

Methodological Trends in Chinese Vocational Education Research: A Content Analysis of the 2021 'Vocational and Technical Education' Reprint Series

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Abstract: *This study conducts a statistical classification and analysis of the research methodologies employed in all papers published in the "Vocational and Technical Education" section of the Renmin University photocopied journals from January to December 2021. The findings indicate that qualitative research remains the predominant methodological approach in vocational education studies. However, amid the current flourishing development of vocational education practice, there is a notable shift toward methodological diversification. Specifically, the integrated application of qualitative, quantitative, empirical, and other research methods has become increasingly prevalent, reflecting a more comprehensive and pluralistic approach to inquiry in the field.*

Keywords: Vocational education; Research methodology; Present situation.

1. INTRODUCTION

Any research cannot do without the support of methods. There is no scientific research without research methods. Without research methods, research becomes like water without a source, a tree without roots, and is not true research. With the continuous development of research, the corresponding research methods have higher requirements. An important indicator of the maturity of a discipline is its research methods. In order for any discipline to achieve its independent status, it must have its own research standards. The formation of the theoretical research paradigm in vocational education is an important measure to promote the gradual transition of vocational education from general research to disciplinary research, and is an important achievement and symbol of the disciplinary development of vocational education. Based on this, increasing the importance of research methods in vocational education can help promote it.

2. RESEARCH METHODS

2.1 Research object

This article is based on the literature published in the "Vocational and Technical Education" section of the People's Congress from January to December 2021. The articles published in the "Vocational and Technical Education" section of the People's Congress have authority and representativeness, which is conducive to analyzing the current status of research methods in vocational education. In 2021, the publication transferred a total of 145 articles domestically and obtained 144 valid samples.

2.2 Research process

Due to the particularity of vocational education, there is currently no relatively complete research method for vocational education. This paper mainly forms a classification of vocational education research methods based on the research of Liu Yafang [4], Anqing [5] and others on higher education research methods. The classification of vocational education research methods is shown in Table 1.

Table 1: Research Methods for Vocational Education

Types of research methods	Specific classification	Characteristic
Qualitative research	Theoretical research method	Analyze and synthesize, abstract and generalize from a theoretical perspective, in order to discover the inherent laws or general conclusions of vocational education
	Comparative research method	A dialectical logical thinking method that distinguishes problems to understand their differences, characteristics, and essence, and reveals the universal laws of education.
	Empirical research method	To summarize and analyze specific situations in practical activities, systematize and theorize them, and elevate them into a method of experience.
	Descriptive method	Collect information through questionnaires, surveys, interviews, observations, and other means to answer questions related to current research on vocational education.
quantitative study	Investigation and research	Under the guidance of educational theory, the method of collecting data through the use of observation, lists, questionnaires, interviews, case studies, and tests.
	Experimental method	The method of systematically practicing based on certain theories or assumptions to arrive at certain scientific conclusions.
Qualitative and quantitative mixed method		Use at least one qualitative and quantitative research method.

Based on the selection of articles published in the 2021 issues 1-12 of the National People's Congress' reprinted newspapers and magazines' Vocational and Technical Education ', the research methods of the reprinted articles were studied and analyzed. Useful information was obtained from the abstracts, frontiers, research methods, etc. of the research methods that may appear in each paper. Then, further confirmation was made by linking the research of the entire paper. In terms of statistical and classification research methods, qualitative research mainly adopts literature, comparison, experience, and description methods, while quantitative research mainly adopts investigation and research methods. Furthermore, the mixed method of qualitative and quantitative research simultaneously appears.

3. THE USE OF RESEARCH METHODS IN VOCATIONAL EDUCATION

From the 144 articles in the selected Renmin University photocopies of newspapers and periodicals, "Vocational and Technical Education," issues 1-12 of 2021, qualitative research accounted for 51%, quantitative research accounted for 22%, and the combination of the two accounted for 23%. It can be found that qualitative research methods are still the most frequently used research methods in vocational education, occupying a dominant position in research methods.

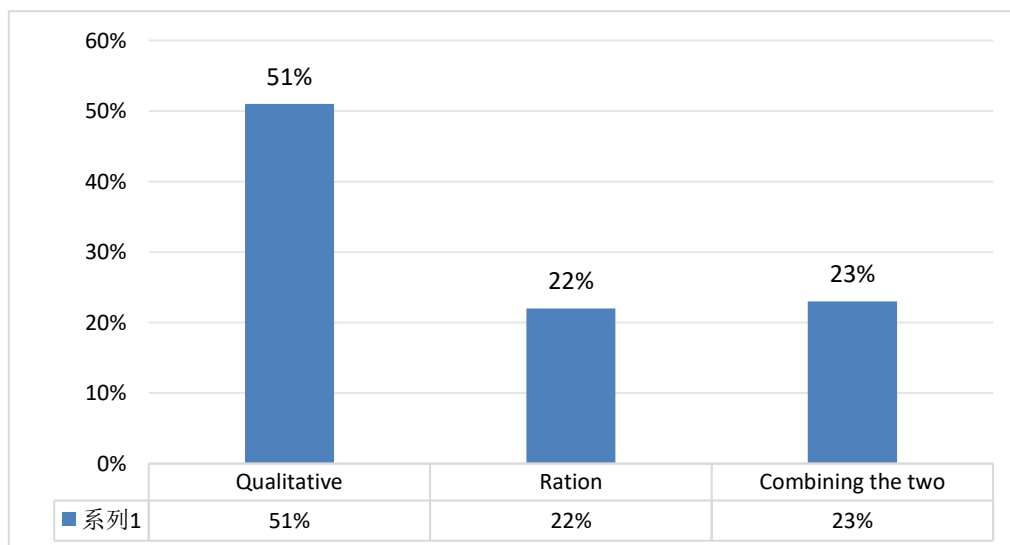


Figure 1: Usage of Research Methods in Vocational Education

3.1 Use of qualitative research

The dominant position of qualitative research methods is not only reflected in vocational education research, but also in other research fields, which is closely related to the development process of national education research theory. Firstly, using words to express and prove is something that vocational education researchers are good at and accustomed to using. They construct and improve the theoretical system of vocational education by analyzing the current situation and existing theories of vocational education. Secondly, qualitative research mainly focuses on the interconnection and development process between vocational education. Before vocational education can clearly reveal the interconnection of vocational education development at the qualitative level, it is difficult to use appropriate quantitative research tools. From this perspective, qualitative research methods also play a crucial role in the field of vocational education research. However, with the increasing emphasis on quantitative research methods that use data for research, more attention should be paid to the role of data in promoting the development of vocational education.

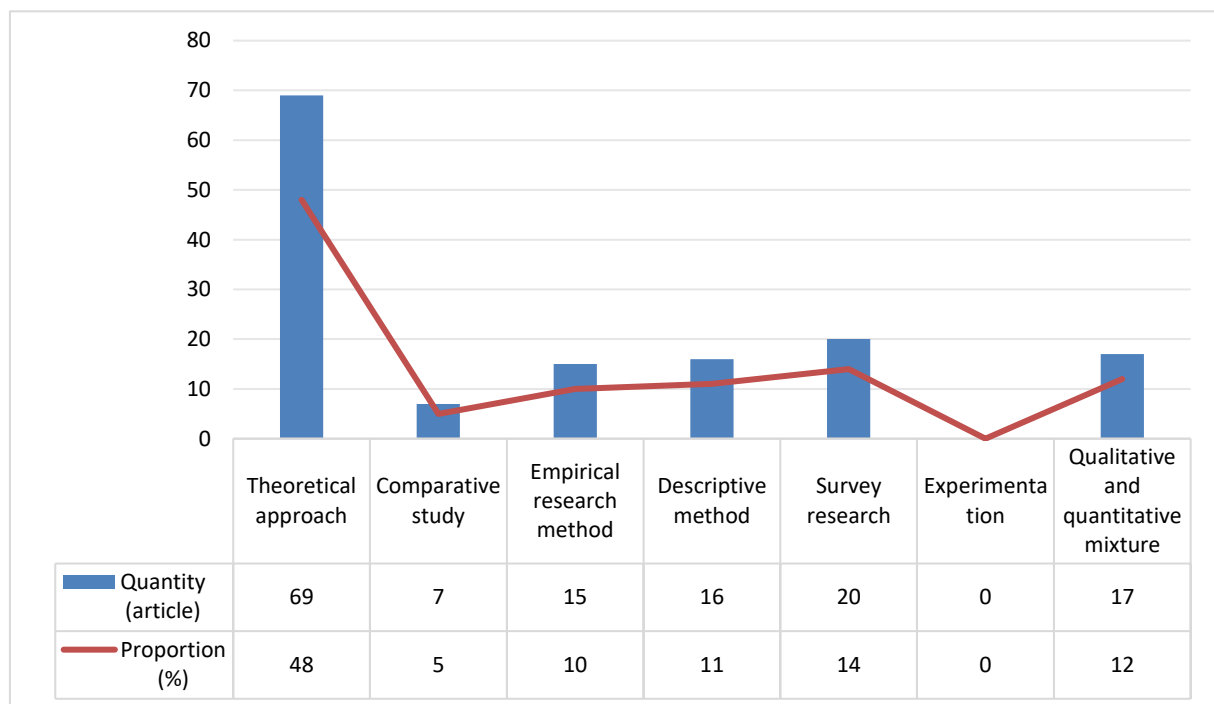


Figure 2: The number and proportion of research methods used

According to the statistical analysis of the research subjects, as shown in Figure 2, theoretical methods are the most frequently used qualitative research methods, accounting for 48%, followed by descriptive methods at 11%, empirical research methods at 10%, and comparative research methods at 5%. Theoretical research methods play an important role in vocational education research methods.

3.2 Use of quantitative research

This paper analyzes the data sources and methods from 144 valid articles in the selected Renmin University photocopies of newspapers and periodicals, "Vocational and Technical Education," issues 1-12, 2021. The data of an article is divided into primary data, which is referred to as first-hand data, and indirect data such as citations and references to previously published papers or related statistical reports, yearbooks, etc., which are referred to as second-hand data. 45% of the research subjects used quantitative research, including mixed qualitative and quantitative research, with indirect data accounting for more than half of the total. It is not difficult to see that quantitative research on vocational education mainly relies on indirect data analysis, and from the perspective of data presentation, it mainly uses charts.

It is easy to see from Figure 2 that among the quantitative research methods, the survey research methods are used most frequently, accounting for 14%, the corresponding experimental rules are used 0 times, and the qualitative

and quantitative mix accounts for 12%. Overall, when using research methods in vocational education, greater emphasis should be placed on diversity.

4. CONCLUSION

According to the full-text reprints of the 2021 issues 1-12 of the National People's Congress' printed materials on vocational and technical education, qualitative research is the main method of research in vocational education (accounting for 51%), while quantitative research accounts for only 22%, which is less than half of qualitative research. From the research data, it can be seen that qualitative research mainly uses theoretical research analysis methods, accounting for 48% of all specific research methods in qualitative research. This indicates that current vocational education research mainly analyzes, synthesizes, abstracts, and summarizes from a theoretical perspective to discover the inherent laws or general conclusions of vocational education.

If quantitative mixed research is also regarded as "quantitative research" in a broad sense, from the sample of research, the proportion of "quantitative research" that uses data to clarify viewpoints is 49%. This data indicates that vocational education also attaches more importance to using data to argue viewpoints, and we can see that "quantitative research" in a broad sense uses more charts and graphs to present data.

However, there is a phenomenon that deserves our attention. In the sample of research, the use of generalized "quantitative research" is more inclined to cite and refer to indirect data such as published papers, relevant statistical reports, yearbooks, etc. The proportion of data collected using survey research is 14%. For quantitative research that uses raw data, the main sources of data are lists, questionnaires, interviews, case studies, and tests. At present, the main specific research method for quantitative research in vocational education is survey research.

The articles that adopt quantitative research and include quantitative combination are mainly published in "China Vocational and Technical Education", "Vocational Education Forum", "Vocational and Technical Education"

On 12 authoritative vocational education journals such as "Vocational Education Newsletter" and "Education and Vocational Education", there are major publications on quantitative research in vocational education and the publication of research results that combine quantitative analysis.

5. SUGGESTIONS ON VOCATIONAL EDUCATION METHODS

5.1 Improve the utilization of quantitative research methods

The research methods in vocational education should increase the use of quantitative research methods. The National Research Council, composed of scholars from various academic backgrounds in the United States, has proposed the "Six Basic Guiding Principles" for scientific research, among which an important principle is to "use methods that can directly study the research problem, namely the data collection plan and the measurement and analysis of the data" [6]. The improvement of scientific research level in vocational education relies on a large number of real and effective research results provided by empirical research, in order to effectively promote the development of vocational education.

5.2 Emphasize the use of 'first-hand data'

Currently, using data to speak for itself has become a norm in international vocational education research. According to the survey and research, about half of them cite and refer to indirect data such as published papers or relevant statistical reports, yearbooks, etc. by others. The use of indirect data can help researchers save a lot of time and experience to a certain extent, but strictly speaking, it is only an indirect use of other people's research results, which is within the scope of literature analysis. Secondly, we cannot guarantee the authenticity of citing or referencing other people's data.

5.3 Emphasize the diversity of research methods used

The application level of research methods is closely related to the effectiveness and efficiency of research. Based on the special nature of vocational education, researchers should pay more attention to selecting appropriate research methods. Pay more attention to the diversification of research method selection, and even innovate

research methods based on the research content to promote the improvement of vocational education research level.

The last thing that needs to be explained in the article is that this study takes the 2021 National People's Congress photocopy of the newspaper material "Vocational and Technical Education" as the research object. Because the sampling of the research subjects only selected those from 2021, even though the journal plays an important role in vocational education in China and is not based on research methods, there may be some discrepancies in the research results. This needs further improvement in the future.

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