

Guangyu-essay

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The Critique of Qualitative Methods and Quantitative Methods

Introduction

In the field of research methodology, the choice between quantitative and qualitative methods often determines the depth, breadth, and nature of the research. Quantitative methods, featured by numeric data collection and statistical analysis, offer a structured framework to explore a certain phenomena and test hypotheses (Punch,1998). Conversely, qualitative methods delve into the intricate layers of human experiences, relying on non-numeric data to uncover nuanced insights (Punch,1998). Yet, the dichotomy between these methodologies births distinct advantages and limitations, prompting a growing call for a combined research method - the mixed-methods.

The present article explores the concepts of quantitative, qualitative, and mixed-methods, delineating their strengths and limitations. Furthermore, it explores the potential synergies that emerge from their integration, seeking to illuminate the path toward a more comprehensive understanding of complex research questions.

Quantitative research methods

According to Punch(1998), quantitative research is considered as one of the primary research where the statistics are collected in the form of numbers. It refers to the empirical study in which the data are numerical. Quantitative research concentrates on using numbers or data to define a special item or feature (Rasinger, 2010). The data collected from a quantitative research can be analyzed through different statistical methods using certain mathematics tools (Rasinger, 2010). The hypotheses proposed in a quantitative research should be based on the theories that are well-known and the researchers should manage to prove or disprove the hypotheses they put forward in their research (Rasinger, 2010). Quantitative research methods is widely used in various fields, including the natural and social sciences, such as biology, chemistry,

psychology, economics, and sociology. This section will make a description on both advantages and disadvantages of using quantitative research methods.  2

Quantitative research method is a scientific method to explore research questions by collecting and analyzing numerical data. In linguistic research, many studies only use quantitative research methods to investigate language structure, language use and language change (Rasinger, 2014). Some of the advantages of adopting quantitative research methods will be discussed in this section. □

According to Zoltan(2007), in quantitative study, objective data and standardized measurement tools can be used to reduce the subjectivity and bias of the research. Quantitative research can be used for statistical analysis of large samples to improve the generality and  3 **extensionity** of the research(Faber, Fonseca, 2014). What's more, researchers who use quantitative research methods can make use of advanced techniques and algorithms to improve the efficiency and accuracy of research. Also, by verifying and testing the existed theories and hypotheses, quantitative research can thereby increase the credibility and validity(Wen, 2001).

 4 In the study of Zhang and Liu(2019), a sample of 301 Chinese undergraduate English learners was involved and the researchers collected the scores of participants after students taking the Vocabulary Levels Test (Schmitt, Schmitt and Clapham, 2001) and English reading comprehension test. All the data collected are well-presented in tables and diagrams and the researchers used SPSS to analyze the data. The study explored the relationships between breadth of vocabulary knowledge and reading comprehension in English, and the results of the study is **reliable**  5 valid through using a quantitative research method.

Quantitative research methods allow for standardized data collection, reliable and accurate data analysis, quick data collection, broad scope of data analysis, and elimination of bias in data collection and analysis(Zhong and Quyang, 2010).

Although quantitative research methods have been widely used in different research fields, it still 6 have limitations. According to Zoltan(2007), the general exploration capacity of quantitative research is quite limited. Qualitative researchers often argue that quantitative research is "oversimplified, out-of-context in terms of generalizations, and fails to capture what people really mean in their lives" (Brannen, 2005). Baesed on the previous studies, some of the limitations of quantitative research methods are listed as follows.

Quantitative research may lack of contextual details which is helpful to fully understand the behaviors, attitudes, and motivations of study subjects(7n, 2007). Also, it may be limited by the design of a study, which does not have the flexibility to discover new problems or phenomena(Wen,2001). What's more,quantitative research can lead to structural biases and misrepresentations that reflect the views of the researcher rather than those of the subjects(Zhong, H. and Ouyang, H., 2010).Quantitative research may fail to provide human significance and can only provide numerical descriptions rather than detailed narratives (Zoltan, 2007). At the same time, some researchers(Delle Fave, et al., 2011)proposed that quantitative studies may be affected by experimental settings and fail to realistically simulate real-world situations and it may be influenced by questionnaire questions and fail to reflect the subjects' true feelings about a topic. 8

Qualitative research methods

Qualitative research is also one of the primary research methods, different from the data collected in quantitative research, the statics in qualitative studies are not in the form of numbers(Punch,2005). According to Wen(2001),the design of qualitative research is based on the deep study or analysis of the research objects and the aim is to explore how something is. Generally, qualitative research methods is adopted when

the size of sample is small. However, the description of the data collected in the study should be detailed and comprehensive. Qualitative Analysis often adopts a more flexible data collection way including interviews, surveys, document studies and observation. The results of qualitative studies present an understanding of the problem from the view of the participants and emphasize the context and temporal significance of the event (Zoltan, 2007). This section will discuss the advantages and limitations of using qualitative research methods in a study.



According to Zoltan (2007) qualitative research method is a scientific method to explore research questions by collecting and analyzing non-numerical data. In linguistic research, many studies adopt only qualitative research methods to investigate the characters from individuals to individuals (Rasinger, 2014). Some of the advantages of adopting quantitative research methods will be discussed in this section. The following part will present the advantages of using qualitative research methods.

Through using qualitative research methods, the causes could be explored by observing and recording participants' thoughts, perceptions and behaviors, thus providing researchers with the perspective of study participants. It provides the research with depth and detail (Zoltan, 2007). Meanwhile, qualitative research methods can trigger discussion and stimulate interviewees' thinking and expression through open-ended questions and interactive ways, thus deriving more new ideas and topics (Angouri, 2019). Compared with quantitative research methods, qualitative research method is more flexible. It can be adapted to the needs of the research topic and will not be limited by fixed methods of data collection and analysis (Zoltan, 2007). According to Zoltan (2007), qualitative research method is context-based which mainly focus on natural or real-life environments in order to provide context to the collected data and increase the authenticity and trustworthiness of the research. What's more, qualitative research method is indeed an enriching research, which means that the research method can provide a holistic view of the phenomenon being

investigated, interact with the subject of study in their own language and terminology, and create descriptive function from qualitative data(Dörnyei, 2007).

Although qualitative research method is a scientific method which has been used many different research areas, there are still limitations of using it only in a study.

According to the literature review that has been done by Zoltan (2007), two criticisms of qualitative research were found . The first is a complaint about the quantitative motivations of qualitative research, aspects that are different from quantitative research but that qualitative researchers consider either strengths or normal features. The second part includes the questions raised by the qualitative researchers themselves. The limitations of qualitative research methods are as follows:

□ Qualitative research method lacks generality because it is often based on small samples or individual cases, which is not representative of the whole population and it is difficult to apply the findings to other contexts or domains(Zoltan, 2007). Also, qualitative research method is short for objectivity and reliability for it is subject to the subjective judgment and interpretation of researchers, which may have biases and errors, thus, is difficult to repeat or verify .What's more, it also lacks efficiency and precision because qualitative researchers take a lot of time and resources to collect and analyze data. And the methods used in qualitative study lack standardized and quantitative measurement tools and techniques as it appears in the quantitative research. As it mentioned by Zotlan in 2007, one of the main limitations of using qualitative method only is the lack of theoretical support and evidence. Qualitative research tends to focus on the description and understanding of phenomena rather than the explanation and prediction of phenomena, and it is difficult to establish and test hypotheses and theory proposed in the study (Zotlan, 2007).

Mixed-methods

Mixed-methods, as the name shows, is to apply both quantitative research methods and qualitative research methods to a certain one study. In applied linguistics, we find many studies that combine the two research methods. Magnan(2006) reports that from 1995 to 2005, 6.8% of research papers appearing in the Journal of Modern Languages used mixed methods, which is relatively high if we compare it to the total number of qualitative studies (19.8%). At present, applied linguists of both qualitative and quantitative direction are generally calling for greater involvement in the practice on combining the two methods together. This section will introduce the mixed-methods and its advantages along with its limitations in detail.

Some advantages of mixed- method are discussed as follows:

By combining both quantitative and qualitative methods, researchers can conduct more holistic and valuable studies and also have deeper insights into people's experiences, attitudes or behaviors, with the help of statistical data, the results can be used to generalize findings to a larger population. At the same time, combining quantitative and qualitative data is also helpful to triangulate findings, which means that researchers can use multiple sources of data to confirm or refute their findings. Quantitative and qualitative methods complement each other by providing different types of information that can be used to answer different types of research questions. The use of mixed-methods can also improve the validity to a certain study (Wen, 2001). According to Zotlan (2007), combining quantitative and qualitative research methods provide a more complete understanding of a research questions and help to overcome the limitations of using either method only.

Although mixed methods research provide a more comprehensive and nuanced understanding of in a study, it has some challenges and limitations, such as complexity, expertise required, data integration, and data analysis. Researchers need

to carefully consider the advantages and disadvantages of mixed methods research before deciding whether it is suitable for their research question.

Research methods selected in my own research

According to Wen (2001), a quantitative design can be adopted in various studies which can provide a concise and brief pattern. The research results are reliable but are sometimes oversimplified and without enough validity. On the other hand, a qualitative design can generate a more figurative picture of objective reality and reveal more complex information of participants, but it is time-consuming and the research results are sometimes without enough generalizability. Compared with using either quantitative research method or qualitative research method only, the combination of the two together tends to generate a more persuasive and more comprehensive results(Wen, 2001).

My research question involves the interplay of trait self-control, self-control depletion and English learning achievement, which is a complex topic that may require a combination of qualitative and quantitative research methods. Quantitative methods will be used to measure and analyze the degree and effect of trait self-control, self-control depletion and English learning achievement. Qualitative method is helpful to deeply understand and explain the intrinsic relationship among the three variables.

In terms of quantitative research methods, a scale for measuring the level of trait self-control will be distributed to participants. Also, the scores of two English tests will be collected. All these data will be analyzed by SPSS. As for qualitative data, an interview will be designed before interviewing the participants for knowing the self-control strategies they used during the experiment. By employing quantitative measures to gauge the degrees and impacts of trait self-control and self-control depletion, coupled with qualitative methods to unearth the underlying nuances and intrinsic associations, the study endeavors to provide a comprehensive, compelling

narrative surrounding English learning achievement.

Consequently, the fusion of these approaches emerges as an imperative avenue for a holistic investigation. Through a combined methodology that marries the precision of quantitative analyses with the depth of qualitative insights, this research aims to forge a robust understanding of the intricate relationships among the variables. In embracing the synergies between these methodologies lies the promise of a more persuasive and comprehensive elucidation of the complex interplay among trait self-control, self-control depletion, and English learning achievement, thereby charting new horizons in research methodology and comprehension within this domain.

Conclusion

This article explores the concept of quantitative research methods, qualitative research methods as well as mixed-methods. At the same time, based on the papers and books published by former scholars, both the strength and the limitations of the three research methods have been discussed in detailed. Also, some examples are given in the article to make a full description of using the three methods. At the end of this article, the reason for choosing mixed-methods in my own research has been given. All in all, no matter which research method is chosen, each has its own irreplaceable strengths and significant limitations. Therefore, researchers should carefully select a research method that suitable for their research purposes and questions. By choosing the appropriate research method and implementing a thorough and well-structured research design, high credibility and widely applicable research results can be achieved.

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FINAL GRADE

68/100

GENERAL COMMENTS

This is an excellent assignment, which explores the topic effectively.

You provide an interesting rationale for each research method and relates to extensive relevant background reading and your awareness of the module content.

You have succeeded in identifying a key features of each type of research in relation to current practice. This response indicates a level of critical understanding congruent with this level.

The style is coherent and reflective. You have obviously gained a great deal from this module and you are aware of the limitations of each research approach. Good awareness of the research methodology , clear awareness of each approaches' shortcomings and this is communicated clearly.

You might like to consider:

1. Reading more around the subject.
2. Check your syntax and grammar carefully.

3. Try to elaborate on key research theory in further detail.

PAGE 1



Comment 1

check meaning.

PAGE 2



Comment 2

introduce a description about ...



Comment 3

explain fully.



Comment 4

spacing between words and date.



Comment 5

Futher discussion about what constitutes reliability required here.

PAGE 3



Comment 6

subject verb agreement.



Comment 7

spacing!



Comment 8

Interesting focus.



Comment 9

More analytical explanation required.

PAGE 4



Comment 10

It is not necessary to foreground your discussion.

PAGE 5

PAGE 6

PAGE 7

PAGE 8



Comment 11

You are only required to compare 2 main research approaches and mention mixed methods briefly.



Comment 12

A clear conclusion - well done.

PAGE 9
