

RESEARCH METHODS IN DISCOURSE ANALYSIS: QUANTITATIVE, QUALITATIVE AND MIXED-METHODS APPROACHES

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Abstract: This paper presents three different research methods: the quantitative research, the qualitative research and the mixed-method research, showing the advantages and the limitations of each of them. It also provides a brief historical overview of the three methods, their main characteristics and strategies, the worldviews to which they are usually associated as well as several other factors that might affect the researcher's choice of approach. Understanding these various aspects helps the researcher when deciding upon the best method to be used in a particular situation.

Keywords: quantitative research; qualitative research; mixed-methods research; worldview.

1. Introduction

The aim of this paper is to present three methods of research: the quantitative, the qualitative and the mixed-methods approach. Although they typically belong to the field of social sciences, these methods have been successfully used in various other disciplines, including linguistics and discourse analysis.

I am going to present these approaches' strengths and drawbacks, the worldviews which are associated with them as well as their typical strategies. Understanding these various aspects helps the researcher decide on the most appropriate method in a particular circumstance.

2. Research Methods

2.1. The Quantitative Research

The quantitative research is a method of testing objective theories by looking at the relationship among variables. These variables are measured in such a way that numbers can be analysed using statistical procedures (Creswell 2009).

This method appeared during the Enlightenment, and it was used in the works of many philosophers and scholars such as: Galileo Galilei, René Descartes, Francis Bacon, Isaac Newton, John Locke and David Hume, but it was the progress of the natural sciences from the 19th century that turned it into a dominant research method (Dörnyei 2007). Before the age of the scientific reasoning, people used to rely on non-scientific methods such as: magic, mysticism, astrology, oracles, etc.

The scientific method included four stages: observing a phenomenon, asking a question, coming up with a hypothesis and checking that hypothesis. If the hypothesis was successfully verified, it became a scientific theory, if not, a new hypothesis was

sought and put to the test. The scientific method was meant to be objective, reliable and not allow the researcher to interfere with its findings and for this reason it relied mostly on numerical values and statistics.

2.1.1. Worldview

Quantitative researchers usually have a positivist worldview. Positivists consider there is only one reality, which is fixed and measurable; therefore, the researcher's objective is to find a singular, universal truth. This perspective allows no subjectivity from the part of the researcher who must remain detached in both the gathering and the interpretation of the data (Dörnyei 2007). This worldview is also known as the scientific method, the science research or the empirical science. The scientific method has the following characteristics: it is deterministic (i.e., the causes determine the outcomes), it is reductionist (i.e., it reduces ideas into smaller ones which can be tested) and it is based on empirical observation and measurement of the objective reality.

Creswell (2009) believes that researchers who have a post-positivist worldview may sometimes choose the quantitative method as well. Just like positivists, they look for objectivity, but, unlike the former, they admit the fact that the researchers' background knowledge and their theories may influence the observed subject.

2.1.2. Characteristics

First of all, as I have already mentioned, quantitative research is similar to the scientific method used in the field of natural sciences. That means that the researcher is looking for objective answers to questions he/she has defined with care and precision. However, there are significant differences between the natural sciences and the social sciences or any other discipline which involves measuring people's characteristics or reactions. Taking into account the fact that human beings can be unpredictable and their beliefs, relationships, behaviour, interactions may vary, it is difficult, perhaps even impossible to come up with theories or laws that would include them all.

In order to eliminate subjectivity at every stage of the research process, the quantitative researchers use a lot of standardized procedures (rules and canons) that will help them evaluate the objective reality. Higher reliability can be achieved by comparing different studies that have the same result or by duplicating the research study.

The final results of the research can be used for generalisations of concepts or phenomena, because they are built on variables that capture the common features of groups of people rather than on individual cases. The quantitative researchers are interested in discovering universal laws by establishing the relationship among different variables that produce certain effects.

That is why the data is collected using very structured instruments and it consists of numbers and statistics. Numerical data is very useful when the content is very well defined and when the variables are limited. However, in larger contexts, numbers are meaningless if they are not backed up by a contextual analysis.

Another important feature of the quantitative research is the a priori categorization. (Dörnyei 2007). Before the researchers begin collecting the data, they must know exactly

what they will be looking for and they must design all the facets of the study. All the definitions and value descriptors must be clearly established so that the subjects of the research have a common understanding of what they are asked and that the results be relevant.

2.1.3. Strategies

The strategies associated with the quantitative research include several types of experiments. Creswell (2009) identifies two approaches to inquiry: the survey research and the experimental research.

The survey research is an approach in which the researcher studies a sample of the population in order to get a numeric description of their opinions or attitudes. It includes questionnaires but also very well-structured interviews.

The experimental research is an approach in which the researcher wants to determine if a certain treatment can influence an outcome, by providing that treatment to one group but not to another and then comparing the results.

In conclusion, the quantitative research has the advantages of being systematic, rigorous, focused and controlled. Its biggest weakness is that, by working with numbers and averages, it can become simplistic and reductionist, with a rather limited exploratory capacity.

2.2. The Qualitative Research

Unlike quantitative research, the qualitative one is much more difficult to define as it has no theory or set of practices which are distinctly its own. In spite of that, there are many features which characterise a qualitative study. "Most quantitative data techniques are data condensers. They condense data in order to see the big picture. Qualitative methods, by contrast, are best understood as data enhancers. When data are enhanced, it is possible to see the key aspects of cases more clearly" (Ragin 1994, p. 92).

Qualitative research is said to have its roots in various disciplines, primarily sociology, anthropology and philosophy. The first known descriptive observations, interviews and other forms of qualitative methods can be traced back as far as to the ancient times because they appear in the writings of many historians, philosophers and travellers, such as Herodotus or Marco Polo (Wax 1971). The qualitative methods started to be used in sociology at the beginning of the 20th century, although they were not considered highly scientific at that time. The basic ideas and principles appeared in 1967 with the publication of Glaser and Strauss's "The Discovery of Grounded Theory: Strategies for Qualitative Approach". Qualitative studies have significantly increased in recent years, especially those focusing on topics such as: race, ethnicity, gender and identity (Dörnyei 2007).

2.2.1. Worldview

Qualitative researchers often have a social constructivist worldview. This means they believe that people interpret their experiences in a highly subjective manner that leads to the emergence of a variety of interpretations. These subjective perspectives can be

quite complex as they do not develop on their own but are formed through interaction with other people while taking into account historical and cultural norms. The social constructivist researchers admit that their interpretations are influenced by their own background and previous beliefs (Creswell 2009, Crotty 1998).

Postmodernist ideas are also present in qualitative research. The postmodern paradigm is ideological, and it questions the rationality and the scientific method of the early 20th century. "In the postmodern world, everything is 'contested'. What has been considered true, real or right can be questioned" (Merriam & Associates 2002 quoted in Heigham & Crocker 2009).

Another perspective which is normally associated with the qualitative research is the advocacy and participatory or the emancipatory approach. It appeared in the late 80s – early 90s from the desire to change the lives of those who had been socially marginalised. These ideas are at the foundation of critical theory, which considers society to be oppressive and aims not only at understanding but also at transforming it. Researchers who share this view believe that the power asymmetries need to be addressed before anything else. That is why they address very specific issues such as: power, oppression and inequality and politics mingles with research at every stage of the process (Creswell 2009, Richards 2003).

2.2.2. Characteristics

In contrast to quantitative research, qualitative research does not have standardised procedures and it is subjective in two ways. First of all, its objective is to explore the participants' views on certain situations and therefore qualitative research is built on feelings, opinions and individual experiences. Secondly, it has an interpretative nature, i.e., the end result is the product of the researcher's subjective interpretation of the data. In fact, one of the major concerns regarding this method is related to the researcher's degree of subjectivity when analysing the information. When qualitative researchers interpret the data, they bring along their own identity, which means the findings of the research could be influenced by their age, gender, sexual orientation, ethnicity, religious or political beliefs, research experience, etc. This is why I believe integrity to be one of the essential features of any researcher, who should constantly reflect on this aspect and, while acknowledging the fact that he or she cannot be entirely impartial, must not manipulate the findings in order to obtain a particular result. If the qualitative researcher manages to do that, his or her being the main instrument of research can have several advantages such as: adapting very quickly to various research settings and allowing the study to take unanticipated directions, collecting a lot of data and getting simultaneous feedback, which would allow him/her to get a clearer understanding of the answer, especially if there are subtleties present. Although the lack of standardised procedure might be too confusing for the unexperienced qualitative researchers, this absence of canons and rules allows them to explore a problem much further than the quantitative method would ever permit.

If quantitative researchers use large samples of participants, qualitative researchers work with very small samples. This has its own advantages and drawbacks. Working with fewer participants allows the qualitative researcher to explore more complex problems in depth. However, the small sample size might make it difficult if not

impossible for him/her to generalise, not to mention the fact that there is the danger of building either too narrow or too complex theories.

Where quantitative researchers use numbers and statistics, qualitative researchers use a wide variety of data such as: recorded interviews, many kinds of texts (field notes, diaries, documents, etc.) and images (photos and videos). The advantage is that it offers a very rich research material; the downside is that it can be time consuming.

Because it is very flexible and open to any new directions that might emerge during the study, the qualitative research begins with a very large focus, which is narrowed down gradually, not a priori like in the case of the quantitative research. This is actually very useful in counterbalancing the possible effects of subjectivity that I have mentioned before. If the researcher does not begin the study from a preconceived idea, he or she is more likely not to be biased. The disadvantage is that the inexperienced researchers who begin their study without a clear direction might get side-tracked.

2.2.3. Strategies

There are five qualitative approaches to inquiry identified by Creswell: the narrative research, the phenomenological research, grounded theory research, ethnographic research and case study research.

Narrative research is an approach in which the researcher collects extensive information about the lives of one or more individuals and then reorganises it in a general type of framework. There are many ways in which this information can be analysed and rearranged, but the researcher needs to spend a lot of time in the company of the participant(s) in order to get a better understanding of their experiences and identify the most important details. (Creswell 2009)

Phenomenological research is an approach in which the researcher looks for the essence of human experiences about a concept or a phenomenon. The main advantage of phenomenology is that it can provide a deeper understanding of a certain phenomenon. However, it requires the researcher's understanding of the broader philosophical assumptions and their identifying these particular assumptions in their study (Creswell 2009, Moustakas 1994).

Grounded theory research is an approach in which the researcher generates an abstract theory of a process, action or interaction which is grounded on the views of the participants. (Creswell 2009)

Ethnographic research is an approach in which the researcher's aim is to describe and analyse certain practices and beliefs of different culture-sharing groups. It is extremely useful in understanding social processes from the participants' perspective. Its biggest drawback is that it requires a substantial time investment that many academic researchers cannot afford. Moreover, these researchers must have an extensive understanding of cultural anthropology, not to mention the fact that they need to be highly sensitive to the needs of the participants and consider the impact their study might have on the people and the places being explored. (Creswell 2009)

Case study research is an approach in which the researcher explores in depth an activity, an event or a process of one or more individuals within a real-life context or setting. This case may have a narrow scope (a procedure applied within a school) or a broad scope (a procedure applied within the E.U.). The researcher may face two

challenges: identifying the case and selecting which system to study (Creswell 2009, Stake 1995).

2.3. Mixed Methods Research

As the name clearly points out, the mixed method research is a combination of the two main types of research: the quantitative research and the qualitative one.

Mixing different approaches and types of data can be traced back to the beginning of the 20th century, but just like in the case of exclusively qualitative studies, mixed research was frowned upon and not considered scientific at that time. An explicit description of the multimethod research did not appear until decades later, when more and more researchers started to use it. In 1994, Creswell wrote several chapters about it in his book on research designs (Dörnyei 2007) and since then it has only gained in popularity.

Researchers who make use of the mixed methods research usually support their choice with the claim that this approach allows them to triangulate their findings. The term “triangulation” is borrowed from military strategy to describe the exploration of the same point from different perspectives. Denzin (1978) used it to promote the use of mixed methods which could validate the researcher’s findings. He identified four types of triangulation: the triangulation of data (i.e. the use of different data sources), the triangulation of theories (i.e. the use of different perspectives for interpreting the data), the triangulation of investigators (i.e. the use of several investigators/ evaluators) and the triangulation of methodology (i.e. the use of mixed methods in the same study). Cohen, Manion and Morrison (2000) added three more types: time triangulation (i.e. the use of both cross-sectional and longitudinal approaches – Cross sectional studies collect the data from different groups at one point in time, while longitudinal studies collect data from the same group at different moments in time), space triangulation (i.e. the use of cross-cultural studies, which involve testing a theory among different cultures in order to overcome the limitations of research carried out within a single culture) and combined levels triangulation (i.e. the use of multiple levels of analysis: individual level, group level, organizational level, societal level).

2.3.1. Worldview

Researchers who prefer mixed methods have a pragmatic worldview. Instead of focusing on a particular method, they look at the problem from different perspectives and approach it from all possible ways in order to understand it (Creswell 2009).

Neuman believes that each method brings something useful and that a good researcher should not be quick to judge either of them by the standards of the other and take advantage of what they both have to offer.

“The qualitative and quantitative distinction is often overdrawn. Too often it appears as a rigid dichotomy. Adherents of one approach judge the studies of the other approach on the basis of its own assumptions and standards. The quantitative researcher demands to know the variable used and the hypothesis tested. The qualitative researcher balks at turning humanity into cold numbers. A well-versed, prudent social researcher will understand and appreciate each approach to research on its own terms and recognize the strengths and limitations of each. The ultimate

goal of developing a better understanding and explanation of the social world comes from an appreciation of what each has to offer” (Neuman 2014, p. 200).

2.3.2. Characteristics

It is obvious that the mixed methods research combines characteristics belonging to quantitative research and qualitative research, but there is not one single way in which this can happen. Creswell (1994) identifies three main design models: the sequential model (which is made up of two separate phases, one of which is quantitative and the other qualitative), the concurrent model (which combines the quantitative and the qualitative approach throughout all the stages of the research) and the transformative model (which aims at changing reality and can be either sequential or concurrent).

Doing mixed methods research has a lot of advantages, the most evident of which being that it brings out the best of each paradigm, combining quantitative with qualitative strengths. It also allows the researcher to do a multi-level analysis by giving him or her access to data about both the general context (quantitative data) and the individual one (qualitative data). This helps the researcher understand a certain phenomenon much better and address more complex aspects, not to mention the fact that triangulation helps improve the validity of a research. Moreover, combining quantitative with qualitative methods often leads to the results being accepted by a wider audience because they offer something to everybody. Nevertheless, even mixed methods research has its own drawbacks. Choosing this approach is sometimes too challenging even for the experienced researchers who are trained either in the quantitative or the qualitative method and do not have the necessary skills to handle both of them. Another disadvantage is that it offers too many possible combinations of methods, many of which might result in the “anything goes as long as you mix them” mentality (Maxwell & Loomis 2003 quoted in Dörnyei 2007).

2.3.3. Strategies

Mixed methods research approaches are not as well established as those of the quantitative or the qualitative strategies. In fact, this is one of the main criticisms to this method: the fact that researchers sometimes mix the methods any way they want and that anything is allowed. This has determined mixed methods theorists to shape more specific procedures. Creswell identified two main approaches: the sequential mixed methods and the concurrent mixed methods (in which he incorporated the transformative variant that he had previously considered separate).

The sequential mixed methods procedures (also known as the two-phase model) are those in which the researcher uses one method to expand the findings of the other method. That means starting with a method and ending with the other. For example, the researcher starts with a quantitative experiment and continues with a case study or, conversely, the researcher begins with qualitative interviews followed by a quantitative survey which might help generalise the results. The sequential mixed methods procedures can be: *sequential explanatory*, *sequential exploratory* or *sequential transformative*. The *sequential explanatory* strategy is preferred by researchers leaning towards quantitative methods, who collect and analyse quantitative data in a first stage of the study and then add qualitative data to explain and interpret the first findings. This

method is very easy to use because the two stages are very clear and separate, but it may involve an extensive period of data collection, especially if one method is not dominant. The *sequential exploratory* strategy begins with collecting qualitative data and then using quantitative data to measure and confirm the findings of the first stage. Similarly, to the sequential explanatory strategy, the sequential exploratory approach is very easy to implement, and it gives more credibility to the study, but it is time consuming. The *sequential transformative* strategy has two distinct phases, but it also has a theoretical perspective that guides the entire research. Just like the other two sequential strategies, it is straightforward but time consuming (Creswell 1994, 2009).

The concurrent mixed methods procedures are those in which the researcher mixes quantitative and qualitative data throughout all the stages of study in order to get a better understanding of the research problem. The concurrent mixed methods procedures can be *concurrent embedded/nested*, *concurrent triangulation* or *concurrent transformative*. The *concurrent embedded/ nested* strategy has a primary method and a secondary one which is embedded in the first and has a supporting role. What is particularly interesting about this approach is that the two methods can address different questions. This procedure has the advantages of saving time (the researcher collects quantitative and qualitative data at the same time) and of offering a larger perspective on a certain situation, phenomenon, etc. The *concurrent triangulation* strategy uses the two methods simultaneously in order to confirm the findings and it is usually used to compensate for the weaknesses of the main methods. It has the advantage of saving a lot of time and of validating the results. However, it may be too difficult for an unexperienced researcher who would have to work with and compare different kinds of data. Just like the sequential transformative approach, the *concurrent transformative* strategy is based on very specific theories, and it may have either the embedded or the triangulation design characteristics, which means it shares their advantages and disadvantages (Creswell 1994, 2009).

Apart from the researcher's general worldview, the characteristics and strategies of each method, there are other factors which might influence the choice of methodology.

The nature of the research problem plays a very important role. If there is a lot of literature on the subject and many of the variables are already known, a quantitative experiment might be preferable, while in the case of an exploratory study, full of unknown variables, one is more likely to choose a qualitative approach. A mixed method design should be chosen when neither the quantitative nor the qualitative method offers everything the researcher needs in order to understand a problem.

The researcher's own personality and experience could also influence the choice of method. Quantitative researchers are usually more comfortable with rules and procedures, they prefer more formal language, they keep their distance from the problems they study, they have a lower tolerance towards ambiguity, and they also require knowledge of computer statistical programs. Qualitative researchers, on the other hand, are more comfortable with the absence of rules and procedures, their language is less formal, they constantly interact with the subject they study, they have a higher tolerance towards ambiguity, and they need computer assisted text analysis skills. Mixed methods researchers should have some experience in both approaches and also be flexible enough in order to enjoy both the structure of quantitative research and the freedom of the qualitative research.

Other factors which might influence the choice of method are: the audience of the study (both quantitative and qualitative researchers might prefer a certain audience), the time available for research (mixed-methods research is extremely time consuming,) and the access to certain sources of information.

3. Conclusions

The quantitative and the qualitative research method investigate different claims to knowledge. The former tries to measure reality as objectively as possible, while the latter allows the researcher to understand more complex phenomena. The mixed methods research is not a replacement of the other two methods but rather an extension of them both. All three approaches have several advantages as well as limitations, which the researcher should be aware of and take into account when choosing the most appropriate method in a particular situation.

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