

Main Approaches to Educational Research

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Abstract – The purpose of this paper is to discuss three approaches to educational research. First, I will start with a discussion of the research paradigm, providing its definition and its role in conducting research. Then I will discuss positivism, interpretivism and the critical theory approach to research in terms of their underpinning assumptions, quality standards and limitations. I will follow that with my own position regarding research.

Keywords – Critical Theory, Interpretivism, Paradigm, Positivism.

I. INTRODUCTION

The term paradigm was first termed by Thomas Kuhn who introduced it as an overall historical research framework (Crotty, 1998). The term paradigm receives varied attention in research texts. In some texts, the paradigm is introduced at the beginning, whereas others may touch on it slightly at the end or have no discussion around the notion of paradigm at all (Mackenzie & Knip, 2006; Grix, 2004). Thus, the paradigm's meaning, its role in research and where it fits appear to be essentially ambiguous, especially for novice researchers.

A paradigm can be defined as “a loose collection of logically related assumptions, concepts or propositions that orient thinking and research” (Bogdan & Biklen, 1998, as cited in Mackenzie & Knip, 2006). Guba and Lincoln (1994, p. 108) identify three questions that help define a paradigm. That is, the ontological, the epistemological and the methodological:

1. The ontological question asks, what is the nature of the “knowable”? Or what is the nature of reality?
2. The epistemological question asks, what is the nature of knowledge and the relationship between the knower (the inquirer) and the known or the (knowledge)?
3. The methodological question asks, how can the knower go about obtaining the knowledge?

But the question is why does one's view of reality and knowledge affect the research? In fact, the researcher's intentions, goals and philosophical assumptions are inseparably linked with the research s/he conducts. Grix (2004) suggests that if a person wants to conduct clear and precise research, he needs first to understand the philosophical underpinnings that inform his choice of research questions, methodology and methods. Thus, how social reality and knowledge is viewed will lead one to how to go and uncover knowledge of a certain social phenomenon. Crotty (1998) argues that researchers can choose which stage to begin at, whether they be based on ontological, epistemological or methodological assumptions. However, other authors like Grix (2004) suggest that the ideal way to start research is by identifying the ontological assumptions which will inform the epistemology, which, in turn, will inform the methodology. All of these will determine which data

collection method needs to be implemented. Such arguments among textbook writers show the inconsistency with which a paradigm appears in the stages of conducting research, even though they agree on its importance. However, I agree with Guba (1990, p. 17), who notes the ambiguity of the meaning of a paradigm, and points out that where one stands in the process of conducting research is considered to be beneficial since such ambiguity makes it possible for researchers to reshape their research as their understanding progresses. In addition, I noticed through looking at different research articles that researchers are more explicit about their methodology and methods than their ontological and epistemological assumptions. This may be due to the fact that the lines between ontological and epistemological assumptions are not clear in theory or in practice.

Trying to classify all educational research into a few paradigms is a complex task. It can be also very challenging and confusing process, especially where some research textbooks use the terms ‘quantitative’ and ‘qualitative’ to describe various types of research. Such a classification is not helpful because it implies that the main difference between research is in the type of data collected only, whereas the main difference, in fact, is at the level of ontological and epistemological assumptions (Crotty, 1998). This paper focuses on three of the most popular paradigms today: positivism, interpretivism and critical theory.

II. POSITIVISM

Positivism, which is also known as the “scientific method”, gives emphasis to the position that the social world should be studied the way that physical phenomenon are studied. Positivism is based on a realist ontology, which postulates that “there exists a reality out there, driven by immutable natural laws” (Guba, 1990, p. 19). Thus, positivism addresses causal relationships and basic regularities between different components of the world. Positivists have an objectivist epistemology, which requires for the researcher that, in order to discover the real world, he must “put questions directly to nature and allow nature to answer back” (Guba, 1990, p. 19). In addition, the researcher should maintain a detached, objective view in order to understand the facts (Duffy, 1986). Values and other biasing factors are excluded so as not to influence the outcomes of the research.

Based on its ontological and epistemological assumptions, positivist research uses experimental and quasi-experimental methodologies (Creswell, 2007). Experimental designs make causal inferences about the relationship between an independent variable and one or more dependent variables. In experimental designs, the researcher aims to maximize the influence of the independent variable on the dependent variable and

minimize the influence of extraneous factors (Creswell, 2007, p. 315). Thus, the participants are selected randomly, the intervention is applied and outcomes are measured at the end of the experiment. However, a quasi-experiment does not require a random assignment of groups. I think a quasi-experiment is more applicable for educational settings, where the researcher utilizes a fixed group of subjects who have been grouped together for reasons other than the carrying out of an experiment (Nunan, 2005).

The data collection techniques in the positivist approach focus on gathering data in the form of numbers to enable evidence to be presented in quantitative form (ibid). They utilize tests or standardized questionnaires to measure carefully what is observed. They can also use structured interviews or close-ended observational protocols. Thus, I believe that positivists spend a lot of time in designing their research tool to ensure its reliability and validity. A reliable and valid research tool is considered to be the basic quality standard of positivism, which will be discussed in the coming section.

A. *Quality Standards*

Since at the heart of positivist paradigm is the objective to discover the ‘truth’ through empirical enquiries, the quality standards within this paradigm are ‘validity’ and ‘reliability’. Validity refers “to the extent to which what we measure reflects what we expected to measure” (Anderson & Arsenault, 1998, p. 257). It includes two forms: internal and external. Internal validity refers to the extent the findings meet expected results. External validity, on the other hand, can be defined as “the extent to which the results of a study can be generalized across populations, settings, and times” (Johnson & Christensen, 2000, p. 200). Validity can be accomplished through careful sampling, appropriate instrumentation and appropriate statistical treatment of the data (Cohen, Manion & Morrison, 2011, p. 179).

Reliability refers “to the extent that an instrument will yield the same results each time it is administered” (Anderson & Arsenault, 1998, p. 256). Through statistical analysis, reliability can be estimated by internal consistency based on the correlation among the variables, using Cronbach’s alpha reliability coefficient (Dörnyei, 2007).

B. *Limitations*

Despite the fact that positivism has been a dominant mode of inquiry in social science for over a century (Willis, 2007), I believe like others (Cohen, Manion & Marison, 2011; Crottey, 1998; Guba, 1983; Creswell, 2007; Gage, 1989; Mack, 2010) that it has some limitations, if not many. First, human affairs, including learning and teaching, are involved with intentions, goals and purposes that give them meaning (Gage, 1989, p. 4). Second, the scientific method can only be applied to natural phenomena that are stable across time, space and context. Talking about education, where learning, interaction and teaching can change annually, monthly, weekly or even daily, challenges researchers with positivist views. Furthermore, I find fault with the positivist ideology of determinism, which means that all

events are fully determined by one or more causes (Cohen, Manion & Marison, 2011). For instance, it is very problematic to attribute the process by which second language learners learn to read or speak to one or two reasons, especially for a complex phenomenon like learning a second language. Finally, since positivism aims to generalize the results of the research, there is a risk of neglecting individuals whose understandings and interpretations can reveal plenty of truths about the reality. These limitations lead us to an explanation of the next paradigm, interpretivism.

III. INTERPRETIVISM

The interpretivist paradigm can be also called the “constructivist paradigm” since it is rooted in the fact that realities are multiple and socially constructed. Interpretivists adopt a relativist ontology, where a single phenomenon can have multiple interpretations and there is no basic process by which truth can be determined. They aim to get a deeper understanding of the phenomenon and its complexity in its unique context, not to generalize to a whole population (Creswell, 2007). Epistemologically speaking, interpretivists believe that knowledge is gained through a strategy that “respects the differences between people and the objects of natural science and therefore requires the social scientist to grasp the subjective meaning of social action” (Bryman, as cited in Grix, 2004, p. 64). Interpretivists do not generally begin with a theory, rather they “generate or inductively develop a theory or pattern of meanings” (Creswell, 2007, p. 9) throughout the research process. They treat people as research participants and not as objects. They try to capture different perspectives and look at the phenomenon from different angles.

Interpretive researchers implement a methodology that allows the researcher to conduct a study in its natural setting. Thus, they can utilize a case study, ethnography, grounded theory, phenomenology and life history. Utilizing these approaches allows the researchers to obtain personal contact with the group being studied in order to attain an insider’s view (Tuli, 2010). Having such an insider insight can lead to deeper understanding into the phenomenon under study. However, I personally think that interpretivists cannot get this insider view they are aiming for because the moment they join the group, they are influencing the atmosphere of the group one way or another. For instance, if a researcher was aiming to investigate teachers’ reactions to underachiever students in a certain school by observing classes, the existence of the researcher in the classroom would consciously or subconsciously affect both teachers and students.

Interpretivists collect qualitative data via various methods. The most popular method of interactive approach is the interview because “interviewing allows a researcher to investigate and prompt things that we cannot observe. We can probe an interviewee’s thoughts, values, prejudices, perceptions, views, feelings and perspectives.” (Wellington & Szczerbinski, 2007, p. 81). They also utilize other methods, such as observation, through

collecting field notes or video-taping. They also tend to collect documents and participants' diaries (Punch, 1998). Such qualitative data can be overwhelming for researchers when they try to transcribe the data and organize it in themes. Sometimes they become confused by their inability to limit the scope of the study and to relate the findings to the research questions (Bryman, 1998). In my opinion, I think the researchers with an interpretive viewpoint need to have the skills to organize their data and make links between it and the research questions, especially if software like NVivo is not helping with regard to coding data.

A. Quality Standards

Since the interpretivist paradigm seeks the understanding of meaning construction in social contexts which involve the subjectivity of the researchers, the quality standards in this research paradigm is trustworthiness. It consists of credibility, transferability, dependability and confirmability (Guba & Lincoln, 1989). Credibility, which is the equivalent of internal validity, can be assured by utilizing member checking (Merriam, 1989, as cited in Cohen, Manion & Marison, 2011). Regarding transferability, Guba and Lincoln (1989) define it as a term that refers to the generalisation of research findings, which can be applicable in different contexts. Transferability can be achieved by providing rich data and detailed descriptions. Dependability concerns the stability of data over time (Guba & Lincoln, 1989) whereas, Confirmability refers to the process of assuring data, interpretation and outcomes are rooted in the contexts and persons concerned (Guba & Lincoln, 1989). Looking at the literature, it seems that the quality standards of interpretivism is not as clear and well established as that of positivism, especially when it relates of how to achieve these qualities. This prompts researchers like Guba and Lincoln (1989) to invite other researchers to do more work and provide critiques to establish clear quality standards for interpretivist research.

B. Limitations

Although the interpretive paradigm has its strength in exploring a given phenomenon and providing valuable information, it has some limitations. One of these limitations is that it has gone too far in leaving out the scientific procedures of verification. Thus, findings cannot be generalized to other people or other contexts (Cohen, Manion & Marison, 2011). Many positivists question the ultimate usefulness of interpretive research. However, my response to this criticism is that an interpretive research of a high quality can be transferred to other contexts and teachers can benefit from it. For example, much case study research about individual students or teachers have revealed valuable information about classroom life that has inspired teachers and positively affected their practices.

Another criticism of interpretivism is that its ontological assumption is subjective rather than objective (Mack, 2010). The results are more easily affected by the researcher's personal biases. However, I believe that it is impossible to be totally objective in any kind of research, even positivist research. In fact, positivists deceive

themselves by thinking that their research is totally objective and value-free. This is because throughout the research process, researchers make plenty of decisions that are value laden, such as selection of variables, actions to be observed, and interpretation of findings (Salomon, 1991).

The last and the strongest limitation of interpretivism is that it does not address the political and ideological impact on knowledge and social reality. It neglects the issues of power and agency, which are features of our society (Mack, 2010). Interpretivism focuses more on understanding the current situation and does not address the issues of empowering individuals and societies. Thus, these limitations, especially the last one, have led to the rise of the critical theory approach to research.

IV. CRITICAL THEORY

The critical theory paradigm is also known as the 'transformative paradigm'. The ontology of the critical theory paradigm is based on relativism. Reality is socially constructed through the media, institutions and society. Critical theory emphasizes that humans' behaviour is the outcome of "particular illegitimate, dominatory and repressive factors: illegitimate in the sense that they do not operate in the general interest – one person's or group's freedom and power is bought at the price of another's freedom and power" (Cohen, Manion & Morrison, 2011, p. 31). In other words, critical theorists believe that "research should contain an action agenda for reform that may change the lives of participants" (Creswell, 2007, p. 21). Part of this empowerment process, which can be described as emancipation, involves research participants to problematize their current situations and decide on actions to improve them.

Epistemologically speaking, they believe that knowledge is produced by power and is an expression of power rather than truth. "What counts as worthwhile knowledge is determined by the social and positional power of the advocates of that knowledge" (Cohen, Manion & Morrison, 2011, p. 32). Critical theorists adopt a "pragmatic epistemology" that seeks "to stimulate critical self-reflection among human agents so that they can freely choose whether and how to transform the world" (Chris, Putnam & Smith, 1985, p. 71).

Based on its ontological and epistemological assumptions, the critical theory paradigm can include many methodologies. The most popular one is critical action research, which is a systematic study that combines action and reflection with the intention of improving practice" (Ebbutt, 1985, as cited in Cohen, Manion & Morrison, 2011, p. 345). Another methodology is critical discourse analysis, which aims to "capture the dynamic nature of both power relations and text production by uncovering the hegemonic structures within texts" (Joseph, 2004, p. 58). The third methodology is ideology critique, which illustrates hidden ideologies by revealing participants' places in systems which empower or disempower them (Penneycook, 2001). Within these methodologies, critical theorists may utilise qualitative,

quantitative or mixed methods data collection. It appears that most critical theorists apply a mixed methods approach because it provides them with opportunities to develop “more complete and full portraits of our social world through the use of multiple perspectives and lenses” (Somekh & Lewin, 2005, p. 275, as cited in Mackenzie & Knip, 2006).

A. Quality standards

Since the critical theory paradigm aims to change society by problematizing current situations and since it rejects a neutral stance, it has different quality standards that ensure that the researchers’ biases do not distort the data. Lather (1986) has offered four quality standards for critical research. The first criterion is triangulation, which requires using multiple data sources, methods, and theoretical schemes. The second one is reflexive subjectivity, which involves researchers showing some records of how their assumptions have been influenced by the collected data. The third standard is face validity, which can be achieved by “recycling categories, emerging analysis, and conclusions back through at least a subsample of respondents” (Lather, 1986, p. 78). The last criterion is catalytic validity, which emphasizes the necessity of showing some evidence that the research process has empowered participants to understand and transform their oppressed situation.

B. Limitations

Although critical theory research has the potential to change society because it is action-focused, it has, like other paradigms, some limitations. One limitation, especially in the field of education, is the claim that has been made that action research can empower teachers who can affect the whole of society. We live in a world where teachers’ roles are restricted to their schools if not to their classes. They cannot participate in decision-making processes even if they conduct plenty of action research (Cohen, Manion & Morrison, 2011).

Another limitation is its intent to empower people and achieve equality in society. Such intent seems to be hypothetical and it should be supported by empirical examples and cases. For instance, the effectiveness of implementing critical theory could be assured by charting the extent to which equality and emancipation have been achieved after raising the participants’ awareness of the issue (ibid). However, this can be really challenging for the critical theorist as any change cannot be observed immediately in society. Rather, it needs time to occur. I strongly believe that raising people’s awareness of a problem or an issue is the first step to make their situation better since such awareness will make them question and think how to ameliorate things, especially in the teaching and learning process.

V. CONCLUSION

Throughout the process of writing this paper by reviewing the relevant literature, I have been able to decide on my own paradigm. I always think that a purpose of life in general and research in particular is to change the world for the better. From the moment that I

joined the teaching profession, I have always believed that our responsibilities as English teachers are about more than elaborating a grammatical rule or delivering a reading activity (Skutnabb-Kangas, 2002, as cited in Troudi, & Alwan, 2010). Rather, our responsibilities are critically about questioning our daily practices and suggesting alternatives that go well with our students’ educational needs. I believe in Yeats’ quote that “Education is not the filling of a pail, but the lighting of a fire”. Thus, the role of schools, institutions, colleges and universities is more than spoon-feeding students with information and equipping them with the skills to cope with their future life. The role of these institutions is to transform people and emancipate them so that they can live better lives. I believe that the best way to define educational research is “a critical enquiry aimed at informing educational judgments in order to improve educational action” (Bassey, 1999). Thus, I can summarize my role as a researcher as one to empower teachers and learners by encouraging them to “go from action to reflection and from reflection upon action to a new action” (Freire, 1972, p. 31). This is because when a person’s daily life is based on action and reflection, emancipation and amelioration can be achieved and a better life can be lived.

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