# CRITICAL ANALYSIS OF THE CONTRIBUTION MADE BY QUALITATIVE AND QUANTITATIVE RESEARCH IN ENGLISH FOR SPECIFIC PURPOSES STUDIES

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**ABSTRACT:** Qualitative and quantitative are the essential and basic research methods used in all the academic disciplines. English for Specific Purposes (ESP) is a new trend in the English studying world. Many studies have been done in ESP field. In this article, qualitative and quantitative research methods used in the ESP field will be discussed, and the conclusion was made that qualitative research method suits ESP study better.

KEYWORDS: Qualitative research; Quantitative research; Mixed research methods; ESP

#### INTRODUCTION

Qualitative and quantitative research methods are the cornerstone of educational research and have been used extensively. This paper will focus on the use of these research methods to study the educational approach of English for Specific Purposes. Researchers have to master the qualitative and quantitative research approaches and methods in order to pursue their academic careers. Qualitative and quantitative are basic research methods used in different disciplines and researchers find it helpful to distinguish between them. According to Bryman (2016), qualitative research usually places emphasis on words rather than numbers during the collection and data analysis period, and mainly uses an inductive approach with emphasis on how the research subjects interpret the world around them. Whereas quantitative research places emphasis on quantificational collection and data analysis, and uses a deductive approach to test the theories, while holding the view that the social reality is an objective reality. The qualitative research is often referred to as "soft" and quantitative research is called "hard" (Scott, Usher 2011). Since language education is considered as being more "soft" compared with the "hard" scientific research, it follows that the qualitative research method is used more often in the language education field. From the epistemological point of view: qualitative research is interpretivism, while in contrast, quantitative is positivism. From the ontological point of view: qualitative research is constructionism, while the quantitative research is objectivism. Even though qualitative and quantitative methods have made a great contribution to research, there are still issues to critique. According to Bryman (2016), qualitative research is too subjective; it is also difficult to replicate and to make a generalisation. Quantitative research may depend on instruments and variables too much, and it is difficult to connect quantitative research to everyday life. In this paper, the advantages and disadvantages of qualitative and quantitative research approaches and methods which are used in relation to the topic of English for Specific Purpose will be discussed, also with their usefulness and ethical considerations

English for Specific Purposes (ESP) has become a trend in current English teaching and studying (Paltridge, Starfield 2013). In China, many universities are beginning to use the ESP method, which means some of the subjects are taught using the English language. In addition, much research is carried out in this area using qualitative or quantitative research or a

combination of both research methods (some references here?). Through the use of qualitative research methods, attitude, ideas, and the understanding of the ESP can be examined. By conducting a quantitative study, the influence of the ESP teaching can be tested. There are not many research articles discussing the advantages and disadvantages of using qualitative and quantitative research methods in ESP studies, so this paper is meaningful to explore in this area.

It is worth mentioning that in the ESP field there is a small portion of research conducted using a combination of both quantitative and qualitative research methods. Combining the two research methods can make the research study more time efficient, but the pitfall is that the mixed method design may lack a theoretical fit. These issues will be discussed later when reviewing an article using mixed research methods. In the following sections, detailed explanations of the qualitative and quantitative research methods will be discussed. Articles from journals of international origin and within China will be used to support the critique.

#### **Ethical considerations:**

During any study, researchers need to consider the ethical issues. According to Diener and Crandall (1978), the ethical principles may cover three main areas: harm to participants; lack of informed consent; invasion of privacy. Harm to participants is unacceptable to most researchers. But how can one define harm? Harm can include the following: physical harm; endangerment to the participants' future development; loss of participants' self-esteem; stress on the research subjects (Bryman 2016). During the process of research, researchers should not put their research subjects in danger during the data collection period (Creswell 2014). Second, Creswell (2014) mentioned that the procedure of gaining permission is also important. The researchers gain advantage when signing the informed consent, along with the research participants, because it not only gives the participants a chance to be fully informed of the nature of the research, but it also gives the researcher evidence if anything happens during the research (Bryman 2016). Third, regarding the issue of the invasion of privacy, researchers need to ensure the protection of individuals' anonymity and confidentiality.

A major consideration about the ethical issue is that researchers need to strike a balance between the desire of a professional researcher for the pursuit of the truth, and the rights of the research subjects who may potentially be endangered by the research (Cohen, Manion et al. 2011). So, researchers need to make well-informed and wise decisions when they conduct research in the field with careful consideration of both the researchers' and the participants' rights and responsibilities.

# Qualitative research approaches and methods:

#### **Definition:**

Qualitative research is an umbrella term which describes a number of research methodologies. This approach can be broadly used in disciplines of education, linguistics, social science, philosophy and anthropology (Heigham Croker 2009). According to Bryman (1998), the main feature of qualitative research is to view the research subjects from their perspective. Bogdan and Biklen (2006) express the characteristics of qualitative research as being data that is described thickly, while the main purpose is to gain detailed description of the research.

The underpinning theory of qualitative research is interpretivism. Interpretivism researchers argue? that social sciences are different from the natural sciences and these differences should

be respected (Bryman 2012). The interpretive researchers conduct their research with the purpose of understanding the research subjects' minds from the subjects' own interpretation (Cohen, Manion et al. 2011). Three traditional theories are generated from interpretivism: phenomenology, ethnomethodology and symbolic interactionism. The definition of phenomenology is that researchers judge research subjects' reaction not by objective reality, but rather by experiences (English and English, 1958); ethnomethodology works to understand the everyday events from within (Burrell and Morgan, 1979); symbolic interactionism is the study of the meanings from subjective and individual perspectives (Flick 2009). But there is criticism of these interpretive researchers as they may abandon the scientific methods and ignore the useful results generated from it.

Qualitative research has many approaches: case study, action research, phenomenology, grounded theory and ethnography. The data collection methods include interview, observation, discourse analysis and documentations.

# **Advantages**

The first advantage, as Creswell (2014) indicates, is that qualitative research allows the research to be conducted in a naturalistic setting. It could take place in schools, families or local communities, where, in these real situations, the events can be better understood (Bogdan, Biklen 2006). Secondly, the data collected through the use of qualitative research methods is mainly in descriptive form. Thirdly, because the research is the reflection of researcher inquiry, it shows honesty and openness (Mertens, 2003). Lastly, the qualitative approach is inductive research, so the evidence for the hypotheses is not conducted before the research.

# **Disadvantages**

Bryman (2012) believes that at times quantitative researchers will criticise qualitative research because the findings are too impressionistic and subjective. Also, some researchers claim that qualitative research is difficult to replicate since the qualitative study often relies on researchers' ingenuity. Thirdly, when using the interview or observation research methods for a small number of individuals in a certain situation, it is hard to generalise the results to other settings. Lastly, there is a lack of transparency of the conclusions made by the qualitative researchers.

List of examples of journals I read from both national and international journals? to discuss the qualitative methods used in ESP.

## **Example 1 from an International Journal**

The first article is chosen because of the use of a very popular qualitative research method - the semi-structured interview. Kvale (1996) indicates that an interview is about different people exchanging ideas and perspectives on the same subject. The interview could be very flexible so it is widely used in qualitative research. Understanding how to use this method is essential to language education researchers.

In the article *Chinese academics writing for publication: English teacher as text mediators*, the author discusses the role played by local English teachers as text mediators for Chinese university scholars who want to publish their papers in English. As we mentioned above, a characteristic of the qualitative study is to collect ideas of the participants from their

perspectives. So we are confident to say that this is a qualitative research article. The research method of semi-structured interviews was conducted in the study covered in this article, where six teachers were interviewed. A semi-structured interview is a qualitative way of interviewing people with open-ended questions. As previously mentioned, the qualitative research method leads the participants to answer the question from their own perspectives. For example, one of the questions in this article is "How do you decide which papers to work on and which to decline?" or "Why do you think these authors turn to you for help?" This style of questioning gives the participants freedom to answer the question from their point of view and can help to gain a thick description of the data from the participants' answers. Also, it can help to make an assessment of the participants' knowledge regarding the question. An example from the article is when the author asked "Do you know anything about the submission process and journals of the manuscripts you mediated? If yes, please describe". Through the description, the knowledge of the interviewees could be tested. In the semi-structured interview, the researcher will have a list of questions related to the topic (Bryman 2016). In the appendix part of the article, the author puts on an "interview schedule" for 16 questions which the author used during the study. Since the participants would answer the same questions, the comparability of the answers is increased. This can also reduce the effects and bias from the interviewers because several participants are interviewed (Cohen, Manion et al. 2011). The interview is a flexible method to collect data and to make an in-depth analysis of the contents. For example, in the article, the interviews were conducted through face-to-face interaction, and when one interviewer was not available, due to the flexible character of the interview, they conducted the interview online. In this article, the author made a right choice by using a semi-structured interview, because the author wants to get ideas from teachers, so the description of thoughts has to be collected.

However, there are some disadvantages to using the interview method. Like the weakness of the qualitative study, according to the author, the sample is too small so the results' generalizability is limited. For example, in the article, only eight English teachers participated in the interview, so the author advised a further large scale research to be conducted by other researchers. Also, because of the nature of the semi-interview, like other qualitative research, since the answers rely on the interviewees' own experiences it is hard to replicate them to other settings. For example, in the article, the setting is in the Chinese Universities, but outside this setting, the results would be difficult to replicate. In addition, since a question list is used, the standardised wording and question ranking could limit the naturalness of the answers.

There are also some ethical concerns regarding the interview method. It is necessary to inform the interviewee the purpose, scope and nature of the interview. Permission is needed to record or publish the contents. As mentioned in the article, informed consent was signed by all the interviewees. Concerning the confidentiality issues, all the teachers' names and the names of their workplace were anonymous in the article.

## **Example 2 from a Chinese Journal**

Grounded theory plays an important role in qualitative studies of English education. It is the most highly used approach to analyse qualitative data (Bryman 2016). Glaser (1996) believes that Grounded theory is a theory can be generated from the data. The grounded theory approach is an important method of generating theory from qualitative data (Cohen, Manion et al. 2011). Moghaddam (2006) indicates that the purpose of the grounded theory is, instead of testing an existing theory, it is used to establish and generate a new theory through analysis of data, identifying the concept and making a comparison. In the article, *A Report of the* 

Experiment on EAP Reading and Discussion Course for PhD Students: A Research Based on Grounded Theory, the author used grounded theory to generate the research conclusions. The article investigated PhD students taking part in a course of EAP Reading, Discussion and Learning strategies. The article was chosen as an example of qualitative research because the author of the article interviewed teachers for the data, and since one of the main features of qualitative research is to gain the detailed description of the study from the subjects' perspectives. In addition, in ESP and TESOL field, any approach that is based on the data would be within the grounded theory tradition (Richards) 2003. So it is important that researchers from ESP field are able to understand the grounded theory approach.

The advantage of using grounded theory is that it generates theory from real-life situations; the researcher can obtain data from what is relevant to the research question (Glaser 1996). In the article, grounded theory is suitable for this study, because the question of how to enhance the English learning motivation of PhD students is raised from the actual difficulties faced by the teachers. The author used interview methods to collect the data and analysed it by a grounded theory process that included categorising, comparing, classifying, theorising, and then the theory of how to promote the English learning motivation is generated. By using this grounded theory, the author could get the data from his workplace and use the result to better serve his work.

Indeed, there is some weakness in using this method. As researchers do not know what the theory would be, they cannot decide what to read. So they have to read widely, and that could cost them a lot of time. Another time-consuming problem is that the length of time to do the transcription of the recording of interviews. This is especially difficult when they have a tight time schedule for example, in the article, the author mentioned that the transcription of the records had to be checked repeatedly, which makes the grounded theory not very time efficient. Another weakness is that the data might be theory-saturated and not neutral, so the method is not good at making an explanation of data, but rather more effective at categorization (Silverman 1993). For example, in the article, the first thing the author did by using the grounded theory was to categorise the data and concepts, but the author did not give any explanation of the data.

On the ethical side, the author does not mention any ethical concerns, such as signing the consent form or maintaining confidentiality of the interviews. These issues should be emphasised since interviews are conducted during the research. It is reasonable to ask before the research for the participants' time and for disturbing their privacy (Flick 2009). Also, the author should give feedback to the interviewees with the purpose of improving the researcher's performance in further studies.

## The quantitative research approaches and methods:

Quantitative research is a broad term for a range of approaches and methods. Bryman (1998) states that the quantitative research places emphasis on quantification during data collection and during the period of analysis. Also, quantitative researchers use the model of positivism and view the social reality objectively. In other words, quantitative research is deductive and researchers develop hypotheses from an already known theory and later would try to prove it during the study (Rasinger 2013). The quantitative research method could be used in many fields such as in the education area or in the chemistry industry and the health industry field. The main methods of quantitative research are through surveys, experiments and questionnaires.

The underpinning theory of the quantitative research is positivism. Positivism is a belief that methods of the natural science are suitable to fit the research of the social sciences and only the observable phenomena can be taken as knowledge. In addition, the scientific knowledge should be from the verified facts and science must be conducted objectively (Bryman 1988).

## **Advantages**

There are some advantages of using quantitative research. First, by using quantitative methods, numerical change can be accurately studied. Second, it is easy to find the factor which could influence the state of phenomena by adapting quantitative methods which make it especially suited to test the hypotheses; and lastly, the results of quantitative research could be generalized and replicated (Muijs 2011).

# **Disadvantages**

There are some pitfalls to using quantitative research. According to Bryman (1988), in quantitative research, artificial accuracy may be presented by the researchers using the measurement tool. Also, it is hard to connect the quantitative research to everyday life, as the quantitative research relies too much on the instruments and analysis of the variables.

List of examples of journals from both national and international to discuss the quantitative methods used in ESP.

# **Example 1 from an International Journal**

The experimental research method is one of the most popular methods used in the quantitative research in the ESP field. Teachers especially favour this approach for their classroom research. Thus an article which uses an experimental research method has been chosen to study this research method.

From the article Exploring the impact of English-medium instruction on university student academic achievement: The case of accounting, the author used an experimental research method. The experimental research process means that the researchers manipulate and control one factor and change the others, then measure the result. Cohen and Manion (2011) suggest that the main character of experimental research is that the conditions are deliberately controlled and manipulated by the researchers, thus an intervention and measure are introduced to measure the difference. The independent variable is the act of changing of one variable, while the effect of observing another variable is called the dependent variable. In this article, the author has two control groups - one group of students was taught in English while the other group was taught in their mother language. But since both two groups of students were in the same university, studied the same academic subject and were taught by the same teacher and had taken the same assessment, then the design was such that the results could be compared. The author of this article was exploring to see if the teaching of Accounting through English would affect the final marks of the students' academic results. The work requires a precise quantification method to point out its effect. So using a quantitative research method is an effective way to find the result.

Muijs (2011), indicates that the main advantage of doing experimental research is that researchers can have control of external elements. This allows the researchers to make a strong claim about which factor affects the event, thus the causality is found. In order to have an effective control of the experiment, the author of the article made sure that the external

factors were the same, except the author had a major control on the variable which one group of students was taught through English and the second group was taught the same subject using their native language. So the causality outcome of whether the English mediate teaching could affect the academic results can be found.

Of course, there are downsides to using experimental research. First, it takes a large amount of time to conduct the research. The experimental research in the recent article was very time-consuming as it took many years to finish. Secondly, the result could be affected by human error. The cause-effect in the real-life experiment setting is likely to be affected by other factors and influences, so it could make the relationship hard to predicate (Muijs 2011). In this article, if an error happens on behalf of the teacher or student, it could alter the result and sabotage the validity of the research. Since more than four hundred students participated and the range of experiment time was so long, there is a greater chance of having the errors which could affect the result.

There are some ethical concerns regarding experimental research methods. Unfortunately, there was no informed consent during the experiment. The participants, which are the students, should have had the right to know they are part of this experiment, yet this is not mentioned in the article. Yet since all the students' and teachers' name were anonymous, the author did keep the ethical rule of confidentiality. And last, the article did not mention that any feedback was given to the teacher and students. It would be a sign of respect to have given feedback to the participants.

# **Example 4 from a Chinese Journal**

Another quantitative research method often used by researchers is the survey. This method could be a convenient way to collect ideas and opinions in an ESP study. So, learning how to use the survey method properly is necessary and hence an article using survey method has been chosen.

The article A Study of the Judging Criteria for Academic British Parliamentary Debate Tournaments is a quantitative research article because the study it describes places emphasis on quantification during the data collection and period of analysis. In the article, the survey research method is used to collect the data. The nature, standards or relationships amongst certain conditions and events can be identified or explained by using the survey method. It is a way of collecting data from participants in certain situations about what they do, how they think and what they are (Balnaves, Caputi 2001). The form of the survey is usually through a questionnaire. In this study, the survey is used to conclude the rules of the judging criteria of the academic British parliamentary debate tournaments. One hundred and twenty questionnaires were sent out to Judges and debaters in an English debate competition in China, and the result is analysed by the software SPSS. The author has chosen an effective research method for this study because the survey is a time-saving method to collect data for the research and allowed the author to finish the study within less time than other methods.

The main advantage of using the survey method for this study is that it is very efficient. For example, the data could be gathered at one time. The questionnaires were given to the judges and debaters on the spot of the debate training. The 120 questionnaires were given out and 110 were retrieved, the ratio is 91.8%, which is very high. The second advantage of the survey method is that data could be taken from multiple choices. In the article, five options could be chosen from the questionnaire, which is very convenient for data collection. Also in this way,

all the participants were given the same questions, so the standardised answers could be collected. An important advantage of the survey method, which the author mentioned in the article, is that a pilot was first conducted to collect the feedback and this enabled the revision of the questionnaire to be made more accurate for the formal research.

But one of the weaknesses is that if the questionnaire is designed poorly, it can affect the validity of the research. But in the article, the author has fully considered the issue and made a report to support the consistency and stability of the research. As stated in the article, it is shown that the Cronbach's Alpha is 0.983, which means the validity of the survey is very high.

Unfortunately, in the article, the author does not mention any ethical concerns. In the questionnaire design, there are some ethical concerns that the researcher may have needed to consider. First, the informed consent should be signed. Second, the participants should have the right to withdraw the research from any time that they like. Third, the participants should be guaranteed the confidentiality and that the participants would not be harmed (Cohen, Manion et al. 2011). The good thing is that even though the author did not mention the confidentiality ethical concern, there was no mention of the participants' names in the article.

#### Mixed research methods.

The new trend in ESP research is the use of mixed methods, which combines both quantitative and qualitative research. Caplan, N.A. and Stevens, S.G., (2017) used a mixed research method with the purpose to redesign the English for Academic Purposes program in a mid-sized American university which provides conditional undergraduate admissions. Mixed methods research focuses on gathering and analysing data from quantitative and qualitative research methods in one study (Creswell 2014). In the article, quantitative data is collected through online surveys and qualitative data is collected through open-ended comments and interviews. So it is a suitable article to study the mixed research methods.

The theoretical basis of the mixed research method is pragmatism which suggests that whatever works to research the question is the most useful approach, regardless of whether the data was collected from quantitative or qualitative research methods (Cohen, Manion et al. 2011).

The advantage of using this method is that the mixed research method can combine several different, yet related, research projects to be conducted together. In this way more time could be saved and the research could be conducted more efficiently (Morse, Niehaus 2009). In the article, a concurrent conduction and analysis of a large-scale survey and open-ended interviews was held. The author saved a lot of time and energy by combing these different research methods into one. Also, the mixed research method could help with understanding different methods and confirming the results from different sources of data (Creswell 2014). By using the different research methods in the mixed research method, the same results of the importance, the difficulty and the challenge of academic literacy and oral communication were reaffirmed.

One of the pitfalls of using the mixed method design is that due to the lack of theoretical fi, *an armchair walkthrough* couldn't be conducted (Morse, Niehaus 2009). This means being able to imagine your project, designs and possible outcomes step by step to foresee the problems. Due to this flaw, in the article, the author pointed it out that the reason why the remaining 74% of international students did not finish the survey is impossible to know. Also, a low number of GPA students is underrepresented in the sample. Some weakness of the survey instrument was found by several faculty members, so the result of the article should be treated with caution.

The mixed research method would be used more often by ESP researchers based on its convenience. More research studies contain both characters of qualitative and quantitative research, which makes choosing the mixed research method to be a realistic way for such research.

#### **CONCLUSION**

This paper is intended to study the strengths and weaknesses of qualitative and quantitative research approach and methods based on the ESP field. So, in this study, critical analysis of advantages and disadvantages of using each approach and methods, also with ethical concerns, were demonstrated. Based on the analysis of the advantages and disadvantages of the quantitative and qualitative research methods, qualitative research methods are more suitable for the ESP studies, because discourse analysis and ethnographic research methods are playing an important role in ESP studies. This could be supported by Gollin-Kies (2014) that by analysing the two most reputational ESP journals: English for Specific Purposes and Journal of English for Academic Purposes, the result shows that the qualitative method is twice or three times the number used comparing with the quantitative method. So, it is necessary for an ESP researcher to master both qualitative and quantitative research methods, especially qualitative research methods in order to conduct the research well. However, there is a limitation of this paper that the study only emphasises the key approaches and methods, it has not been able to cover all the problems and issues in this small scope study. Thus a future large scale study is needed to better explore the use of quantitative and qualitative research methods in the ESP field.

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