin (2016) [4] starts from the idea and point of view of discovery teaching method, and creates a teaching situation based on the interesting materials of the development history of linear algebra, to make students understand the process of discovery learning and discovery teaching.

2. Discussion and Comparison

2.1 Traditional Chalk and Talk Teaching Mode and Discovery Teaching Method

The three-stage dividend discount model is one of the dividend discounts models, as well as one of the more difficult models in the dividend discount model. It is difficult for students to understand and grasp the model. When referring to the three-stage dividend discount model, the author boldly uses the discovery teaching method. Under the guidance, students' ability to think and solve problems independently has been improved, and their grasp of the theory has also been lifted.

Traditional chalk and talk teaching mode

The traditional chalk and talk teaching mode usually start directly from the teaching materials, throws out the knowledge points directly, informs the related concept knowledge directly, and does not provide the space for the students to think. For instance, when the textbook introduces the three-stage dividend discount model, it introduces in the following steps.

The first step is to introduce the concept and application of the three-stage dividend discount model.

There are three different stages of dividend growth: the first stage (period A): the dividend growth rate is a constant (ga); the second stage (A+1 to B-1): the dividend growth rate changes from ga to gn in a linear way, and gn is the dividend growth rate in the third stage; the third stage (B to forever): the dividend growth rate is also a constant (gn), which is the normal long-term growth rate of the company.

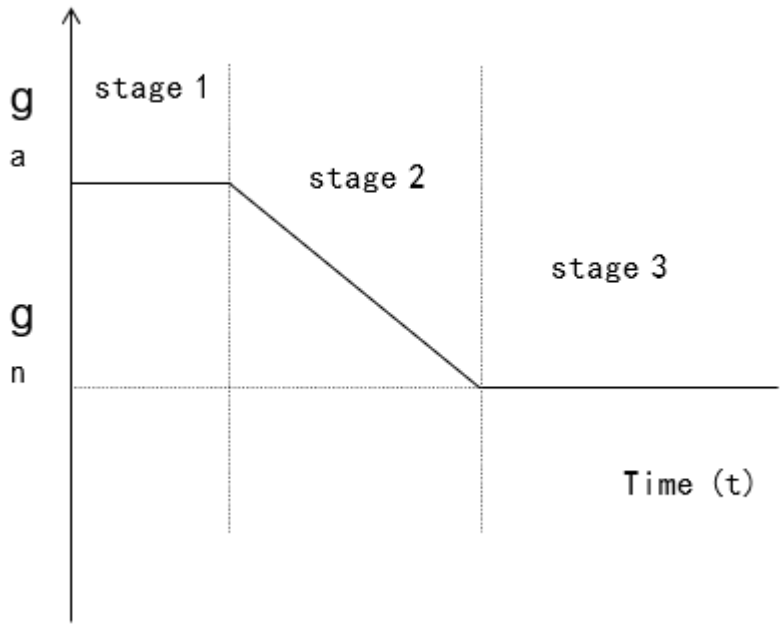

Fig. 1 The three-stage dividend discount model

In the second step, the formula of the three-stage dividend discount model is given.

$$V = D_0 \sum_{t=1}^{A} \left(\frac{1+g_a}{1+y}\right)^t + \sum_{t=A+1}^{B-1} \frac{D_{t-1}(1+g_t)}{(1+y)^t} + \frac{D_{B-1}(1+g_n)}{(y-g_n)} \cdot \frac{1}{(1+y)^{B-1}} \quad (1)$$

It can be seen from this that when the textbook introduces the three-stage dividend discount model, it directly throws out the formula after elaborating the relevant concepts, does not lead the students to think step by step, and directly indoctrinates the knowledge passively to the students. It is not hard to imagine the students' understanding and grasp of the model.

2.2 Discovery Teaching Method

The three-stage dividend discount model is a relatively theoretical knowledge point. In order to let students better grasp the theory, enhance students' interest and enthusiasm in learning, and be able to learn new knowledge and concepts independently from independent thinking and problem-solving, the author uses the discovery teaching method when teaching the knowledge point. In the following, the teaching practice of the three-stage dividend discount model will be taken as an example, and the design and implementation process of discovery teaching method will be specifically introduced.

2.2.1 The Knowledge Points that Students should Master before Teaching the Three-Stage Dividend Discount Model

Before teaching the three-stage dividend discount model to students, there are two main knowledge points that students should master: first, in the previously-taught dividend discount model, the income capital method is used to calculate the intrinsic value of stocks, that is, the income capitalization method believes that the intrinsic value of any asset depends on the present value of the future cash flow income that the assets may bring.

$$V = \frac{D_1}{(1+y)} + \frac{D_2}{(1+y)^2} + \frac{D_3}{(1+y)^3} + \cdots = \sum_{t=1}^{\infty} \frac{D_t}{(1+y)^t} \tag{2}$$

Among them, V represents the intrinsic value of common stock, Dt is the dividend and bonus expected to be paid in the t period of common stock, and y is the discount rate, also known as the capitalization rate.

The other is the constant growth model in the dividend discount model.

$$\mathrm{V} = \frac{\mathrm{D}_0(1+g)}{y-g} \tag{3}$$

2.2.2 The Creation of Problem Situation

Let's firstly look at an example of a three-stage dividend discount model: a stock pays a dividend of $1 per share at the initial stage, with a discount rate of 8%. in the next two years, the dividend growth rate will be 6%. The dividend growth rate will decrease progressively from the third year and maintain a growth rate of 3% every year from the sixth year. What is the intrinsic value of the stock?

Next, based on this example, the example will be divided into three problems to create the following three problem situations, for the sake of guiding students to use the income capital method they have grasped to solve problems independently, so as to independently discover and have the command of the new knowledge of three-stage dividend discount model.

The initial dividend paid on a stock is $1 per share, with a discount rate of 8% and a dividend growth rate of 6% in the next two years. The sum of the present value of the first and second year's cash flow of the stock are requested.

The dividend paid in the initial stage of a stock is $1 / share, with a discount rate of 8%. The dividend paid in the initial stage of a stock is $1 / share, with a discount rate of 8%. The dividend growth rate in the next two years is 6%. The dividend growth rate starts to decrease progressively from the third year, and maintains a growth rate of 3% every year from the sixth year. Please calculate the dividend growth rate of the stock in the third, fourth and fifth years, as well as the sum of the present value of cash flow of the stock in the third, fourth and fifth years.

The initial dividend paid on a stock is $1 per share, with a discount rate of 8%. In the next two years, the dividend growth rate will be 6%. The dividend growth rate will decrease progressively from the third year and maintain a growth rate of 3% every year from the sixth year. What is the value

of the cash flow generated by the stock after the sixth year in the fifth year? What is the current value (present value)?

2.2.3 The Students Make Hypotheses and Analyze and Solve Problems Independently

As for the first question, students can use the capital income method (formula 2) to calculate the sum of present value of the first and second year's cash flow of the stock in the future according to their knowledge.

$$V = \frac{1\times(1+6\%)}{1+8\%} + \frac{1\times(1+6\%)^2}{(1+8\%)^2} \tag{4}$$

As for the second question, the idea of students' independent analysis is: to calculate the dividend growth rate in the third, fourth and fifth years of the stock. The principle that the corresponding sides of similar triangles are proportional can be used to obtain gt according to figure 1.

$$g_t = g_a - (g_a - g_n)\frac{(\text{t - A})}{(\text{B - A})} \tag{5}$$

Then g3, g4, and g5 can be obtained by bringing the relevant data in. Finally, the present value sum of cash flow in the third year, the fourth year and the fifth year can be calculated by formula 1.

As for the third question, students can analyze that the dividend growth rate of the stock will remain unchanged after the sixth year according to the constant growth model grasped in combination with the problem situation. After the sixth year, it can be regarded as the constant growth model. With formula 3, the value of the cash flow V5 generated after the sixth year in the fifth year can be calculated:

$$V_5 = \frac{D_6}{y-g} = \frac{D_0(1+g_n)^6}{y-g} = \frac{1\times(1+3\%)^6}{8\%-3\%} \tag{6}$$

Then, formula 1 is used to find the present value of the cash flow generated by the stock after the sixth year:

$$V_0 = \frac{V_5}{1+y} = \frac{V_5}{1+8\%} \tag{7}$$

When students solve the above three problems through independent thinking, teachers can further guide students to discover new concepts and knowledge through the above problem situations. At this point, the teacher re-raises the following questions: by answering the above three questions, now assuming that the dividend growth rate of a stock has gone through three stages of change, can the sum of the present value of the cash flow generated by the stock in three stages be deduced?

In order to solve this problem, students will make general hypotheses based on the above questions, including how much is the dividend growth rate in the first stage, how does the dividend growth rate change in the second stage, how much is the dividend growth rate in the third stage and what are the turning points of the three stages. Then, on the basis of the experience of solving the above three problems, the students will deduce formula 1, namely the three-stage dividend growth model.

2.2.4 The Hypothesis Verification

A couple of students can be invited to the platform to write the results of their independent analysis of hypotheses on the blackboard, and then explain to everyone. The main content of the explanation is the process of analysis and deduction and what new knowledge and concepts are found. Finally, other students are required to ask questions and extend discussions.

2.2.5 The Teacher Evaluation and Summary

First of all, teachers should affirm students' efforts to solve problems by making hypotheses and thinking independently, and encourage students to dare to express their opinions. Finally, teachers should evaluate the results of students' hypothesis verification. If the result is consistent with the knowledge points of the textbook, for instance, the three-stage dividend discount model deduced by

students after independent hypothesis analysis is consistent with formula 1, they should be praised. If the result is not correct, it is necessary to help students correct the mistakes in time, and encourage them to try to solve the problem again, so as to strengthen their grasp of new knowledge points.

3. Conclusion

By taking the three-stage dividend discount model teaching as an example, this paper discusses and analyzes the steps of the discovery teaching method. It can be seen that in the process of the implementation of the discovery teaching method, the roles of teachers and students are different. Students mainly perform analysis, discovery, and communication, who are the main body of the teaching process, while teachers are the organizers.

In the process of implementing discovery teaching method, students are more active in thinking about problems, dare to discover and actively discuss. This kind of teaching method can greatly improve their learning enthusiasm and efficiency. Students really learn to study autonomously, research independently and find problems constantly, and their ability of independent learning and thinking is improved. A teacher of finance specialty should not only impart the theoretical knowledge of finance to students, but also let them gain command of the thinking process of financial theory. In the process of teaching, how to discover knowledge should be emphasized, letting students gain self-confidence and motivation in discovery learning, learn to think independently, and become the masters of learning, so as to promote students' understanding and grasp of the theoretical knowledge of finance, who will flexibly use the theory of finance to solve practical problems, and improve their thinking and practical ability.

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The Curriculum Reform and Exploration of "Single Chip Microcomputer" based on Post Demand Cultivation -- A Case Study of Guangzhou Nanyang Polytechnic College

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Abstract. The application of single-chip microcomputer technology in teaching and the promotion of technology in the industry is still a hot spot in the development of science and technology. But the course is still "two skins" in talent training and talent demand. In accordance with the characteristics of the integration of industry and education in the training of talents in vocational colleges, this paper puts forward the reform and implementation plan of SCM application technology course from the perspective of the training of talents in the position demand of cooperative enterprises.

Keywords: Two Pieces of Leather, Production and Teaching Integration, Job Demand.

1. The Background of Curriculum Reform

This course has been offered in various majors of mechanical and electrical engineering for nearly ten years. However, according to the employment data of graduates of relevant majors and the employment tracking of graduates, only a few students have been engaged in SCM technology-related positions after graduation. At present, the process of MCU teaching focuses on the knowledge structure of the course itself, focuses on systematicness and integrity, and more on the declarative knowledge of the course, such as teaching internal structure, C language design, and typical case analysis [2]. The whole teaching process seems to be perfect, but in the whole teaching process, the specific skills that the talents need to master are not fully considered from the industry, resulting in a huge deviation between the demand side of talents and the supply side of talents. In general, based on the current job demand in the industry and the actual situation of our school, there are mainly four problems in the teaching process of "single chip microcomputer".

2. Current Situation and Existing Problems of Course Teaching

This course has been offered in various majors of mechanical and electrical engineering for nearly ten years. However, according to the employment data of graduates of relevant majors and the employment tracking of graduates, only a few students have been engaged in SCM technology-related positions after graduation. At present, the process of MCU teaching focuses on the knowledge structure of the course itself, focusing on systematicness and integrity [2]. The whole teaching process seems to be perfect, but in the whole teaching process, the specific skills that the talents need to master are not fully considered from the industry, resulting in a huge deviation between the demand side of talents and the supply side of talents. In general, there are four main problems in the teaching process.

The main reason for the emergence of demand side and supply side is that first of all, there are not many textbooks that are suitable for the job demand-oriented, and the content of the textbooks is universal, without highlighting the development of a certain position that is targeted at the industry demand[1]. Secondly, the teaching facilities cannot be satisfied. Due to the limited teaching conditions, most of the time is to use simulation software for joint adjustment [4]. The experimental training only involves some verification experiments on the ready-made hardware circuit, namely the experiment box or the simple development board, and the main teaching content is still software programming. The author's school is located in conghua, guangdong province. There are few enterprises with job requirements around the school. Both the teachers and students are not familiar with the job requirements of this course, which leads to the teacher's inability to carry out teaching in accordance with the requirements of the relevant job in the whole teaching process.

3. Based on the Training of the Post Requirements of "SCM" Course Teaching Requirements

The general goal in the teaching of the course of SCM, which is based on the job demand, is that students can enter the cooperative enterprise directly after learning the course. According to this goal, the requirements for the teaching of this course are embodied in the following four aspects.

First, the concept of instructional design. The design of this course breaks through the discipline system model, breaks the original framework of each discipline system, and integrates the content of each discipline according to the "project" after the specific post decomposition. The "project" of the course takes professional practice as the main line, which is interdisciplinary and integrates theory and enterprise practice. Emphasis is placed on the need for individual students to adapt to changes in the labor market. The design takes into account the needs of both enterprises and individuals, focuses on the overall development of people, takes job training [5] as the starting point, and takes improving students' comprehensive vocational ability as the core.

Second, school-enterprise cooperation in the development of teaching materials. The training manual of SCM application technology jointly compiled with cooperative enterprises. With the participation of technical personnel from the enterprise, based on the development and testing of single-chip microcomputer products in the enterprise, combined with the years of practical teaching experience of the members of the course group, the training manual of task division teaching is the main teaching material based on the project product as the carrier. This textbook is based on students' understanding rules, from simple project products to complex project product design, from a single sub-task to a comprehensive project task design, the content comes from the actual work of enterprises, suitable for higher vocational level integrated teaching use.

Thirdly, the combination of campus practice and off-campus practice highlights the practicality of the curriculum [5]. The in-class teaching is carried out according to the two-line parallel learning situation: project A (in-class) focuses on the vocational ability training based on the work process, and mainly adopts integrated teaching, which is arranged in the training room. Project B (extra-curricular) focuses on the transfer training of vocational ability, and repeatedly trains the work process. The content is arranged to be completed in the extra-curricular innovative training room. The evaluation is mainly based on project B, which focuses on the proportion of students' independent practical ability.

Fourth, the course emphasizes professional competence. Curriculum development fully reflects the requirements of professional positions. Through industry enterprises to participate in curriculum development, analyzes the professional post task [2], identified with multi-function digital clock design and double the power switch controller design two practical projects as the carrier, this task to transform the learning task to teaching, adopt the professional ability request to assess students' ability, make the class more close to the enterprise, learning task is closer to work, can meet the requirement of professional post more.

4. The Construction of the Curriculum Framework of "Single Chip Microcomputer" based on the Training of Post Requirements

The curriculum framework of this course focuses on the cultivation of the ability to analyze and solve problems, strengthens the students' practical ability, follows the cognitive rules of students, and closely combines the development needs of applied electronics, laying a solid foundation for the design and testing of applied electronic products in the future. To design the teaching of this course into several projects or work, organization of teaching for the unit with the project, and the typical equipment as the carrier, through the specific case, according to the order of SCM project implementation step by step, let the students master the skill in at the same time, which leads to the related theory knowledge[3], so that the students in the process of skill training to deepen the understanding of professional knowledge, skills and application of cultivating the students' comprehensive vocational ability, meet the needs of students' career development. Job demand-

oriented "single chip microcomputer" course is in accordance with the following procedures to build the curriculum system.

(1) Determine professional service positions

By relevant enterprises and industry association survey and professional advisory committee for discussion, determine the post group corresponding to this professional service: mainly to engaged in mechanical and electrical products, electronic products research and development of industry enterprises to train analysis with single-chip microcomputer application of electronic products, design, commissioning and production capacity, assistant engineer, single-chip computer sales assistant engineer position.

(2) Determine work tasks and requirements of professional competence

Through the systematic analysis and summary of the typical job tasks by enterprise experts and professional teachers, the typical job tasks and the corresponding work process of each job are determined, to analyze the professional ability requirements needed to complete the job tasks.

(3) Determine the professional curriculum system

Through the comprehensive analysis of curriculum experts, enterprise experts and professional teachers, the ability required to complete work tasks is divided into basic, special, and comprehensive ability according to the law of ability training, to conclude 16 action fields and transform them into 12 learning fields. In this way, a systematic curriculum system based on the working process is developed.

(4) Determine the nature and role of the course

In the curriculum system, the single-chip computer application technology is to cultivate students' special ability to specialized core curriculum, is for the intelligent electrical equipment development, electrical equipment controller test, test, debug, automatic production line assembly, maintenance, maintenance aspects such as enterprise culture with high voltage interfaces of microcomputer application product design, analysis, debug and production ability of practice. It supports and promotes the cultivation of comprehensive vocational skills [4] and good vocational quality.

5. The Teaching Content Design of "Single Chip Microcomputer" Course based on Post Demand Training

The design of the teaching content mainly adopts the way of scene teaching, according to the case level from yi (rank I) to difficult (level III), from single to comprehensive order. According to the general train of thought of "breaking into parts, deepening layer upon layer, grasping the key, following the passage, gathering zero for the whole, comprehensive evaluation", students are trained to apply the ability to understand by analogy. The specific design ideas of each sub-scenario are as follows.

Learning situation 1: train students' application ability of SCM basic resources, including the application of SCM own resources and common integrated devices.

Learning situation 2: train the students' ability to expand the application of resources by SCM, covering the application of integrated devices such as SCM extension interface: forward channel and data processing.

Learning situation 3: Train students' comprehensive resource application ability of single - chip microcomputer, covering the integrated application of single-chip microcomputer integrated extension interface: Forward channel, data processing backward channel and other integrated devices.

6. The General Goal of the Course of "Single Chip Microcomputer" based on the Training of Post Requirements

Jobs in professional related majors of our school and professional action domain analysis, establish the teaching goal of this course is: through the study of this course, students should master the single-chip computer application technology of special knowledge and basic skills[6], to engage in

cooperative enterprises for single-chip computer assistant engineer, sales assistant engineer position to provide the necessary professional theoretical knowledge and practical skills for special.

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Examining the Study of Teachers' Identity from the Perspective of Ontology

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Abstract. The existing theoretical research on teachers' identity is rare from the perspective of ontology, which makes it difficult to solve the problem of teachers' identity from the root. This paper draws on the three-dimensional division of ontological human existence in Marx's philosophy, combines the theory of life world and intersubjectivity, and systematically discusses the logical thinking and value orientation of teacher identity research, so as to provide some useful reference for teacher identity research.

Keywords: Teacher Identity; Ontology; Life-world Theory; Intersubjectivity Theory.

1. Introduction

The existing researches on teachers' identity have the following characteristics: first, the research fields and contents are obviously guided by national policies; Second, the research ideas and paradigms are mainly empirical research, and lack of meta-research on teacher identity; Third, the research content innovation is insufficient, take "the status approval" as the focal point, the achievement solidification phenomenon is obvious; Fourth, the object of study is more extensive, case studies gradually increased, but the conclusions of the study are not very different, lack of diversity. Although the relationship between teacher identity and identity identity is constantly entangled, coexistence and reversal, this can not be used as a reason for the lack of academic research on teacher identity.

2. Ontology and Boundary of Teacher's Identity

In recent years, the status of teachers as "professionals" has been widely recognized and the professional development of teachers has been continuously promoted. The high degree of specialization brought about by the fine division of labor in society improves work efficiency and meets our needs. But over-specialization often leads to the forgetting of self-identity of the professionals who are deeply involved in it. The process of teachers' professional development has always been accompanied by the perspective of reflection and the voice of questioning, and the study of teachers' identity and the question of "Who is teacher?" Is still out of date even now.

"Who is teacher?" Is not a scientific proposition. The mission of scientific research is to find a definite causal formula and decision chain behind the complex and pluralistic world picture. The quest for certainty originates from the need for security, and the basic laws of classical mechanics have found an outlet for the desire of human beings to seek certainty for thousands of years. Stable, orderly, predictable and controllable has become the "iron law" of scientific research.Darwin's theory of evolution introduced uncertainty into scientific research and opened a gap in the high wall of "causal determinism". With the development of thermodynamics, physical statistics, quantum mechanics, molecular biology and chaos theory, "causal determinism" declared bankruptcy. Uncertainty has become an important paradigm in natural science and social science research. Uncertainty and complexity are the basic characteristics of social processes [1]. This has become the consensus of scientific research, but the study of teacher identity is still popular in the field of certainty. Perhaps it can be explained by our uneasiness about the uncertainty of teachers' identity, just as the certainty of teachers' identity can grasp the law of educational reform and development. "Ideas and theories do not reflect reality, but only translate it, and they may translate it in a wrong way. Our reality is nothing but our idea of reality.".[2] "Complexity theory" brings a breakthrough perspective

window to the study of teacher identity: the gap between concept and theory and reality of complexity allows us to reflect on the shortcomings of theoretical research; The uncertainty mapping between reality and cognition in the field of teacher identity research can be reflected in the diversification of research perspectives and research paradigms.

"Who is teacher?" Is not a conceptual problem. Whether it is "the elder as a teacher", "the wise as a teacher", "the wise as a teacher," or the identity of teachers as "professionals", teachers are understood from the perspective of functionalism and ethics. Teachers are the core educational factor to promote students' development and achieve educational goals, which regards teachers as instrumental ontological existence; The teacher as the existence in the educational relation, the relation takes precedence over the individual, which regards the teacher as the ontological existence in ethics [3]. The research on the spiritual noumenon of teacher's "true self" tries to surpass the existence of teacher's instrumental noumenon and relational noumenon, but brings the research on teacher's identity into another kind of "separation" from real activities. Teachers as "human" and "human" as teachers can not be divorced from the real life picture, whether as a professional identity of teachers or as the main body of social life, should be established in the reality of the track to investigate the identity of teachers. Therefore, "Who is a teacher?" Is not a pure conceptual problem, which can not be defined by "what", but can only be refuted by "how".

3. Research Orientation of Teacher Identity

From epistemology to humanistic philosophy, from paying attention to the world of science to the world of life, is the transformation of the content of modern philosophy and the replacement of thinking. As a person engaged in realistic activities, his ontological characteristics are embodied in three relationships with nature, society and himself. According to Marx's point of view, human existence can be divided into three dimensions: human natural existence, social existence and spiritual existence. Natural attribute refers to the natural stipulation of human beings as natural beings, social attribute emphasizes the relationship between human beings and others and inter-subjectivity, and spiritual attribute reflects that human beings are "conscious life activities"[4] different from animals. The subject person has the above three attributes. As a multi-dimensional and rich existence, human beings have the characteristics of concreteness, generation and sociality. Practice is a conscious act of human beings, which is not only the basis of human existence, but also reflects a strong humanistic concern. In understanding the teachers who are engaged in specialized profession, we should pay attention to their practical reality, inter-subjectivity and internal spirit.

The reason why identity has become the focus of teacher identity research is that researchers have a keen insight into the worries, loneliness and loneliness of teachers in their work and life. The increasing professionalism has brought about the gradual loss of the meaning of life and spiritual home, and the ontological return to the study of teachers' identity is to bring back the life world that we turn a deaf ear to and turn a blind eye to, and to examine teachers' identity in the real life world.The study of teachers' identity should start from the panorama of teachers' life world, not only focus on teachers' daily life world, but also pay attention to teachers' practical life world under the subjective active consciousness.

Marx said in "On the outline of Feuerbach": "human nature is not a single person inherent in the abstract, in its reality, it is the sum of all social relations."[5] Social relations are the reflection of social existence, is an important part of social development. As the existence of social relations, the study of teachers' identity can not escape from the grasp of teachers' social relations. As the noumenal person, the teacher's social relationship is the same as other subjects' social relationship; As a professional teacher, the teacher's social relationship is reflected in four aspects: the relationship between teachers and change, the relationship between teachers and students, the relationship between teacher and discipline, and the relationship of teacher and self . Its core is the relationship between teachers and students. The dual paradigm of subject and object has been guiding the practice of education and teaching for a long time in the field of practice, in which the subjectivity of teachers is obvious, while in the perspective of students 'development, teachers play the role of object. The

theory of inter-subjectivity makes it possible for the relationship between teachers and students to be reasonable. As Marx said, real philosophy does not lie in explaining the world, but in transforming the world. The theory of inter-subjectivity is not only a philosophical interpretation in theory, but also has important guiding significance in social practice. Under the theoretical paradigm of inter-subjectivity, teachers and students can achieve two-way symbiotic development through the process of communication, action and interaction in educational and teaching activities, and the significance and purpose of education can also be highlighted.

The root of teachers' identity crisis lies in the value identity crisis of teachers' identity. The pluralistic value orientation of different subjects reflects the pluralistic "norms" of teachers' groups, which is in tension with the educational ideal and belief of individual teachers. Under the multiple and disorderly value norms, teachers struggle, conflict and confusion in the whirlpool of identity, which eventually leads to multiple crises of teacher identity, personal identity and professional identity. Teachers' work is individualized and creative, and there are no universal educational ideas, methods and means. The difference of experience makes teachers have a unique value orientation to the real life world and education and teaching, and the external "peddling" of values without "clarification" leads to the chaotic situation in teachers' identity experience. Therefore, the study of teacher identity is to examine and distinguish the noumenon and value of teachers, so that teachers can freely explore the real humanistic teacher identity in social practice and professional practice.

4. Summary

The study of teacher identity is the core topic of teacher professional development and teacher growth. At present, there are not many theoretical research results on teacher identity from the perspective of ontology. The study of teacher identity needs to answer the question of "who is a teacher", which is the starting point of the study of teacher identity.

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A Brief Analysis of the New Opportunity of Teacher Evaluation in the Era of Artificial Intelligence

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Abstract. The root cause of education gap is the gap between teachers, and the improvement of teacher quality is still the product of the continuous improvement of evaluation methods. The drawbacks of traditional teacher evaluation methods have been highlighted in the era of big data, such as low efficiency, poor accuracy, and lack of scientific basis, which greatly slow down the improvement of teachers' teaching quality. However, with the gradual penetration of artificial intelligence into the field of education, the transformation of teacher evaluation methods has ushered in new opportunities. Many rely on the teachers' evaluation technology of artificial intelligence has been forming, matching of products is also increasing, and set up the entity is no longer the condition of less demanding trial, if researchers are enough to test, observation, improvement, in the near future, widespread applied to colleges and universities, education institutions at various levels is expected.

Keywords: Artificial Intelligence; Teacher Education; Teacher Evaluation.

1. Introduction

The iteration of education mode is a process, and the process attribute of teacher quality refers to its renewal and development. The process attribute of teacher accomplishment is characterized by the unity of individual and development demands, transformation and renewal, and the complex relationship between experience and time and space, etc. The process attribute of teacher accomplishment is of great significance for updating the structural content of teacher accomplishment, giving play to teachers' consciousness of independent renewal, and enriching their educational experience. If the process were to be likened to a marathon, would the fairness of the race be ensured only by the self-consciousness of the participants and the supervision of the spectators? Judging from past experience, this is probably not enough. Therefore, the concept of referee was born gradually. In the topic of teacher education, a scientific and fair evaluation scheme is a qualified judge, supervising the educational behaviors of these teachers all the time, to make teachers study teaching calmly and improve their teaching level.

"Practice-evaluation-improvement-repractice" is the general mode of teachers' teaching scenes, in which "evaluation" links play a pivotal role. Only through evaluation can we understand the ability level of participating teachers and measure the effectiveness of improvement strategies, thus laying a foundation for the achievement of goals. Has long been the traditional evaluation method has been gradually highlights the shortcomings of its existence, in the information age with the increasingly mature information technology to solve the above problem: on the basis of information technology, artificial intelligence, new way of teacher evaluation, reconstruction of teachers' teaching scene model, thus for teachers can assign, become to be the problem of crack in teacher education. This paper aims to provide an idea for the construction of a new teacher evaluation model based on artificial intelligence in teaching scene mode.

2. Analysis of Traditional Teacher Evaluation Scheme

2.1 Information Collection

There are two main ways of collecting information in the existing teaching evaluation system for college teachers: issuing questionnaires and classroom observation, teachers attending lectures to each other [1].

(1) To collect information required by the system by issuing questionnaires requires a large amount of manpower and material resources to maintain the collection of information. Moreover, after the collection of information, the need for statistical information is too long, the workload is huge, and there is no guarantee that the collected information is true and effective. The validity of information will seriously affect the authenticity of teacher's teaching evaluation results. For example, a college with ten thousand students conducted a semester of teacher evaluation survey. Each student takes an average of eight courses per semester, which would require handing out 80,000 questionnaires. In addition, the questionnaires should be collected, information statistics and data analysis. These are time-consuming and laborious tasks. It takes a long time and information is acquired slowly, and cannot get real-time system requirements information.

(2) Through the formation of a listening team for the same subject, the teacher enters the class to observe the interaction between the teaching process and students. Through their own teaching experience of teaching teachers to carry out relevant teaching evaluation. The teacher who needs to listen to the classroom observation captures the teacher's teaching idea and analyzes the students' understanding of the teacher's teaching idea. But classroom observation inevitably has the following drawbacks [2].

(a) The evaluation of classroom observation is an empirical evaluation of teachers, and the evaluation results are not very accurate. Classroom observation is the evaluation of the teacher's own observation of the situation, but also not observed. There is no way to observe the psychological changes of students and teachers. Therefore, a large number of subjective judgments of observers will be included in the evaluation results.

(b) Classroom observation also requires the observation skills and evaluation ability of teachers. This limits the scope of the observer's choice. Moreover, classroom observation also requires evaluation of the teacher's sensitivity to the connections between classroom behaviors. And our basic teachers generally lack such ability.

(c) The evaluation method of classroom observation also needs more time to implement, not only the evaluated teachers need time to prepare, but also the observers need time to prepare. Classroom observation also needs to be scheduled at times when the observer is not teaching. This also has the very big test to the time arrangement.

2.2 Evaluation Way

All the existing teachers' teaching evaluation standards have been based on the effectiveness of teachers' teaching, and their evaluation standards are basically the actual results of teachers' teaching. In the judgment of teaching effectiveness, there are often many different types of evaluation. The existing teacher teaching evaluation system contains the following three main problems:

(1) The types of teachers' teaching evaluations are not carefully conducted. Strict division. In many teacher teaching evaluation systems, different types and functions of teacher teaching evaluation are mixed together. This greatly reduces the effectiveness of teacher evaluation system. The evaluation of teachers' teaching is based on the survey results of leaders, classmates and colleagues. Or by the student's achievement carries on the appraisal. This will make it difficult to get a consistent result from the teacher's teaching evaluation.

(2) In the previous teacher teaching evaluation, the content and structure of teacher performance evaluation were not consistent and clear. Teacher performance evaluation should be the most important content in teacher teaching evaluation. However, the process of teaching is very complicated, and the consistent behavior between the teacher's performance and the teaching goal is also quite complicated. The teacher's teaching evaluation should contain what behavior content, these

behaviors should be specific to what extent, the general situation to what extent, these are not a standard. The effective teacher teaching evaluation should take the teacher's systematic work as the foundation analysis, the reference existing teacher effectiveness analysis. On this basis, the effectiveness of teachers' teaching behavior can be obtained.

The existing teacher teaching evaluation system lacks a solid theoretical basis. Most of the evaluation systems use induction method and compare the factors that have influence on the teaching results obtained from the analysis of the teaching effectiveness of some teachers. We don't know which factors are important and which are not.

3. The Advantages of Artificial Intelligence in Teacher Evaluation

With the rapid development of face recognition in recent years, many countries and institutions have achieved good results. For example, MIT proposed to recognize and give different feedbacks to six human expressions through robots. Tokyo University of Science puts forward the reverse of facial expression recognition, which can recognize different facial expressions and so on. Due to the mutual efforts of many organizations, the face recognition system is becoming more and more perfect, and a lot of application products are produced accordingly. The traditional teacher evaluation model has such problems as low efficiency, weak science and poor accuracy, etc. In the era of information technology explosion, how to solve these problems with the help of increasingly mature science and technology has become a difficult problem to be solved. This paper aims to provide an idea for the construction of a new evaluation model based on artificial intelligence-based teacher evaluation system.

Classroom facial expression recognition is a process of face detection and tracking, facial expression recognition and other technologies. Classroom expression recognition focuses on the generation and change of students' expressions in the classroom environment. It mainly includes the recognition of seven basic facial expressions of happiness, sadness, surprise, contempt, fear, anger and disgust [2]. The results of facial expression recognition in class are used to analyze the emotional state statistically, and the expressions and facial orientation are used for attention analysis. The comprehensive evaluation based on these indicators is the real valuable evaluation. This evaluation method has the following advantages:

(1) By collecting students' real classroom expressions for analysis, the evaluation results are more realistic and scientific. It has a direct effect on students, which is more targeted and universal, and promotes pedagogy from empirical research to scientific research.

(2) The whole process of using the camera for intelligent capture and capture provides basic conditions for realizing the automation and intelligence of teachers' teaching evaluation system. This scheme reduces the time required for evaluation, improves work efficiency, and can reflect students' learning status more quickly, accurately and effectively, thus reflecting teachers' teaching quality.

(3) By storing data in the database, teachers' teaching evaluation information can be stored for a long time dynamically and a large amount of information can also be searched, added, removed, analyzed and counted. Therefore, it is possible to observe, count and analyze a teacher's teaching quality for a long time.

(4) Visually present the data analysis report based on the whole process of classroom learning on the WEB side, and guide, control and adjust teachers' teaching through feedback information in real time.

This kind of classroom tracking based on students' classroom emotions and performance, and using it for teaching evaluation, is a clear and effective analysis and evaluation model, with considerable effects.

4. The Realization of Artificial Intelligence in Teacher Evaluatio

It is precisely because of the benefits artificial intelligence brings to the education industry and the general trend that artificial intelligence is popular, it can use all kinds of information to process, carry

out in-depth innovation and application in the large field of education from all angles, make it play an important role in the evaluation of teaching quality, and enable teachers to teach students according to their aptitude more accurately.

4.1 Facial Expression Recognition

Starting with emotion, it's more intuitive. With the increasing attention to teaching quality in the field of education research, people pay more and more attention to the emotional problems in education and teaching. Emotion has a comprehensive influence on the learning process of students, and it is a direct reflection of students' learning efficiency. Positive learning emotions can not only improve students' learning attitude, but also facilitate the establishment of good teacher-student relationship and the creation of classroom learning atmosphere. The study of students' emotions in the evaluation process is of great significance to the improvement of teachers' teaching quality in class. Due to the rapid development of artificial intelligence, we can use facial expression recognition in face recognition technology to achieve. The core of facial expression recognition technology is to distinguish different emotions according to the corresponding relationship between facial expressions and emotions. This is because according to micro expression psychology people express certain emotional states through changes in the eye, face and mouth muscles under certain emotions. At present, facial expression recognition adopts the method of image recognition, which is realized through three main processes of face image acquisition and preprocessing, facial expression feature extraction and facial expression classification. Correction of artificial intelligence in teacher's teaching quality evaluation in traditional evaluation of the precision, according to each student in the process of teachers' classroom teaching micro expression changes in collection, identification, and analysis of data processing and quality of teachers' teaching level evaluation, provide corresponding teaching feedback to teachers' teaching, further improve the efficiency of its teaching, thus for teachers to give scientific and reliable basis for the decision-making of teaching in the future.

4.2 Relevant Case Analysis

It is reported that recently, there are middle school is to enable the project of the artificial intelligence into the classroom, by installing a combination of cameras in the classroom, students capture facial expressions and actions, and then a series of big data analysis, real-time attendance data, calculate the class focus deviation analysis, classroom behavior record data and class expressions, and will feedback the result to the teacher. "Teachers will analyze students' expressions and behaviors in class and consider changing teaching habits to make students happier in class," said a school official.[3] so artificial intelligence into the teaching quality evaluation is the trend, perhaps in the future of teacher evaluation can have such an intelligent assistant, from the classroom, on the basis of real-time control, to evaluate teachers' teaching quality, to make teachers more accurate understanding of the students of class status, adjust teaching content and direction, arouses student's study interest, make students more attention in the classroom learning, further improve the efficiency of classroom learning [4, 5]. Imagine if there is such a teacher's teaching quality evaluation, by means of science and technology to assist in teaching quality management, only by making everyone in the class has more sense, create relaxed, satisfied with the environment, to stimulate students learning more vitality and creativity, make teachers in heart to heart more understand students, according to their aptitude, education, intravenous drip in the heart of the comprehensive investment, also more close to the root of education.

5. Conclusion

The educational gap can be traced back to the gap between teachers, and the improvement of teacher quality is the product of the continuous improvement of evaluation system. Nowadays, improving teachers' performance in class is an important content of teacher education, and scientifically evaluating teachers' classroom performance is the corresponding basis. It is of great significance to update the content of teachers' accomplishment structure, promote the methodology

of updating and changing, and enrich teachers' educational experience. In the context of the traditional empirical judgment, such as "classroom observation", "the student/parent evaluation" exist in traditional evaluation schemes, such as low efficiency, scientific, and poor accuracy problem, the teacher's teaching quality update played little role in promoting, caused many contents with the same teaching patterns, also lacks the fresh blood into education industry. However, researchers are constantly collecting behavioral data such as teachers' teaching videos in class, and analyzing the collected data according to psychology, information science, neurology and other disciplines, which brings opportunities to solve the deficiency of traditional evaluation methods. The classroom evaluation technology based on artificial intelligence envisaged in this paper has taken shape, and relatively alternative products are increasingly available, and the process and conditions for physical construction are no longer so limited and cumbersome. If adequate pilot observation is carried out, its application in all levels of institutions and educational institutions is very feasible.

Of course, the original intention of classroom evaluation technology based on artificial intelligence is to collect teaching data more accurately in the future, and use the data to urge teachers to carry out educational activities in a better way. However, it must be warned that when the audience is engaged in activities in the key technology, not only the behavior data of participating in educational activities will be collected by the equipment, but other irrelevant data will also be collected at the same time. The audience will be transparent due to this factor, and corresponding security issues and ethical issues will also arise accordingly. At present, with the economic globalization trend is increasingly significant, the extent of the open education industry has also been gradually increasing, for teacher education reform should be to strengthen the original system advantage on effectively to change, to optimize the mode of teachers' teaching development, whether under the advantage of artificial intelligence and security ethics problem to find a balance, can determine the teacher education toward a good direction.

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Research on the Talent Training Mode of Internet of Things under the Concept of "Promoting Education by Competition"

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Abstract. Big data, artificial intelligence, cloud computing, and other new technologies have put forward new requirements for the Internet of things talents. It will greatly improve the application level of the Internet of things talents by reforming the talent training mode through skill competition. The concept of "promoting education by competition" has potential in talent cultivation and employment demand, student growth and teacher development, multi-level disciplines, and various specialties. At present, the Internet of things industry is booming, it needs multi-level application talents. However, the current Internet of things talent training in the curriculum, goal orientation, practical teaching, and other aspects are inadequate. Education departments and vocational colleges can reform the training mode of the Internet of things talents from four aspects: idea integration, knowledge and practice integration, teaching and learning, evaluation, and guarantee.

Keywords: Skills Competition, Talent Training, Internet of Things.

1. Introduction

"Internet plus" "Made in China 2025" and other national strategies promote the development of China's occupation education, and provide opportunities for the development of the Internet of things(hereinafter referred to as the IoT). With the progress of new technology, IoT talents should not only master the basic knowledge but also be proficient in the construction of perception layer equipment, wireless network layout, digital information intelligent processing, and other high-level skills.

However, at present, there is still a single skill training for students, which does not change the concept of talent training from the needs of the development of the IoT industry, resulting in poor training effect of vocational education. In recent years, IoT professional skills competition has been paid attention to by the public, and many researchers are exploring the way to improve the quality of talents. [1][2] Therefore, relying on skills competition to reform talent training mode will help to improve the application level of IoT talents.

2. The Development of "Promoting Education by Competition" in Talent Training

2.1 Match Talent Training and Employment Needs to Promote the Development of Vocational Education

At present, the skills competition related to the IoT major is mainly the "IoT technology application" competition item of the national or provincial and municipal vocational college skills competition, which contains the talent demand for the development of the IoT industry, and guides the design and arrangement of teaching objectives, professional courses, teaching staff, etc. Some colleges and universities have formed the teaching system of "learning training competition"[3]. At the same time, to improve the application and practice ability of the IoT students as soon as possible, various colleges and universities have also introduced teaching reform measures. For example, Hunan Province put forward the "2025 Hunan intelligent manufacturing" plan, which determines that the manufacturing industry will face the upgrading of "Hunan creative" industry, and requires the cultivation of innovative composite talents serving "industry 4.0", which involves a large number of IoT talents[4].

2.2 Integrating Students' Growth with Teachers' Development to Ensure the Implementation of Teaching Innovation

IoT professional skills competition aims to actively guide the improvement of students' innovative thinking. It requires teachers and students to join the project as a whole. Therefore, in learning and training, students should actively practice and master relevant knowledge in-depth, and teachers should adjust students' thinking of dealing with problems in time according to the reality of the IoT industry. At present, many vocational colleges in our country explore the student guidance mode under the background of multi-disciplinary. Through the establishment of multi-disciplinary teachers as the main body, guide students and teachers to complete the implementation of the project together, improve the organizational leadership and teaching innovation ability of colleges, and finally achieve the win-win effect of teachers and students under the concept of "promoting education by competition".

2.3 Combination of Various Disciplines to Promote Cross-border Collaboration

The innovative integration of different courses will help to improve the multi-disciplinary quality of the IoT talents, and also promote the diversified development of vocational college talents training. At present, the topic of the professional skills competition of the IoT is relatively flexible, and the competition does not limit the majors of the participating students[5]. Therefore, vocational colleges, through the establishment of interdisciplinary and multi-disciplinary teaching teams, guide the students of the IoT major and other majors to participate in the discussion of competition projects, stimulate the inspiration of students of different majors on the same issue to the greatest extent, help to enhance the team cohesion, open up the thinking and vision of students of the IoT major, which is outstanding for colleges and universities to cultivate high-quality talents of the IoT Direct performance of results.

3. The Current Situation of Iot Talent Training based on Industrial Demand

3.1 Introduction of the IoT Industry and Specialty

IoT is a new industry. In vocational colleges, there is a certain intersection between the curriculum and other computer majors. As a result, when students first contact the major of the IoT, their understanding and positioning of the major the IoT are not clear. But from the view of the IoT technology and the industry itself, it is a new type of business that integrates computers, information engineering, control science, and other related technologies, and it has high practical requirements. So in the curriculum. When setting up the Department, we should first return the course system of the IoT specialty to the discussion category of cross integration and engineering paradigm, and strengthen the practical link of IoT application technology. At the school level, we should actively seek cooperation with enterprises and social forces, develop the curriculum system of school enterprise-cooperation, and strengthen the combination of production, teaching, and research. We should pay attention to the setting of the preface course and the characteristic course of the IoT specialty, pay attention to its flexibility and establish the matching scientific research projects. If the conditions permit, we should transform the achievements of scientific research projects into teaching resources, realize the deep integration of teaching, scientific research, and production, and then cultivate the multi-level applied talents.

3.2 Demand and Prospect of Multi-level Talents in the IoT

The Internet of things is a field of vigorous development in our country at present. As it has only started in recent years, the demand for IoT professionals is growing. For the post demand of the IoT industry, the social demand for the IoT talents can be divided into three levels: basic application talents, intermediate talents, and senior talents(as shown in Fig1).

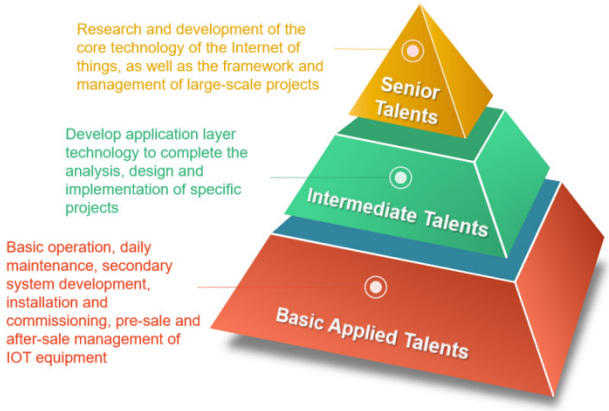

Fig 1. IoT talent classification

From the perspective of development trends, there is a large demand gap for professional talents at all levels of the IoT in China. Therefore, vocational colleges should enable students to master solid basic skills, have the ability of basic application-oriented talents, focus on the cultivation of intermediate talents, and take into account the cultivation of senior talents, to realize the transformation from primary to secondary A high-level transition.

3.3 The Shortage of Iot Talent Training

However, from the current situation of talent training. Although various colleges and universities have established the IoT major, there are still some problems in practice. First of all, when setting up the courses of the IoT and determining the direction of talent training, the school lacks enough applied talents research and clear positioning of specific applied talents standards, which leads to the lack of clear objectives in curriculum teaching. Secondly, in terms of professional training objectives, there is no clear market orientation, response to market changes is not timely enough, and teaching is rarely adjusted according to the market. Third, in terms of the professional curriculum, the positioning is not clear, not combined with the characteristics of vocational colleges, and the positioning of the talent level is not clear[6].

4. The Action Path of Talent Training of Iot under the Promotion of Competition

4.1 Concept Integration: Cultivate Application-oriented Iot Talents

At present, the mainstream training mode of skilled personnel includes the integration of industry and education, school-enterprise cooperation, modern apprenticeship, and other connotations[7]. These education cases all provide innovative talent resources for the development of the IoT industry. The reason is that the design of these models is closely related to the practical direction of industrial development. Therefore, in the process of cultivating application-oriented talents in Colleges and universities, it is necessary to find a suitable way for development according to the specific requirements of competition for competitors.

4.2 Promoting Knowledge and Practice: Making a Training Plan for the Integration of Production, Learning, and Research

The scoring standard of the IoT professional skills competition is highly targeted and oriented, which is of guiding significance for higher vocational colleges to formulate the training program of integration of production, learning, and research. Therefore, the training plan should be based on the occupation ability of students. The basic courses, skills courses, and competition courses should be arranged reasonably so that students can have enough time to internalize, think, and practice. The formulation of the training plan also needs to make a deep interpretation of the competition assessment criteria. Colleges and universities can conduct interviews and questionnaires on

participating students, based on which the organization will participate in the simulation contest and create real situations for students of the IoT, to enhance the professional level of students.

4.3 Teaching and Learning Together: Strengthen the Sense of Teamwork and Innovation between Teachers and Students

In the notice of "Internet plus" innovation and entrepreneurship competition, the Ministry of Education said that colleges and universities should "promoting education by competition" and explore new ways of quality education. Vocational colleges should be aware of the important role of teachers' ability in teaching and scientific research, strengthen professional training for guiding teachers, improve the overall level of teachers, actively use advanced technical means to combine competition and teaching, mobilize students' enthusiasm to solve problems in situations, and truly improve the ability of IoT talents to solve problems

4.4 Evaluation Guarantee: Establishing Evaluation Feedback Mechanism of Dynamic Development

Under the concept of "promoting education by competition", the means of education evaluation should take generative evaluation as the main body and establish a sound incentive mechanism. Vocational colleges should emphasize the dynamic development of students in teaching activities when making training programs. At the same time, colleges and universities also need to convert the competition results obtained by students into scientific research credits and improve the reward and recognition system.

5. Conclusion

At present, the development of the IoT industry promotes the improvement of the teaching ability of vocational colleges. The talent training mode also needs to keep up with the pace of the times, with skills competition as the starting point, innovation practice as the core value, and strive to cultivate high-level application-oriented IoT talents. Looking forward to the future, the concept of "promoting education by competition" will continue with skills competition for a long time in talent training. Vocational colleges should take the opportunity of participating in the skills competition, deepen teaching reform, and actively promote the innovation of competition guidance and teaching mode.

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The Historical Evolution Process of Teachers' Identity

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Abstract. The issue of teachers' identity is a classic hot topic in the field of education. The evolution of teachers' identity has gone through the evolution of "elders as teachers", "wise as teachers", "capable as teachers" and "priest as teacher", and the identity of "officials and teachers as one" and "professionals". Each era of the provisions of the identity of teachers have highlighted the distinctive characteristics of the times and national requirements, teachers shoulder the responsibility of knowledge transfer and personnel training, while providing intellectual support for social transformation and development.

Keywords: Teacher Identity; Chinese and Western Teachers; Development and Evolution.

1. Introduction

With the continuous advancement of history, our understanding of teachers has gradually deepened and complicated. At present, teachers are still the eternal hot topic in the field of education, but the norms of teachers'" action "are increasing, while the exploration of teachers'" what to do "is extremely rare. This paper mainly discusses the historical evolution of teachers' identity, and provides a reference for the study of teachers' identity.

2. The Evolution of Teacher Identity

2.1 Status of Teachers before Institutionalized Education

The establishment of modern education system is represented by the establishment of school system. This paper discusses the status of teachers before the institutionalization of education, taking the time node as the boundary. Before the establishment of modern educational system in the West (before the institutionalization of education), teachers' identities mainly included four kinds of identities: "elders as teachers", "wise as teachers", "philosophers as teachers" and "missionaries as masters".

The so-called "elders" include children's parents and brothers in family relations, refer to social citizens older than children in social relations, and mainly refer to officials in state relations. In the early days of Western civilization, the elders were the main teachers of children. Although there is no specific curriculum and teaching implementation plan, the imparting of life experience, the acquisition of cultural customs and the learning of basic knowledge are mainly implemented by the elders.For example, the training officials in the Greek city-states educated children in law, customs, physical fitness, military affairs and so on. Roman advocated paternal power, father as the absolute authority in the family relationship, the way of words and deeds to children mainly implement moral education. The elder has absolute authority.

"Wise Man" originally refers to a wise philosopher, and then refers to a person with ability, wisdom and superior skills. Around the 5th century BC, they became a group of people who paid for the profession of apprenticeship, known as the "wise school". Protagoras was the first to proclaim the Wise Men and to teach them for a fee:"They learn to keep their families in order and are able to speak and act their best on matters of state.".[1] "For this reason," wise men "took to the streets to make speeches and teach students some grammar, rhetoric, dialectics, natural philosophy and other contents related to speech and debate, so as to meet the requirements of the rapid development of Athenian democracy.[2] Although it has been criticized for charging apprentices, the contribution of the "wise school" is self-evident, Hegel called it "poet and epic reciter", and praised it as "great pioneer".It is

they who spread culture and increase the number of educated groups, but also reflect the social value and function of teachers [3].

When the "wise school" traveled all over the world and charged apprentices, some philosophers were engaged in the ancient education and teaching work in the form of non-professional, such as the "Three Masters of Greece". They devoted all their lives to philosophical thinking and public education in order to cultivate talents with philosophical ideas to govern the country and the world. We can call it "philosopher as teacher".

In the Middle Ages, the right to education was no longer in the hands of secular rulers, but transferred to the hands of the church. Religion is the most prominent feature of education in this period. Priests and clergymen were the main identities of teachers in this period, clergymen were mainly engaged in the cultivation of future "successors" of the church, and priests were responsible for the education and teaching of civilian schools. Although some scholars served as teachers in the court schools, the scale and scope of church education were as small as that of Egypt.Therefore, the identity of teachers in this period can be summarized as "priests as teachers".

Before the Western Zhou Dynasty, the identity of teachers in ancient China was no different from that in the West at the same time, with "elders" and "wise men" as teachers, teachers did not form a more fixed profession, so the identity of teachers was in a changing form. In the Western Zhou Dynasty, "only the officials had books, but the people had no books. Only the officials had implements, but the people had no implements. Only the officials had learning, and the people did not have learning." Teachers, in their capacity as officials, taught specific classes (rulers, feudal lords, sons of bureaucrats and nobles).The school is not only a place for teaching, but also a palace for political activities. At this time, the identity of teachers and officials is equal, and "the unity of officials and teachers" is the most typical portrayal.

With the collapse of slavery, the decline of official schools and the rise of private schools, official schools and private schools have existed for more than two thousand years, which have become two important clues to understand ancient education in China. With the continuous development of private schools, the identity of teachers is also constantly enriched. Private school teachers come from a wide range of sources, including those who are officials, those who resign, those who fail the imperial examinations, and those who are rich in learning among the civilians. No matter what kind of origin the teacher is, he has high knowledge and character. Therefore, the identity of teachers in private schools can be summarized as "those who reach the goal are teachers".In addition, the official school did not disappear because of the prosperity of private schools. Therefore, before the institutionalization of education, the identity of teachers in China had the coexistence of "the unity of government and teachers" and "those who reached the goal are teachers".

2.2 Teacher Status in the Period of Institutionalized Education

Renaissance is an era of "giants" and one of the greatest changes in human history. But the process of eliminating the remaining poisons of the Middle Ages did not happen overnight. In this process, education plays a great role in enlightenment. Teachers' identity has undergone a series of changes.In the course of the Renaissance and the Reformation, with the collapse of the church education, teachers were often humanists who had both religious and secular characteristics, and their identity had the dual attributes of both, on the one hand, they believed in Christianity, on the other hand, they had a strong sense of reform, respecting nature and children. Such as Erasmus, Vitorino, Rabelais, Martin Luther, Calvin and so on.

The gradual growth of bourgeois forces requires a large number of talents with machine production, but the process of reform in the field of education can not be synchronized. The insufficient number and poor quality of teachers have seriously hindered economic development. Therefore, until the 19th century, the demand for teachers was often higher than the demand for quality.On the one hand, the professional standard of teachers has not been published, as long as the slightly qualified personnel can become teachers, such as the provision that "English Puritans with serious life and clear conversation can become teachers" [4]. Private schools can start as long as they can recruit some underachievers. The complexity of the source of teachers and the low level of knowledge lead to the

low social and economic status of teachers.On the other hand, at this time, the upper class still implemented elite education and employed people with higher knowledge and character as tutors, such as the great philosophers Rousseau, Kant and Hegel, who served as tutors for a long time. It can be seen that the identity of teachers in this period is relatively complex, from ordinary people to philosophers can become teachers.

Since the 20th century, "specialization" has become the main theme of teacher development and reform. People gradually realize that as a specialized profession, teachers not only need to have rich knowledge and teaching ethics, but also need to undergo professional training and cultivation process. In 1935, the recommendations of the International Conference on Education repeatedly stressed the view that "after completing secondary school, secondary school teachers should be trained by universities or university education institutes or teachers' colleges".To this end, "we must ensure that future middle school teachers receive well-arranged scientific training in colleges of universities or other higher education institutions, and this scientific training must have a certain degree of specialization." The development of behaviorism, cognitivism, constructivism, humanism learning theory and the breakthrough of brain science research provide theoretical basis and practical needs for teacher professional development.The Teachers' Law of 1994 stipulates that teachers are "professionals who perform educational and teaching duties". "Professionals" have become the core content of teachers' identity.

The upsurge of teacher professionalization has triggered numerous studies on the ways, contents, standards and evaluation of teacher professionalization. Some researchers also worry that excessive professional development of teachers will easily lead to the loss of ontology, publicity and humanism beyond the professional attributes of teachers.For example, Professor Changji Li thinks calmly about teachers' professionalization, puts forward that teachers are not able to fulfill their intellectual status, and calls for the establishment of teachers' development concept of "having public feelings, pursuing spiritual independence and representing social conscience". Hongliang Yu put forward that teachers as intellectuals are the role of leading to intellectual life. From the perspective of theoretical criticism, foreign researchers hope to obtain the value of teachers as "intellectuals". The identity of teachers as "intellectuals" has been widely mentioned and studied.In addition, since the 80 years of the 20th century, there have been many achievements in discussing teachers' identity from the perspective of ontological philosophy. The research on teacher identity continues to deepen to diversification, multi-disciplinary and multi-dimensional.

3. Summary

The historical evolution of teacher identity provides a good historical material and research basis for the study of teacher identity in the new era. Only when we fully grasp the development of teacher identity, can we have a more comprehensive understanding and scientific research on teacher identity.

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Exploration of Ideological and Political Teaching Reform of the Curriculum Maintenance of Engine Electronic Control System

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Abstract. This paper aims at better integrating ideological and political elements into the teaching process of Diagnosis and Maintenance of Engine Management System and carrying out reforms of professional curriculum from the following aspects: strengthening the concept of “curriculum ideological and political education” of professional course teachers, developing and integrating teaching resources of professional courses incorporating ideology and politics elements, innovating professional teaching methods for curriculum ideological and political education and establishing the teaching quality evaluation system of professional "curriculum ideology and politics". Finally, this paper will analyze and anticipate reform effects and form a complete curriculum ideological and political reform system so as to improve professional skills, ideological quality and professional quality of students and cultivate college students who can adapt to ideology and ideological education concepts of the new era.

Keywords: Curriculum Ideological and Political Education; Teaching Reform; Engine Management System.

1. Introduction

In December 2016, General Secretary Xi emphasized on the national college ideological and political work conference that we should focus on strengthening moral education and cultivating people and carry out ideological and political work in the process of education and teaching so that we can cultivate students comprehensively in the whole education process. General Secretary Xipointed out that we should make good use of the main channel of classroom teaching and that ideological and political theory course should be improved and reinforced. Besides, it is also important to enhance the affinity and pertinence of ideological and political education and meet demands and expectations of students in their growth. All other courses should also be fully responsible for their own development so that all kinds of courses can develop at the same pace with ideological and political theory courses, which will have synergistic effects.[1] “Curriculum ideological and political education” has been basic contents of talent training in colleges and universities. As teachers of professional courses in higher vocational colleges, we should carefully consider how to build curriculum ideological and political education for students of our major. Diagnosis and Maintenance of Engine Management System is an important compulsory course required to cultivate job abilities of Automobile Mechanics in the direction of “automobile testing and maintenance technology”. This paper does a preliminary exploration and practice on the construction of curriculum ideological and political education so as to play their role in strengthening moral education and cultivating people and to provide experience for teaching reform of ideological and political education of related major curricula.

2. Curriculum Ideological and Political Education

Curriculum ideological and political education aims to combine all kinds of classes with ideological and political theory courses and to form a synergy effect by forming a whole staff, whole course, whole course education pattern. It is a kind of comprehensive educational idea that takes "strengthening moral education and cultivating people" as the fundamental task. In essence, curriculum ideological and political education is a curriculum view as well as a kind of recessive ideological and political education. It does not mean starting a new course, instead, the ideological and political education should be integrated into all links of curriculum teaching and that all courses

shall be developed together with ideological and political theory courses so as to realize the goal of strengthening moral education and cultivating people and moistening things silently. In this sense, curriculum ideological and political education is inevitable to the development of invisible ideological and political education concepts of colleges and universities [2].

3. Measures for the Construction of Curriculum Ideological and Political Education

3.1 Transformation of Teaching Philosophy

First of all, the principle of imparting knowledge and educating people should be implemented in the whole teaching course. Teachers also bear the important mission of cultivating socialist core values of college students in their professional teaching process. Besides teaching professional knowledge, group teachers also introduce the latest scientific and technological achievements to broaden students' horizons. In addition, they also vividly describe the rapid development history of China in combination with the development process of its automobiles and the rising of independent brands so as to enhance students' national pride and confidence. For example, teachers can explain the production process of the first Red Flag car and the required knowledge as well as the hard work of scientific and technical personnel so as to cultivate students' down-to-earth work styles, make them have correct understanding and down-to-earth working styles, cherish their youth, be practical and implement their lofty aspirations into concrete actions and the unremitting efforts for the great rejuvenation of the Chinese nation. Students should make hard work as a driving force of their flying youth and the increase of their abilities as the power for their fighting youth.

Second, the student-centered concept shall be integrated into the whole teaching process. Student-centered teaching refers to the teaching which can help students master knowledge and improve their abilities. In classes, teachers should not focus on teaching knowledge to students; instead, they should ensure that students can really master what they have taught from the perspective of students. Besides, teachers should not only teach knowledge points, but also inspire students to have abilities to perceive how and why. Action-oriented teaching method, mind-map teaching method and card teaching method can fully mobilize students' initiative in learning.

3.2 Develop Ideological and Political Education Resources of Maintenance of Engine Electronic Control System

First of all, course standards should be revised. In the existing curriculum standards, the unit teaching goal includes the knowledge goal and the ability goal. The revised curriculum standard adds "moral education quality goal" in the unit teaching goal section and modifies corresponding teaching contents to serve as supports for new goals. Second, teaching sources for curriculum ideological and political education shall be developed. Team teachers should find "ideological and political" elements according to characteristics of courses, the reality of relevant industries and the requirements of students' career and embed them into the teaching plan and teaching process in the form of stories, cases or discussions. For example, they can use courseware to display ideological and political elements and carry out ideological and political education through courseware backgrounds, pictures and titles. Autos will be displayed in PPT of this course. Domestic autos are often used as the background of the PPT design so as to help students build national confidence. The national flag and Tiananmen Square can also be used as backgrounds of PPT so as to cultivate students' patriotic feelings and remind them to regard the country, nation and individual as a community with a shared future. Besides, some typical cases, such as the outstanding alumni and local technical experts, can also be selected to explain codes of professional ethics and their connotation so as to help them form correct outlooks on life and good professional qualities.

(1) Combine the transmission of basic knowledge with the introduction of new technologies

Maintenance of Engine Electronic Control System can help people understand structures and principles of the intake system, the fuel supply system, the ignition system and the emission control

system of the engine and carry out future maintenance, which can lay a solid foundation for subsequent courses. In the future teaching process, we will add new technology contents, such as electronic throttle, cylinder direct injection technology, variable valve timing control system, turbo-charging technology so that students can understand the latest frontier scientific and technological knowledge.

(2) Pay attention to combining course knowledge points with education cases

Teachers should cultivate team consciousness and safety consciousness of students in their course teaching process. When repairing the engine, students should pay attention to the safety and environmental protection and teachers should carry out teaching according to safety education and environmental protection cases. Besides, they can also learn from some typical maintenance cases. A maintenance technician in Taiwan did not work carefully, which led to the failure of the brakes. Because of that, customers fail to brake on the highway and had an accident. Teachers must be rigorous attitudes in teaching students in their life and work and should not bring dangers to the society. Teachers should have lofty professional ethics, good professional qualities and strong senses of responsibility.

(3) Apply automobile development history to carry out ideological and political education

In the history of automobile development, there are many exploratory scientists and engineers who are not afraid of difficulties and sacrifice. They have made great contributions to the development of society. Teachers can introduce these cases to the course of engine maintenance so as to shape students' spirit of hard work and plain living, their courage to explore and their determination to pursue truth. For example, they can take the development history of engines as an example and tell students how Ross Auguste Otto worked tirelessly to develop the first four-stroke internal combustion engine in the world, how he thought of applying the fact that the bread became smaller after it is compressed to the operations of an engine after numerous repeated failures. If the volume of fuel gas decreases after it is compressed, the cylinder of the same volume can hold more gas and the overall power performance of the engine will be improved. Then, the first four-stroke engine in the world was born. With its birth, the automobiles came to our life. Such kind of teaching can help students face problems in their life optimistically, can enable them to face problems bravely and take measures to solve them so that they can gradually grow into a technical expert with craftsman spirit.

(4) Carry out ideological and political education according to the development history of domestic automobiles

Although domestic automobiles started relatively late, they developed rapidly and a number of national automobile enterprises, such as FAW, DFAC, GEELY and BYD, have emerged in our life. Automobiles have entered our life and improved our life, so the development history of domestic automobiles can be integrated into classroom teaching. Besides, the development history of Geely can be introduced in classes. In order to realize the dream of building cars as soon as possible, a number of car designers have worked day and night for decades. They used their holidays to carry out experiments again and again and optimize data. After thousands of failures, Geely No. 1 hit the market. With the aid of this case, students can feel spiritual essences of Great Country Craftsman, which can provide them an inspiration for realizing their own values and guide them in their learning. Besides, they will also understand the profound connotation that "we should be the master of core technologies".

3.3 Innovate Teaching Methods

In the teaching process, teachers should use appropriate teaching methods and means, such as teaching method, case teaching method, role playing method, discussion method, brainstorming method, according to different teaching contents. They can organize classes effectively so as to fully mobilize students' enthusiasm, initiative and creativity and to improve their learning ability, vocational ability and innovative ability.

3.4 Teaching Evaluation of Curriculum Ideological and Political Education

At the end of each semester, students will be given "a sheet of ideological and political experiences" so that they can summarize ideological and political elements in course in words. Team teachers can analyze the teaching effects of curriculum ideological and political education according to teaching evaluation of students and give related feedback so as to improve their future teaching. For example, they can invite experts and craftsmen from industrial enterprises in vocational education activity weeks to take part in automobile service activities together with teachers and students of the university. They can also provide free vehicle condition inspection, maintenance and other services for residents in surrounding communities so that students can apply what they have learned flexibly, can combine theory with practice and can give full play to the university's role in carrying out cooperative education. This way can not only improve the teaching effect, but also create a good campus cultural atmosphere.

4. Conclusion

The exploration and development of curriculum ideological and political education should conform to requirements of curriculum reform. It is imperative to do it. Colleges and universities should integrate the goal of ideological and political education to the teaching of professional courses so that students can be unconsciously influenced by mainstream values. This will virtually cultivate students' integrity awareness, professional ethics accomplishment and patriotic enthusiasm.

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Cultivation of Core Literacy of Data Analysis in Mathematics Classroom Teaching

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Abstract. Cultivating students' data analysis literacy is a new requirement for mathematics teaching in the new era of teaching reform. At the same time, cultivating students' data analysis core literacy in mathematics classroom teaching is also a challenge for teachers in the new era. One of the core qualities put forward by countries in the early 21st century includes mathematics and science and technology literacy. Therefore, the mathematics classroom teaching of data analysis should break through the traditional and single teaching theory and method, and create a new dimension of classroom teaching and mode. Data analysis knowledge system is an important carrier of mathematics classroom teaching and its construction. The basic framework of construction includes five dimensions: problem and situation, material and data, activity and experience, knowledge and skill, theory and method. Teachers should cultivate students' core accomplishment of data analysis through diversified paths, such as mathematics problem solving teaching, data situation teaching, case teaching, inquiry teaching and open teaching, mathematics thought method teaching and so on.

Keywords: Mathematics Core Literacy; Data Analysis; Classroom Teaching.

1. Introduction

Data and people's life are inseparable, it will gradually become the basis of scientific decision-making, data mining and data management ability will be the key quality of future citizens. In September 2016, the research results of "Chinese students' development of core literacy" were officially released, marking that core literacy has officially become an important category of education on new social needs and personal lifelong development under the new normal background of China's economy. In September 2017, the General Office of the CPC Central Committee and the State Council issued "Opinions on deepening the Reform of the Educational System and Mechanism ", which pointed out the need to promote the reform of the way of educating people in ordinary high schools and deepen the reform of education and teaching in ordinary high schools. In December 2017, the Mathematics Curriculum Standard of General Senior High School (2017 Edition), developed by the Ministry of Education, listed data analysis as an important core accomplishment of mathematics subject. In the new era, mathematics teaching carries the fundamental task of building up people by virtue and improving their accomplishment. Therefore, a key problem of mathematics classroom teaching at present is how to do a good job in the cultivation of data analysis core literacy, and find a good entry point for the implementation of data analysis literacy. This is to solve the urgent problems in the teaching level of realistic mathematics.

2. Background of Core Literacy in Data Analysis

At the beginning of the 21st century, the PISA testing project coordinated by the Organization for Economic Cooperation and Development began to evaluate the mathematical literacy of international students, which involved data uncertainty, data expression, application, interpretation and evaluation. PISA evaluation project attaches great importance to the test of students' ability of data collation and probability statistics, in which the content field of "uncertainty and data" not only occupies a quarter of the test paper of mathematics literacy evaluation, but also has cross-examination questions with the other three major content fields. In December 2006, the EU adopted a proposal on core literacy, which includes eight areas: mother tongue, foreign language, mathematics and science and technology literacy, information literacy, learning ability, citizenship and social literacy,

entrepreneurship and artistic literacy. Each field is composed of three dimensions: knowledge, skill and attitude. It is the overall goal system of EU education and training system. Britain and the United States and other developed countries attach great importance to the knowledge of probability statistics, and bring it into the curriculum system of primary and secondary schools, and deepen students' understanding of the idea of probability statistics through the solution of practical problems. The American Association of Mathematics Teachers (NCTM) published the Principles and Standards for Mathematics Education in American Schools (Principles & amp; Standards for School Mathematics) in October 1998, which set out the teaching principles, curriculum principles, learning principles, evaluation principles and scientific and technological principles of mathematics courses. At present, the reform ideas put forward by NCTM standards are still of practical significance, such as attaching importance to mathematical application, data analysis and probability.

3. Construction of Student Data Analysis Knowledge System

3.1 Main Content of Data Analysis Knowledge

Data science is a very applied discipline, as long as a large number of data infested areas, is the need for data science. Data science mainly studies the quantitative relationship of objective things and their digital characteristics, and its content is extremely rich, and it is also an important branch in the field of mathematics. The data analysis involved in mathematics course of general high school mainly includes data collection and collation, sampling analysis, statistics number, random variables and their distribution, independence test thought and so on, which are mainly divided into data acquisition, data processing and data interpretation. The data analysis knowledge construction mainly trains the student to process the data, the processing data ability, skillfully uses the frequency distribution histogram, the overall density curve, the stem and leaf chart, the sample number characteristic, the column union table and so on tool analysis and the expression data result; skillfully uses the binomial distribution, the normal distribution and so on statistical distribution model, grasps the regression analysis basic thought and the application, the independence test basic thought and the application; trains the student from the statistical principle to analyze and the research practical question from the quantitative angle. Through in-depth investigation and research to cultivate students' ability to understand research objects, make simplified assumptions, analyze internal laws, and use mathematical symbols and language to express the results of analysis, and use information technology to solve practical problems.

3.2 The Context of Formation of Student Data Analysis Knowledge System

One is to understand the origin of data science, that is, the origin of data knowledge. Data science is a subject derived from social reality problems, which needs to be sorted out those seemingly messy social phenomena, abstract specific data, and then according to the data, the hidden information or secret behind the data is described, and the internal law of the research object is expressed in a certain form. Because of the complexity and diversity of social phenomena, the primary problem of data analysis is to collect samples. According to the sample size selection and statistical survey methods are different, but also involved in data collation. At present, there are three random sampling methods, such as simple random, stratified and systematic. According to the different subjects, it is divided into comprehensive investigation and partial investigation; according to the time classification, there are continuous investigation and intermittent investigation.

Second, to understand the thinking process of data analysis, students should pay attention to the dynamic generation process of data analysis literacy. Students understand the process of thinking according to their own data, first need to understand how to organize, calculate, analyze the sample; second, should be clear how to analyze the overall situation and statistical inference. This requires students to draw the nutrition of thinking from the relevant knowledge and experience of primary school, junior high school and the life experience accumulated in peacetime, and construct new knowledge growth points according to the thinking habits formed in their learning process. For

example, when learning correlation analysis, we need to compare clustering analysis and factor analysis, and understand their differences.

The third is the construction process of mathematics classroom teaching according to the learning situation. First, construct an understanding of the randomness of samples, especially the three major sampling and random ideas. Secondly, construct the understanding of using sample to estimate population and using sample frequency distribution to estimate population distribution, such as frequency distribution map, stem and leaf map, broken line map, density curve, etc. the population digital features are estimated using sample digital features, including central location features (mean, median, mode, etc.) and discrete degree features (variance, standard deviation, etc.). Thirdly, we construct the process of thinking understanding from random events to random variables. The main points of the construction of mathematics classroom teaching are: discrete random variable distribution column (two-point distribution, binomial distribution, hypergeometric distribution, Poisson distribution), continuous random variable (uniform distribution, normal distribution), conditional probability, independence and so on. According to the different types and functions of data analysis, classroom teaching construction should be diversified. For example, emphasis on exploratory data analysis, descriptive data analysis and confirmatory data analysis teaching construction methods and their differences.

4. Classroom Teaching: Data Analysis Literacy Cultivation

According to the type of mathematics knowledge or different teaching objects, mathematics teaching can be divided into numerical concept teaching, mathematics proposition teaching, mathematics thought method teaching, mathematics problem solving teaching and so on. A famous American mathematician P R Halmos once said that the problem is the heart of mathematics. At the same time, the problem is an important carrier of mathematics teaching. American educator Burubak once said that the highest standard of teaching, the most exquisite teaching art is the students themselves to ask questions. The new curriculum standard of our country puts forward "four abilities", which requires students to have the ability to find and put forward mathematical problems from the perspective of mathematics, to analyze and solve problems. Mathematics problem solving teaching is the core of mathematics teaching, and it also means that probability statistics teaching with data analysis as the core is based on problem solving teaching. Mathematical problems are generally divided into pure mathematical problems and mathematical application problems, mathematical analysis problems often belong to the latter, all mathematical problems are attributed to the teaching of problem solving. Therefore, the teaching based on data analysis literacy should be problem-driven. On the one hand, students should dare to ask questions, and can put forward data analysis problems with certain value from real life. On the other hand, teachers can fully create problem situations according to students' existing activity experience or knowledge background, transform teaching situations into mathematical problems and pay attention to the process of problem formation. In the process of problem exploration, teachers and students from the real life, can through logical reasoning, critical questioning, intuitive conjecture, hands-on operation and other diversified ways to communicate with each other, inductive argumentation, to promote the common growth of teachers and students.

Context learning theory holds that learners need to search for the meaning of learning in context, with special emphasis on the importance of the environment in which learners are located, and the relationship between the new information processed in the environment and its internal world, that is, the relevance of the learner's internal world and the external world. Pay attention to the relationship between situation and thinking ability, pay attention to the learners' existing knowledge background, knowledge structure, learning motivation and learning interest. Mathematics applied problems often rely on a certain teaching situation or realistic background, generally based on students' life experience, giving the situation rationality, vividness and interest, in order to achieve the desire and potential to stimulate students to solve problems. In fact, the teaching of probability statistics with data analysis as the core is the most closely related to real social life, and this close or subtle

relationship is precisely the important link of teaching construction. The new curriculum standard requires the teaching design to pay attention to the construction of situation, especially to "grasp the essence of mathematics" and "attach importance to the creation of situation and the raising of problems ". At present, the teaching situation is also the hot spot of mathematics teaching research. At present, the more active mathematics teaching situation mainly includes personal life situation, social life situation, occupation and science situation, global or international problem situation and so on. Therefore, in the mathematics classroom teaching of data analysis, teachers should pay attention to the creation of situation, guide learning by environment, and pay attention to the authenticity of teaching context.

5. Summary

Data classroom teaching should be closely related to the times of data argumentation thinking cultivation, and it is necessary to cultivate students' awareness, concept and accomplishment of data analysis in the era of big data. In classroom teaching, teachers should create problem situations, be problem-driven, stimulate students' learning needs, excavate the rules and meanings hidden by data, explore the secrets hidden by data, and experience the process of data analysis personally. According to the particularity of data classroom, we should carry out mathematical modeling and social practice activities, enhance students' awareness of data analysis and application, understand the basic ideas of mathematics, and accumulate fresh experience of data thinking analysis and social practice. The generation and cultivation of data analysis literacy involves two aspects of "data cognition" and "data utilization ", one is data collection, collation, extraction and description, the other is data analysis, interpretation, discrimination and criticism. Professor Qian Menglong said," the ultimate purpose of classroom teaching is to awaken students ". Teachers should be good at asking questions, guiding thinking, creating situations, guiding learning by environment, so that students can really form the ability to describe the world and express the world in data language, and use data thinking to demonstrate the world and think about the world, so that data analysis literacy becomes a stable component in the development of students' core literacy.

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