

Value-added Evaluation System for Vocational School Students Construction and Practice Research

Jian Zhang Yurong Cheng* Bing Ran

Chongqing Education Management School, Chongqing, 401320, China

ARTICLE INFO

Article history

Received: 8 October 2021

Revised: 14 October 2021

Accepted: 20 October 2021

Published Online: 30 October 2021

Keywords:

Vocational school

Value-added evaluation

System construction

ABSTRACT

Student evaluation in the new era should be rooted in the educational macro background of "cultivating people by virtue" and comply with the overall policy orientation of educational evaluation reform. This research focuses on the construction and implementation of value-added evaluation system. Combined with the characteristics of vocational school students, this paper constructs a four-level index system and refines the student evaluation standards. The evaluation subjects are students, head teachers, teachers, parents and enterprise managers. Through the development of the related APP, it is convenient for each evaluation subject to input information, and finally use K-line chart to visually present the change process of the appreciation in students' literacy. A value-added evaluation system with strong timeliness, objectivity, motivation and operability is constructed.

1. Introduction

Student evaluation in the new era should be rooted in the educational macro background of "cultivating people by virtue" and conform to the overall policy orientation of educational evaluation reform. The reform of educational evaluation is an important content to promote the construction of high-quality talent training system in the new era. The evaluation of students is an important part of the overall reform system of educational evaluation, and it is also the focus of the general concern of the society. The reform of student evaluation method is imminent, which has become the most critical and core field in the process of the current educational reform and development. In this process, how to carry out student evaluation and realize the increase in value of students' growth is a top priority and a more difficult problem.

2. Research Background

2.1 Background of the Times

At present, the world is undergoing profound changes unseen in a century, and China has embarked on a new journey to build a modern socialist country in an all-round way. Education evaluation is related to the high-quality development of education. What kind of evaluation baton there is, there is what kind of school-running orientation. In 2020, the CPC Central Committee and The State Council issued the "Overall Plan for Deepening the Reform of Educational Evaluation in the New Era" ("Overall Plan" for short), marking that the reform of China's educational evaluation system in the new era has entered a new stage from partial reform to overall reform. "Overall plan" proposed to establish a correct employment orientation. We should reverse the employment orientation of "only

*Corresponding Author:

Yurong Cheng,

Chongqing Education Management School, Chongqing, 401320, China;

Email: 307242919@qq.com

famous universities" and "only educational background", and establish a talent use mechanism that is guided by moral character and ability and targeted at job demand. The "overall Plan" adheres to the problem orientation, starts with the concerns of the Party Central Committee, the people and the society, and advances the reform of key areas of education evaluation to achieve substantial breakthroughs. Adhere to scientific and effective method, improve the result evaluation, strengthen the process of evaluation, explore value-added evaluation, perfect comprehensive evaluation, make full use of information technology, and improve the scientific, professional and objective nature of educational evaluation. For the first time, "value-added evaluation" was advocated and promoted in the central policy documents ^[1].

2.2 Vocational Education Background

In April 2021, at the National Vocational Education Conference, General Secretary Xi Jinping made important instructions on vocational education that vocational education should develop towards high quality and cultivate hundreds of millions of high-quality technical talents, skilled craftsmen and Great Country Craftsman. The Implementation Plan of National Vocational Education Reform proposes to establish and improve a perfect evaluation, supervision and evaluation system of vocational education quality, emphasizing the establishment of a vocational education quality evaluation system centering on learners' professional ethics, technical skills and employment quality. In the context of the establishment of a modern vocational education system, some vocational school students choose to participate in the higher education, and some students choose employment. It is found that the existing student evaluation model of secondary vocational schools is basically based on the traditional academic evaluation model of ordinary schools, and the academic performance is evaluated according to the examination results of each subject, except that there are some skill rating or skill testing related to specialty and work. Moral education evaluation is the head teacher's "scoring" according to the students' daily performance, but this "scoring" lacks the corresponding standards, process, empirical data and information support, resulting in the relatively common distortion phenomenon of "scoring". Whether secondary vocational schools can train the students to become self-supporting workers, and then become technical talents, become the physical fitness, healthy personality, mental health, moral, intellectual, physical, aesthetic and labor all-round development of the socialist builders and successors, will be an important basis to measure the value-added results of vocational education. Value-added

evaluation is especially suitable for the types and characteristics of vocational education and the actual situation of students ^[2].

2.3 School Background

Our school is a national model secondary vocational school, and the school is committed to the development of education and teaching connotation. In terms of evaluation research our school has a certain basis, "multiple quantitative evaluation research and model construction of secondary vocational school students majoring in numerical control technology", "reform pilot of the implementation of grade point evaluation system in secondary vocational schools", "teaching quality evaluation research of the major of secondary vocational accounting" and other scientific research projects have been concluded. The multivariate quantitative evaluation model established by our school has "four evaluation subjects" and "three ability indicators", and finally "one score" will be given to students, which gives students a comprehensive evaluation based on the ranking of students' score in the class, grade or major. This evaluation model has changed the traditional evaluation method of "one examination to determine the merits and disadvantages", realized the multiple evaluation subjects, and paid attention to the process management. The project of reform pilot of the implementation of grade point evaluation system in secondary vocational schools will focus on the evaluation of students' academic, use credit grade point evaluation system for student course learning, professional qualification, skills contest, and enterprise practice to conducted a comprehensive evaluation, and determine whether a student has reached the standards of graduation, employment and entering a higher school. The current evaluation system can be used to assign a value to students' academic level or moral quality by "scoring", but it cannot play the "value-added" function of evaluation and cannot better reflect the longitudinal development and change process of students. Therefore, it is necessary to conduct in-depth research on the original basis and build a value-added evaluation index system ^[3].

3. Research Value

3.1 Theoretical Value

The value-added evaluation index system for "comprehensive development" as the guiding ideology, based on the evaluation of students' core quality, the evaluation process made it from the "tools" to "humanistic", from "single" to "pluralism", from "assigning a value" to "value-added", from the transformation of "speculation" to

"positive", and highlighted the value concept of "Humanistic Development". The series of theoretical achievements can provide reference for vocational education evaluation.

3.2 Practical Value

Taking Chongqing Education Management School as the pilot school, this project conducts action research from the aspects of the construction of value-added evaluation index system, the implementation of value-added evaluation, the establishment of database and APP development. It provides practical experience for students' all-round development and personalized growth, diagnosis and reform of school education^[4].

4. Definition of Core Concepts

4.1 Vocational School

It refers to all kinds of vocational schools offering full-time vocational education, mainly recruiting junior and senior high school graduates or those with the same educational level. The basic schooling system is mainly three years. It is to train high-quality workers and skilled personnel who have all-round development of morality, intelligence, physique, art and labor and have comprehensive professional abilities to work in the front line of production and service^[5].

4.2 Value-added Evaluation

China's value-added evaluation research originated from the West. The American Comprehensive Education Reform Act was enacted in 1983. Sanders and Robert McLean began a preliminary exploration of value-added evaluation. In 1988, the Tennessee Department of Education formed the Education Improvement Act, and value-added evaluation became the legal method for evaluating students, teachers, and schools in the state. Since the end of 1980s, China has carried out value-added evaluation reform in Hong Kong, Shanghai and Suzhou.

In this paper, the definition of value-added evaluation is quoted from The introduction of School Value-added Evaluation Model by Lai Han of Chongqing Institute of Education Evaluation: School value-added evaluation is by tracking research, the method of tracking students over a period of time, and the changes of their scores at different time, and through the establishment of multilevel analysis model, separate school uncontrollable factors such as demographic factors, students' family background, school students quality, etc. from the influence on student achievement, and separately investigate the "net effect" of the impact on student achievement from school, so as to achieve a more

accurate evaluation of school effectiveness^[6].

Domestic scholars Zhang Liang, Zhang Zhenhong and Miao Heming discussed two viewpoints on the connotation of value-added evaluation in the paper School Value-added Evaluation Strategy and Implementation Suggestions: one refers to the evaluation of students' academic progress, namely "achievement theory"; the other is the evaluation of all aspects of the quality of students, such as the degree of intellectual, social and emotional development, that is, the "comprehensive view". This study supports the second view. Citing the views of scholars such as Zhang Liang, the connotation of value-added evaluation is interpreted as follows: First, the content index of value-added evaluation has realized the transformation from the narrow changes in grades to the improvement of students' quality in all aspects. Second, "value added evaluation" is a concept. It attaches importance to the overall development of students' quality, reflects the process of students' development, and takes into account the differences of students, so it is a more comprehensive, scientific and desirable view. Third, "adding value" is a standard. The measure of school effectiveness is basically the value-added development of school education on students. Fourth, adding value is a method. One is the remainder of the comparison between the observed value and the predicted value; the other is the extent of the progress of students' own achievements^[7].

4.3 System

"System" is a whole of similar things in accordance with a certain law and a specific connection. "Evaluation system" can be defined as a whole composed of evaluation content. The "value-added evaluation system" in this paper is an evaluation system guided by the value-added evaluation theory, which takes "human" development as the essence and records the growth and development of students in a comprehensive, truthful and dynamic way.

5. The Research Content

5.1 Study and Research on Value-added Evaluation Theory

Citespace software is used to analyze and summarize the collected literature to form a literature review of value-added evaluation, and then deeply study and research the theory of value-added evaluation.

5.2 Construction of Value-added Evaluation Index System for Vocational School Students

The value-added evaluation index system is constructed

with the three aspects of "cultural foundation, independent development and social participation" as the first level index system, and the six qualities of "cultural deposits, scientific spirit, learning to learn, healthy life, responsibility and practice innovation" as the second level index system, and the eighteen basic points of "Humanity accumulation, human feelings, aesthetic temperament and interest, rational thinking, critical questions, having the courage to explore, willing to learn and good at learning, diligent in reflection, the information consciousness, cherishing life, healthy personality, self-management, social responsibility, national identity, international understanding, labor consciousness, problem solving, technology application" as the third level evaluation index system. Combined with the characteristics of vocational education, this study refined the fourth level quantitative indicators, and assigned the values according to the fifth level scale method to form a scientific and rigorous value-added evaluation index system [8].

The evaluation subjects of this system are students, homeroom teachers, teachers, parents and enterprise managers.

The evaluation system has four characteristics: first, it is timeliness, which can evaluate students at any time and observe the "value-added" changes of students' various aspects of literacy, so as to provide a basis for students' development and education diagnosis and reform; Second, strong objectivity. All of the students' performance or behavior at any time will be recorded, which is objective and fair; Third, strong incentive. Students can see the vertical changes of their own scores, can also compare with others, which can stimulate the internal motivation of students; Fourth, it is highly operable. Any evaluation subject can input data through the port, the system will automatically calculate the score, and the "K" graph can be seen directly using the APP.

5.3 The Formulation and Implementation of Value-added Evaluation Individualized Program

Study the formulation of educational evaluation program and the design of implementation plan and implementation scale. According to the five different subjects of evaluation such as students, teachers, head teachers, parents and enterprise managers set up working groups, respectively focus on the evaluation program and a variety of evaluation questionnaire of the different groups, collect data through the method of observation, live recording, test method, questionnaire survey method and other methods, through the port enter the data into the database and the APP of students' growth, and regularly record the data in the student's personal growth portfolio.

5.4 Development of Value-added Evaluation Database System and Value-added Evaluation APP

In today's era of big data, with "artificial intelligence + education", it is convenient to collect, sort out, process and use student evaluation information. Value-added evaluation is an evaluation method based on big data collection and sorting. In order to make data processing more scientific and accurate, this study uses information technology to develop a database system whose content matches the four levels of the value-added evaluation index system. The APP sets a port to connect to the database, and the input end of each evaluation subject is opened. The collected growth data of students can be generated into a K-line graph, which can intuitively and conveniently present the changing course of students' literacy.

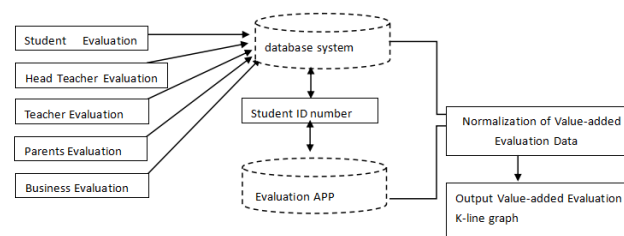


Figure 1. Value-added Evaluation Database System

5.5 Data Analysis and Conclusion Study of Value-added Evaluation

Analyze and compare the data results of the pre-test, stage test and post-test of the evaluated students, verify the data through the value-added evaluation model, write the research report, and draw a research conclusion.

6. Research Ideas

This study conducts specific research according to the basic idea of "review of theoretical and practical results -- analysis of current situation -- construction of evaluation index system -- formulation and implementation of evaluation plan -- research and development of database and APP -- operation adjustment -- research conclusion". Through investigation, the evaluation status of secondary vocational schools was understood, and Citespace software was used to sort out the related literature on value-added evaluation theory and the development of Chinese students' core literacy. The key point of this study is to explore the value-added evaluation index system on the basis of the existing "431" multiple quantitative evaluation model and the evaluation project of the grade point system. The system can be demonstrated by experts and tested in pilot schools before implementation. After

correction and adjustment, the database system and value-added evaluation APP are developed. Finally, the system enters the implementation stage to form a value-added evaluation index system with perfect value added.

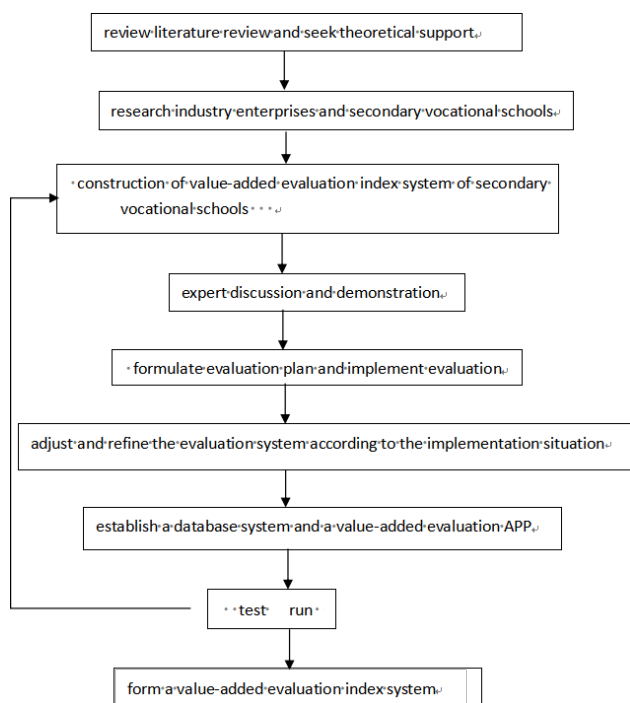


Figure 2. Research Ideas

7. Research Methods

7.1 The Literature Research Method

The literature research method is a research method that collects and reads a large number of relevant literature, logically processes and inferences the literature according to the needs of the research topic, and makes it meet the needs for the research and demonstrations. In this study, professional software was used to conduct quantitative and visual analysis of the effective literature after strict screening, seeking useful theoretical support and technical guidance for this project.

7.2 Questionnaire Method

(1) Investigate the quality requirements of the enterprise industry for employees in the aspects of humanistic background, scientific spirit, learning to learn, healthy life, responsibility, practice and innovation.

(2) Investigate the existing evaluation models of relevant secondary vocational schools, analyze the pros and cons, and provide an empirical prototype for this research.

7.3 Action Research Method

Action research method is a method adapted to conduct

the research on the work and practice of practical workers in the social field. This topic tries to build a value-added evaluation system to solve the problem of moral education evaluation. In order to make the evaluation system feasible and effective, we must participate in the actual work of moral education evaluation in schools. Find problems in practice, adjust and revise the evaluation index system in reflection, further improve the database system and the evaluation APP, so as to continuously push forward the whole research project.

8. Expected Research Results

A. Value-added Evaluation Index System for Vocational School Students;

B. Value-added Evaluation Implementation Plan and Scale for Vocational School Students;

C. Value-added Evaluation Database System for Vocational School Students;

D. Value-added Evaluation APP software for Vocational School Students;

E. Construction and Practice Research Report and Related Papers of Value-added Evaluation Index System for Vocational School Students.

References

- [1] Zhuang Xizhen. On the Significance of Value-added Evaluation to the High-quality Development of Vocational Education [J]. China Vocational and Technical Education, 2021(04): 12-17.
- [2] Jiang Hanrong. Empowering Students' Growth: Value-added Evaluation in Secondary Vocational Integrated Teaching [J]. China Vocational and Technical Education, 2021(10): 35-39.
- [3] Jin Yule, Pu Xuetao, Zhao Tingting, et al. Pen Talk: Educational Evaluation Reform and System Innovation in the New Era [J]. University Education Science, 2021(01): 13-25.
- [4] Jiang Dayuan. Transboundary, Integration and Reconstruction: Three Characteristics of Vocational Education as a Type of Education: The experience of learning the Implementation Plan of National Vocational Education Reform [J]. China Vocational and Technical Education, 2019 (7): 9-12.
- [5] Zhao Zhihao. From Assigning to Adding Value: Concept Transformation and Practice Exploration of Students' Moral Education Evaluation [J]. Shanghai Educational Research Institute, 2021(02): 40-44.
- [6] Zhang Liang, Zhang Zhenhong, Miao Heming, School "Adding value" Evaluation strategy and Implementation Suggestions [J]. Modern Educa-

- tion,2020(08):25-28.
- [7] Zhou Yao, Chen Xingbei. Value-added Evaluation: Core experience from Tennessee [J]. *Management of Primary and secondary schools*,2020 (10): 11-15.
- [8] Liu Zhentian. Education Evaluation Should Break-through the Constraints of the “Five solae” and Focus on Establishing the “Four News” [J]. *Journal of National Institute of Education Administration*,2020(11):13-15.