



Research on the Intellectual Education Evaluation in the Comprehensive Quality Assessment of College Students in the New Era from the Perspective of Modern Intelligence View

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Abstract. Intellectual education has always been a central link in the cultivation of college students' comprehensive quality, but the evaluation of intellectual education has disadvantages such as homogenization, unification, and staticization, which leads to the tendency of only scores in the evaluation of comprehensive quality of college students. From the perspective of modern intelligence view, this paper analyzes the connotation and extension of intellectual education in the context of the new era, and proposes that intellectual education should be a combination of cognitive ability and social practice, incorporate more non-intelligence factors into the category of intellectual education, dynamically monitor the development of students' intellectual education quality, overcome the tendency of homogeneous development of intellectual education evaluation, and highlight the professional characteristics and individual development needs of students. In the evaluation of intellectual education, it should be based on academic performance, take into account the developmental qualities of intellectual education such as professional skills, subject competitions, scientific and technological innovation, and academic activities. It is necessary to comprehensively evaluate the development of students' intellectual education quality by combining quantitative and qualitative, self-evaluation and other evaluation, relative evaluation and absolute evaluation, so as to truly play the role of the baton of intellectual education evaluation, and continuously improve the comprehensive quality of college students.

Keywords: Modern intelligence view · Intellectual education evaluation · Comprehensive quality evaluation

1 Introduction

In October 2020, the Central Committee of the Communist Party of China and the State Council issued the "Overall Plan for Deepening the Reform of Education Evaluation in the New Era", and education evaluation has once again become a hot spot of social

concern. The document clearly requires to: “improve student evaluation and promote the all-round development of moral, intellectual, physical, aesthetic and labor.” Simultaneous development of five education, and integrated development is an inevitable requirement for the all-round development of college students in the new era, and an inevitable choice for cultivating socialist builders and successors in the new era. However, has intellectual education been given enough attention against the background of educational evaluation reform in the new era? Are educators’ understanding of college students’ intellectual education correct? Is the evaluation method of intellectual education appropriate? The questions that follow are also worth pondering. Influenced by the traditional view of intelligence, many scholars and universities in China equate intellectual education with the imparting and learning of knowledge, and equate intellectual education quality evaluation with academic examinations or assessments, thinking that intellectual education is an educational activity that cultivates students’ scientific and cultural knowledge, skills and develops students’ intelligence (Chen Peng, 2019 [3]; Luo Jia, 2010 [10]; Liu Jinyang, 2011 [9]). “Intellectual education” is equated with “classroom teaching” and “knowledge transfer”. The unification of intellectual education connotation, the staticization of intellectual education evaluation, and the simplification of intellectual education evaluation standards have resulted in people’s rigid and one-sided understanding of intellectual education. This paper will use the research results of modern intelligence theory to determine the connotation and extension of intellectual education, and determine the index system and evaluation method of intellectual education evaluation in the comprehensive quality evaluation of college students in the new era, aiming to provide a reference for the comprehensive quality assessment of college students, promote the high-quality and connotative development of colleges and universities, and accurately cultivate newcomers of the era who will develop in an all-round way in morals, intelligence, physique, beauty, labor, and take on the great responsibility of national rejuvenation.

2 The Theoretical Background of Intellectual Education Evaluation Research

Psychologists Hidman and Rothman (1987) [1] defined intelligence as the ability to think abstractly, solve problems and learn. The academic circle usually divides the view of intelligence into two research stages: the first is the traditional view of intelligence that emphasizes academic intelligence based on the intelligence tests of Binet and Simon; the second is the modern view of intelligence after the 1980s. Among them, modern intelligence theory includes multiple intelligences, ternary intelligences, emotional intelligence, successful intelligence and comprehensive intelligence and many other schools.

In the 1980s, Howard Gardner, a professor at Harvard University, proposed the theory of multiple intelligences, which became the representative of modern intelligence theory. He believed that intelligence is the ability of an individual to solve practical problems faced in real life, the ability of an individual to propose and solve new problems, and the intellectual achievement of an individual will provide valuable creation and service to his own culture (Huo Liyan, 2000 [7]). Gardner believes that intelligence is not a core ability,

but includes 8 intelligent abilities of speech-verbal intelligence, music-rhythmic intelligence, logic-numerical intelligence, visionl-spatial intelligence, body-kinesthetic intelligence, self-knowledge-introspection intelligence, communication-communication intelligence, and natural intelligence. After the theory of multiple intelligences was introduced into China, it has aroused widespread attention in the academic circles, and has become one of the two theoretical supports for the new curriculum reform in China.

The modern view of intelligence is a positive view of intelligence based on respect for differences and diversity and equality, and contains the view of talents, education and evaluation of equality, fairness and openness. (Fu Tao, 2014 [5]) It expands the connotation and extension of intelligence. By reading relevant literature and comparing and analyzing the modern and traditional views of intelligence, the following differences can be found (“Table 1”).

With the popularization of higher education and the increasingly prominent status of quality education, the connotation and extension of intellectual education in colleges and universities should also continue to be improved. It is imperative to promote the reform of intellectual education and intellectual education quality evaluation under the guidance of the modern concept of intelligence. Schools should not only attach importance to academic intelligence, but also social intelligence and emotional intelligence; it should not only attach importance to the cultivation of academic intelligence, but also to the exercise of practical intelligence and creative intelligence (Fu Tao, 2014 [5]).

Table 1. List of differences between modern intelligence view and traditional intelligence view

	Modern intelligence view	Traditional intelligence view
Intellectual element	Multiple	Unitary
Element relationship	The elements are independent	The elements are integrated.
Intellectual connotation	It contains both intellectual and non-intellectual elements, and is a combination of cognitive and social practice.	It focuses on cognitive factors, including intellectual factors only.
Intellectual extension	Intellectual skills are refined into intelligent skills for external affairs and introspective cognitive skills for internal regulation. At the same time, factors such as human emotion, behavior, creativity, interpersonal relationships, and social culture are included in the category of intelligence.	Intellectual education is limited to the application of knowledge and thinking in the school environment and in the academic field.
Intellectual development	Intelligence can be shaped and nurtured.	Intelligence is largely genetic.

(continued)

Table 1. (continued)

	Modern intelligence view	Traditional intelligence view
Whether it can be quantified	Some aspects of intelligence are quantifiable, but many more are not.	Intelligence can be measured with tools such as intelligence tests.
Forms of Intelligence	Dynamically monitor and develop student intelligence.	Statically depict the structure of intelligence.
Intelligence evaluation	Take into account both process evaluation and summative evaluation.	Pay attention to summative evaluation and despise process evaluation.
Functions of Evaluation	Pay attention to the incentive and development function of evaluation.	View evaluation as a way of identifying and selecting students
Educational value	Suitable for universal education and quality education	Suitable for elite education and elimination education

3 Models of College Students' Intellectual Education Quality from the Perspective of Modern Intelligence

3.1 The Connotation of Intellectual Education

“Intellectual education” is included in Baidu Encyclopedia and 360 Guoxue, and it is defined as “education to develop intelligence, and sometimes it also only refers to education of cultural and scientific knowledge.” Intellectual education is equated with education of cultural and scientific knowledge and skills. Traditional intelligence theory limits intelligence to academic intelligence, but educational practice shows that relying solely on academic ability to define intelligence can only partially predict students' grades and grades in school, and cannot ensure individual success in life and future workplaces.

With the development of modern intelligence theory, the simple practice of equating academic achievement with intellectual education can no longer meet the needs of the times for talents. The focus of modern intellectual education has shifted, that is, from traditional knowledge learning and skill transfer to ability development and literacy improvement. Through the guidance of educators, students can take the initiative to analyze, comprehensively judge, and solve problems independently. Modern intellectual education puts more emphasis on cultivating students' practical ability. Under the modern intellectual education thought, the intellectual education goal of higher education is to enable college students to form a scientific way of thinking, and to improve their ability to analyze and deal with problems, as well as their ability to create and practice. (Yan Fang, Luo Jia, 2011 [12]).

Scholars in China have carried out relevant research under the guidance of modern intelligence theory. Some scholars have proposed that intellectual education is based

on the systematic teaching of scientific knowledge. Through purposeful, planned, and organized teaching of knowledge and skills to students, students can master systematic cultural and scientific knowledge, develop students' observation ability, imagination ability, thinking ability, analytical ability and creative ability, so as to promote the education of students' intellectual development. The evaluation of intelligence quality mainly includes academic performance, way of thinking, and the ability to analyze and solve problems in the process of mastering knowledge (Yan Yefang, 2019 [13]; Li Yuanyuan, 2015 [8]).

3.2 The Model of Intellectual Education Quality of College Students

The cultivation and evaluation of the intellectual education quality of college students in the new era should focus on three levels of knowledge, ability and literacy. Knowledge is the foundation of intellectual education. Students master skills and improve their abilities in the application of knowledge, including the ability to analyze and solve problems, the ability to innovate and create, and professional skills. However, the core of higher education is to improve students' literacy, spirit and attitude, and the specific content includes humanistic literacy, scientific literacy, and professional literacy. The three levels are progressively progressive from outside to inside as shown in the "Fig. 1".

Intellectual education evaluation is the school's evaluation of students' intellectual education quality. According to the above model, the intellectual education evaluation of college students should mainly include the inspection and evaluation of subject knowledge, the ability to use knowledge to solve problems, and various qualities. According to the comprehensive quality evaluation methods of undergraduates announced by various colleges and universities, the current intellectual education generally accounts for about 60% to 70% of the comprehensive quality evaluation of students, but this part usually only includes the grades and credits of the courses taken by college students, and only a small number of school intellectual education evaluations include students' intellectual development quality in scientific research achievements, subject competitions, innovation and entrepreneurship, etc. Under the guidance of intellectual education evaluation based on academic performance, the comprehensive quality evaluation of college students cannot truly overcome the chronic problems of only score and diploma, nor can it reflect the law that education should respect the development of students' characteristics. Therefore, intellectual education evaluation should overcome the homogeneous development tendency of students under a single quantitative method, use certain measurement indicators and calculation methods to measure or qualify the elements of intellectual

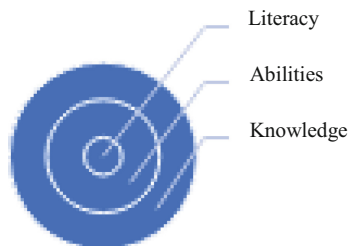


Fig. 1. Progressive model of higher education intellectual education quality level.

education, attach importance to the developmental quality of intellectual education, and fully respect the development characteristics of each student, in order to provide effective feedback on students’ intellectual growth and school’s intellectual education effect.

4 The Index System of Intellectual Education Evaluation of College Students’ Comprehensive Quality Assessment

A key link in the comprehensive quality evaluation of college students is the construction of the evaluation index system. When designing the evaluation index system, it is necessary to follow the educational laws, and set up various index items and their weights at different levels, so as to ensure that the measurement results are scientific, reasonable and effective, fully reflect the connotation of students’ intellectual education quality, truly play the role of the evaluation baton, and continuously improve the intellectual education quality of college students in the new era.

At present, some colleges and universities in China have clearly used the term “intellectual education”, and used the modern view of intelligence to comprehensively evaluate the intellectual education quality of college students. By analyzing the comprehensive quality assessment methods of college students issued by representative colleges and universities, combined with the basic connotations of the aforementioned intellectual education and intellectual education evaluation, the basic indicators of “intellectual education” evaluation can be sorted out (“Table 2”).

Table 2. List of intellectual education evaluation indicators and weights in colleges and universities

Serial number	College assessment documents	Evaluation indicators	Weight
1	“Shanghai Normal University Full-time Undergraduate Students Comprehensive Quality Assessment Method” (revised in May 2017) [12]	Academic achievement (including “situation and policy” course results), scientific research innovation, grade examination certificate, competition award, etc.	70%
2	“Huazhong Agricultural University Undergraduate Comprehensive Quality Assessment Methods” [6]	Learning ability, innovation and entrepreneurship ability	65%
3	“Measures for the Comprehensive Quality Evaluation of Full-time Undergraduate Students of Central University of Finance and Economics (Trial)” [15]	Students’ professional knowledge and theoretical learning and the cultivation of humanistic quality	50%
4	“Zhejiang University of Finance & Economics Undergraduate Comprehensive Evaluation Method” [14]	Intellectual education test score = average academic score + intellectual education plus or minus points. Among them, intellectual education bonus points are the competitions, certificates and academic achievements that the students participated in; the deduction points are the failure of the course or the punishment.	60%

To sum up, it can be seen that the main indicators of intellectual education evaluation include the following aspects, of which the first item is the basic quality of intellectual education, and the 2–6 items are the developmental quality of intellectual education.

1. Course learning ability, being able to complete professional courses and obtain corresponding graduation credits;
2. Combined with the professional situation, passing the corresponding level test and obtaining the grade certificate or industry certificate;
3. Participating in various discipline competitions and professional skills competitions;
4. Participating in scientific and technological innovation competitions, college students' innovation and entrepreneurship competitions, participating in entrepreneurship training practices and other activities and awards for various activities;
5. Participating in scientific research projects, participate in lecture forums, and publish academic papers;
6. The ability to analyze and solve other problems using the acquired knowledge.

It can be seen from the above that the evaluation of intellectual education is inseparable from specific project elements, while taking into account the operability. For colleges and universities, discipline is the basic unit of talent training and academic research in modern universities (An Xuebin et al., 2009 [2]). According to the above-mentioned connotation of intellectual education, the main indicators of intellectual education evaluation include six aspects of academic performance, academic and scientific research achievements, subject competitions, level tests and professional qualification certificates, innovation and entrepreneurship skills, and the ability to analyze and solve other problems. The evaluation indicators take into account the three levels of knowledge, ability and literacy. Among them, academic achievement has similar and quantifiable advantages in various disciplines, so there is no need to distinguish the characteristics of the disciplines, and the developmental quality of intellectual education should be distinguished according to the different characteristics of the disciplines. Each discipline should formulate detailed implementation rules for the name, category, grade, frequency, etc. of the developmental quality bonus points according to the characteristics of the major, each with its own emphasis to meet the individual development needs of students. For example, business majors can incorporate financial and business characteristic education into the quality of intellectual education; liberal arts can appropriately focus on proficiency testing and the cultivation of humanistic literacy while reducing the weight of scientific and technological innovation; engineering should pay more attention to technological innovation, invention patents, etc., and encourage students to combine professional knowledge to develop inventions create.

5 The Methods of Evaluating the Intellectual Education of College Students' Comprehensive Quality

Intellectual education evaluation should adopt a combination of quantitative and qualitative analysis methods, relative evaluation (class or grade ranking that focuses on horizontal comparison) and absolute evaluation (longitudinal comparison of students' own

progress and development). As far as the specific implementation is concerned, absolute evaluation should play a leading role, while relative evaluation should be gradually weakened; self-evaluation and mutual evaluation should be combined, and self-evaluation can be used to give full play to and mobilize students' awareness of participation, and to promote students' ability to improve self-awareness and self-improvement. Mutual evaluation is used to promote a good atmosphere among students to compare, learn, catch up, help, and surpass, and cultivate students' awareness of competition in the era (Feng Zunyong, 2005 [4]). For example, the evaluation of developmental intellectual education quality can be completed through the procedures of students' self-evaluation, self-reporting, providing corresponding certificates, interviews and defenses, etc., so as to let students transform from evaluation objects to evaluation subjects, fully mobilize students' enthusiasm and initiative, from focusing on class rankings to focusing on self-growth and progress, and help students clarify their own development needs and directions.

Students' intellectual quality is not only reflected in course study, but also in practical training, subject competition, innovation and entrepreneurship, thesis writing and social practice activities. Therefore, the evaluation of professional level should adopt the evaluation method that is consistent with the daily learning situation, that is, the students' knowledge mastery is reflected through the test results, and the daily learning performance focuses on the students' process evaluation and ability to analyze and solve practical problems.

6 Conclusion

Intellectual education evaluation is the core element in the comprehensive quality evaluation of contemporary college students, and it is the basic link of the comprehensive development of moral, intellectual, physical, aesthetic and labor. From the top-level evaluation to the students in each course, attention should be shifted to exerting students' autonomy and creativity, cultivating students' ability to apply what they have learned and analyze and solve practical problems. This paper analyzes the connotation, evaluation index and evaluation method of the intellectual education quality of contemporary college students under the guidance of the modern concept of intelligence. It is proposed that the quality of intellectual education should move from one element to multiple, from quantitative evaluation to the combination of quantitative and qualitative evaluation, from passive measurement of students to active self-evaluation, pay attention to the dynamic development of intelligence, truly play the role of evaluation in motivating and developing, guide college students to develop strong skills, and continuously improve their overall quality.

Authors' Contributions. This paper is independently completed by Xiaoxiao Shen.

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