Revisiting the Dichotomy of Educational Research Paradigms: English Language Teaching Underpinning*

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Abstract

In this paper, educational research paradigms in relation to English language teaching are elucidated and the dichotomy between the two main paradigms challenged. In the first part, the writer looks into the division of two different paradigms: the positivist and the interpretive. The writer analyses each paradigm, examining the methods, ontology and epistemology associated with it, including data collection instruments. The pros and cons of each paradigm are also presented critically. Finally, a conclusion is reached by questioning the segregation of the educational research into two distinct mutually exclusive schemes.

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Introduction

Educational research is principally separated into two different paradigms. The term paradigm was employed widely by Kuhn (1996) to investigate changes in key ideas in natural sciences. Such extensive use led to perplexity over its definition. He defined a paradigm as a disciplinary matrix, which the theory is one important part of, comprised of four general categories: symbolic generalizations; metaphysical paradigms; values; exemplars. Within this matrix, it is metaphysical paradigms that are closest to areas such as epistemology and ontology.

Scotland (2012) suggested that a paradigm can serve a set of systematic and theoretical beliefs consisting of a theoretical framework, in which case scientific theories can be tested, evaluated and revised.

The defined term thus appears to describe movements within natural science. However, researchers have used the term 'paradigm' in social science because they believe that the use of certain methods in social scientific research carries with them implicit stances on the nature of social reality and what constitutes human knowledge of this reality.

In English Language Teaching (ELT), the two paradigms also play an important role as groundwork when it comes to conducting research. Many ELT researchers and educators make use of research tools purported by each paradigm to find facts, understand reality and even develop theory. At present, some combine or mix these instruments in hope of attaining deeper, more reliable investigation. Next, a positivist paradigm will be introduced and explicated.

Positivist Paradigm

Where positivists apply their beliefs to social science, they implicitly make specific postulations about the nature of reality and the nature of knowledge. They assume that social reality is independent of human minds and is governed by general laws and relationships. Knowledge of this social reality is discoverable and takes the form of objective truth. Philosophically, they often take a realist position, believing that the objects of thought have an independent existence and are not dependent on a

knower. As researchers, they identify themselves as observers of social reality who can discover its rules through the application of scientific experimental protocols.

Researchers working in the positivist paradigm aim to find laws or law-like generalisations, which elucidate observable human behaviour. This has implications for their research design. Their research usually takes the form of experiments and work with quantitative data.

Hypotheses

One example of a typical experiment on the investigation of phenomena starts with the creation of a hypothesis. Cohen et al. (2001) define the hypothesis as a national statement of the relations between two or more variables. The criteria for a good hypothesis are that it is a statement about the relationship between two or more variables and that it has clear implications for testing the relationship. There are also two additional criteria: the hypothesis is compatible with current knowledge and that it is expressed as economically as possible.

Afterwards, an experimental group of subjects is selected and the hypothesis is tested, using well-developed statistical tests and conventions. The hypothesis is then accepted or rejected. If it is accepted, then it is considered generalizable. The process of proving or disproving hypotheses parallels the method used in the natural sciences. Between a scientific and a non-scientific statement is the criterion of falsifiability. A scientific statement is falsifiable whereas a non-scientific statement is not. Within the positivist paradigm to the social sciences, this also holds. Two key concepts in this kind of research are validity and reliability.

Validity and Reliability

Validity deals with the issue of whether the experiment proved or disproved what it set out to test. For example, a researcher may set out to experiment whether Thai girls are more intelligent than Thai boys at age 15. To do this he/she may use a test incorporating maths questions and English language questions on a sample of

Thai boys and Thai girls. The results of the test may show a significant difference between the results of the boys and those of the girls, leading the researcher to conclude that Thai girls are more intelligent than Thai boys at age 15. However, readers of the research may criticise its validity, pointing out that intelligence cannot be simply measured based on an ability to answer written verbal and mathematical questions. The experiment does not prove what it set out to prove, even though the testing indicates a significant difference between boys and girls.

Reliability focuses on a slightly different area. It is a measure of the rigidity of the experimental method in the research whether the experiment can be repeated and yield the same result if done again. In the previous example, the experiment may have been reliable but not valid. However, if the experiment is considered to be unreliable, it cannot be valid.

Measurement Scales

The positivist paradigm uses quantitative data. It is important to consider the types of data that can be collected, as this has implications for the use of instruments for testing within the positivist paradigm. Peers (1996) cites four different scales: nominal, ordinal, interval and ratio. In a nominal scale, observations are placed into categories. The categories are well-defined, mutually exclusive and thorough. The data can be compiled in the form of frequency counts. An ordinal scale introduces the idea of order. Therefore, categories can be ranked. However, the intervals between scores are not necessarily equal. For example, the final placement of runners at the end of a race requires the use of an ordinal scale. As for an interval scale, there is labelling, ordering and equality of units of measurement. However, there is no zero point. Therefore, numbers cannot be multiplied or divided. Finally, a ratio scale has all the qualities of the interval scale. In addition, it has an absolute zero point.

Using parametric and non-parametric tests

Corresponding to Cohen et al. (2001), parametric tests are designed to represent the wider population which can be a group or a nation. They make assumptions about the wider population and the characteristics of the wider population. In using parametric tests, the researcher assumes that the distribution of scores in the population is normally distributed and that the scores are part of an interval scale. In contrast, non-parametric tests are not designed for generalisation. They are designed for specific populations and they can be used with ordinal scales.

Pros and cons of the positivist paradigm

A number of criticisms have been made of the positivist paradigm. Some critics have pointed out that the paradigm uses methods established in the natural sciences. Natural science deals with the material world which is “out there”. The nature of social reality is different and there is no social world “out there” independent of human minds. Social reality is shaped by individuals and it involves complex nets of ideas, groups of people and their surroundings. Positivists are limited by their paradigm in at least two senses. They tend to focus on observable behaviour and their hypotheses involve relatively few variables. Despite working within the positivist framework of a determined social world where humans are not individual agents but mechanistically respond to stimuli, men and their social world are too complex for the causes of their behaviour to be reduced to one or two variables.

The strengths of the positivist paradigm sit within its claims. For a positivist, it is a means of establishing the objective truth. Using inferential statistics, the results of testing small groups can be expanded to wider populations. With continued testing, a depiction of human behaviour can be built and relationships between key factors in human behaviour can be established.

Detractors have questioned the positivist paradigm for its dehumanizing consequences. Human beings are treated as experimental objects and the researcher isolates himself/herself from the world studied. Subsequently, an interpretative paradigm will be discussed.

Interpretative Paradigm

Often compared on the polarity, the interpretive paradigm takes different ontological and epistemological positions from the positivist paradigm. Interpretive researchers do not see the social world as it exists yet perceive that it is constructed by human beings. As it is people who define their social world, interpretive researchers try to discover how humans see and understand this world. The researcher thus is part of the study as a partaker interacting with the partakers. The research serves as the creation of meanings amid the participants, and the researcher is one of those involved.

Interpretative Methods

The methods used by interpretive researchers differ greatly from those of positivist research (Scotland, 2012). While positivist researchers start their research with a hypothesis, interpretivists use more open-ended research questions. Moreover, interpretive studies are often idiographic, using small numbers of participants. This is because the purpose is not to generalise, but to discover the meanings which participants place on the social situations under study.

In the process of the research, participants often create new meanings and make new connections to ideas. Interpretive research is often called heuristic. By our very nature as human beings, we are able to communicate with one another and in interpretive research, such forms of communication are given priority. It is also connected with hermeneutics as Hermeneutics originally involved the study and interpretation of ancient texts, but in interpretive studies, this can be extended to the study and interpretation of qualitative data.

Interviews and Questionnaires

One of the key implements in interpretive research is the interview. Interview types can fall into three categories: structured; semi-structured and unstructured. In a structured interview, the interviewer has a defined set of questions for the

interviewee. In the semi-structured interview, the interviewer has a set of questions but there is more room for developing ideas. The questions act to loosely structure the interview process but the interviewer is less controlled than in the structured interview. In the case of an unstructured interview, the interviewer does not have a pre-prepared set of questions.

Questionnaires are another way of obtaining qualitative and quantitative data. Questionnaires are used in both positivist and interpretive research. In the interpretive paradigm, there is more flexibility in the use of questionnaires. They can be used to generate qualitative data from larger groups of people than the more time-consuming interviews. They can also be used to confirm the findings of interviews with larger groups of people. This does not necessitate generalisations from small groups to larger populations, rather the results of the interview data can be used to focus the questionnaire. Interpretive researchers may also use succeeding questionnaires to gain depth in the research.

Ethnography and Case Studies

Ethnography is on the interpretive side of the paradigm division. The purpose of ethnographic research is to produce detailed pictures of events or cultures without the need to worry about how representative the situation is or what the implications might be in terms of other events or cultures. The ethnography from this stance is a stand-alone happening that is to be assessed by the depth of its depiction and the complexity of its description.

Where the argument is made for generalisability, this takes a different form from positivist generalisability. Interpretive generalisability involves heuristic methods to build frameworks of analysis and for interpretation.

Case studies are defined by Denscombe (1998) as strategies rather than methods. In the case study one particular group or organisation is selected and studied thoroughly and events are studied as they naturally occur. The researcher aims to gain depth in one area rather than the shallower breadth through the use of surveys.

Grounded theory

One method of conducting interpretive research is grounded theory where ideas are generated from the analysis of data itself. The researcher does not test a theory against qualitative data but uses data to develop a theory. However, it is important to consider what is meant by grounded theory as there is a danger of implicitly accepting a blank slate view of the mind. This is because usually a researcher has a highly trained mind and is possessed and affected by a large number of theories. Thus, in grounded theory, the researcher consciously tries to place theories at the back of his/her mind, collects data in response to open questions, and then analyses the data, trying to find or adapt theory to create the closest aptness with the data.

Validity

Within the framework of this paradigm, the researcher's findings are an interpretation of the events within the study. Validity issues are therefore slightly different from those of the positivist paradigm. The conclusions drawn from the research should be backed up by the qualitative data so that the study is coherent. To strengthen validity claims, triangulation can be used, where researchers use two or methods in their investigations. If the different methods reinforce the same conclusion, then validity claims are fortified.

Pros and cons of the interpretive paradigm

Cohen and Manion (1997) address critics of interpretive approaches (Rex, 1974; Giddens, 1979). Arguments vary from the concerns about false consciousness to the relativism of the paradigm.

Cohen et al. (2001) provide two examples of studies in a car factory which showed completely different findings. One revealed a virtuous circle of organizational practices that valued leniency and team spirit while the other found a vicious circle of mistreatment and manipulation. It is concluded that both forms of

the same reality co-occur because the reality is multi-dimensional. Nevertheless, for a positivist, such inconsistent findings are intolerable.

The strengths of the interpretative paradigm come from its naturalistic approach, relying on natural forms of human communication, and its acceptance that the social world is complex and cannot be reduced to the relationship between a small numbers of variables. It is able to accommodate human change over time.

Discussion of the paradigm dispute

If paradigms are compared using Guba and Lincoln's (1989) division into ontology, epistemology and methodology, the following observation could be made:

For the positivist paradigm, there is an objective world independent of human minds. It is an ordered world, governed by general laws and relationships. In terms of knowledge, it is about establishing the objective truth. Methodologically, the truth is revealed through the testing of hypotheses using rigorous quantitative methods. If proved correct, the hypothesis is generalizable. The experiment and its results can be replicated.

On the other hand, under the interpretive paradigm, ontologically, there is no objective reality. Reality is constructed by individuals and therefore, as each individual is different, there are multiple realities. Epistemologically, knowledge is individually construed and socially subjective and methodologically, researchers seek the perspectives of others through their own subjective interpretations.

It would appear that scientific statements are those which are falsifiable. However, the idea of paradigm shifts within science, where established theories supported by the mainstream of scientists are overthrown by competing theories which are incompatible with them has to be taken into account. This counterpart's Berlin's (1999) conception and criticism of the jigsaw puzzle of knowledge, whereby those who possess the right qualities or techniques are able to piece together the absolute objective truth. There is, therefore, a modern conception of science that is non-positivist, which has a strict adherence to method but open-mindedness as to result.

Social reality is full of ideas and processes which are the developments of human beings. Many can be altered by humans, whose beliefs and perceptions may change over time. While criticism of the use of statistical methods in sociology is valid, it is difficult to claim that the social world is in the same way as the objects of study of the natural sciences.

Whilst there is undeniably a strong debate on paradigms, some arguments for mixed methods can be considered. Nunan (1993) claims that within the debate the interpretivists have been most vociferous in their criticism of the positivists. This, he believes, is due to the experimental researchers' need for qualitative data in order to build the theoretical frameworks within which they can conduct their experiments.

In contrast to this, Hammersley (1990), who intended to reverse the process of moving from qualitative data gathering and analysis to statistical experimentation, suggested that the use of statistics could be a preliminary instrument to find out significant factors in the complex processes which social psychology is seeking to disentangle.

Thus, methods from the two paradigms are sometimes used in triangulation. Cohen and Manion (1997) note that in its use of multiple methods, triangulation may utilize either normative or interpretive procedures; or it may draw on methods from both these approaches and use them together.

Conclusion

The writer pointed out that educational research paradigms in the discussion are mutually exclusive with ontological and epistemological positions in conflict. The two paradigms categorized are the positivist and the interpretive. It is noted that science is full of interpretation and there are periods of conflict involving a reassessment of the models used to investigate the world. It can be defined more as a process than a product. However, whether experimental research involving inferential statistics in the social world can take a non-positivist stance is unresolved. Research in both areas requires the design of conceptual frameworks. Nonetheless, the design of the frameworks in experimental research precedes the data gathering, while in

interpretive research the framework emerges from the data. Neither type of study emerges from a blank position as humans are born to learn to think in a world full of ideas and processes.

As an English teacher dealing with the intricacies of university life, the writer prefers a heuristic approach as it tends to be more practical as a form of the investigation but an open mind should be kept. The natural sciences investigate an external world through human interpretation and strictly agreed procedures. However, when it comes to socio-educational research, human society manifests itself in multiple ways and exists within the external world. While interpretive criticisms of experimental methods in education are strong, it remains to be seen whether the gap between the paradigms will be bridged and whether this will bring about a reconsideration of the paradigms per se.

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