

## Critical investigation of a qualitative research article from ontological and epistemological perspectives

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### **Abstract**

*Research can be defined as a systematic inquiry or investigation, through the process of which data is collected, analyzed and interpreted with the aim of understanding, describing, predicting or controlling a phenomenon. The definition by itself has a complex ontological and epistemological background, whose interpretation lead to different research paradigms such as positivism, post-positivism, interpretivism/constructivism and the critical theory. In that respect, the aim of the present study is to critically analyze a qualitative research article on teacher education and curriculum with respect to the paradigm it adopts. For the analysis of the article, the description of the critical research paradigm by Allison and Pomeroy (2000) adapted from Guba & Lincoln (1994) is used as criteria. The findings indicate that the selected article adheres to the analysis criteria. The findings are discussed in the conclusion section.*

**Keywords:** *Research Paradigms, Ontology, Epistemology, Critical Theory, Qualitative Research*

### **1. Introduction**

Research in an educational or psychological setting can be defined as a systematic inquiry or investigation, through the process of which data is collected, analyzed and interpreted with the aim of understanding, describing, predicting or controlling a phenomenon (Burns, 1997; Mertens, 2005). Although the definition is quite straightforward and clear cut, the interpretation of this definition by the researcher depends on the ontological, epistemological and paradigmatic stances one takes and in turn, this leads to the methodological choices of the researcher.

For that reason, it is necessary to begin by defining ontology and epistemology, since they form the basis behind the paradigm the researcher adopts. Ontology is concerned with what reality is and what it is constituted by. The word actually dates back to Ancient Greek, having derived from 'on', meaning 'to exist'. In that respect, the nature of reality, or what is 'knowable' is the main concern of Ontology (Guba, 1990).

Epistemology, on the other hand, deals with 'knowledge' as in investigating what knowledge is, how knowledge is created, comprehended and disseminated. Like the word ontology, epistemology is also derived from Greek, from 'epistame', which means 'knowing something very well'. In this regard, epistemology can be stated to be concerned with knowledge in the way that it questions whether knowledge is objective and concrete, or subjective and abstract (Cohen et al., 2006).

As seen in the definitions and literature, the term research has a simple definition but a complex philosophical background which can be interpreted differently in different contexts. As a

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matter of fact, these differences in the ontological and epistemological interpretations lead to different theoretical choices, or paradigmatic stances.

## 2. Research paradigms

As stated earlier, varying ontological and epistemological interpretations result in shifting research paradigms, which can be defined as the general notion of the nature of research, which paves the way to the undertaking of an inquiry following a set of ontological and epistemological beliefs. Research paradigms are differentiated from one another according to their perception of reality as objective or subjective, and their way of producing knowledge, inductive or deductive (Mangan, 2004). In that context, research paradigms according to their ontological and epistemological stances can be investigated under four headings, positivism, post-positivism, critical theory and interpretivism/constructivism.

### 2.1. Positivism

According to Mertens (2005), positivism, also referred to as ‘the scientific method’, is based on rationalism and empiricism that emerged with Aristotle, Bacon, Locke, Comte and Kant. The ontological stance that positivism takes asserts that reality exists regardless of observation and it is totally independent of the researcher. Therefore, whether human beings are conscious of it or not, meaning exists on its own.

Epistemological roots of positivism are also objective in that truth can be reached since knowledge is ‘deduced’ from the truth which exists regardless of how humans perceive it. For that reason, knowledge can be generalized through quantitative research methods since it is not subjective. The researcher’s job, according to positivists, is to find causal relationships and experiment by controlling conditions strictly as in pre-test / post-test designs (Irene, 2014).

The positivist stance has been criticized for disregarding values, beliefs, and moral judgments, which are subjective phenomena that have an effect on research outcomes (Habermas, 1974).

### 2.2. Post-positivism

As mentioned above, positivism has been criticized within the context of social sciences since it does not take into account what cannot be measured or observed in human nature. For that reason, the post-positivist stance argues that objectivity and generalizability should still be in the core of research, however, the researcher can comprehend the reality only imperfectly due to the effects caused by the ‘unobservables’. For that reason, reaching the ultimate truth that is certain is not possible, instead, the researcher should focus on what is probable.

In that respect, the research methodology of the post-positivist paradigm is similar to that of positivist paradigm in that quantitative observation and experimentation is utilized. However, the results are not interpreted with the same sense of certainty and what is observed is interpreted as being ‘probably’ true (Morgan, 2007).

### 2.3. Interpretivism / constructivism

Rooted in phenomenology and hermeneutics, the interpretivist paradigm of research adopts a relativistic approach in that the basis ontological basis the paradigm lies in reality’s being subjective and of a varying nature depending on the person or the context (Guba & Lincoln, 1994). Strictly opposing positivism, an interpretivist stance to reality would state that ‘meaning’ does

not exist without human consciousness. Therefore, reality is constructed by human consciousness are there are multiple realities as many as individuals.

Accepting this relativist stance, the achievement of truth appears to be a rather difficult task. However, Pring (2000) summarizes the issue by stating that truth is 'co-constructed' through a consensus. Therefore, contextual and cultural factors have a say in this process of co-constructed, as well as individuals.

In terms of research methodology, interpretivism focus on the interactions among perspectives, historical contexts and cultural contexts. To achieve this, case studies, phenomenology, hermeneutics and ethnography are utilized (Creswell, 2009; Scotland, 2012).

Theories built through an interpretivist stance are usually inductive. In other words, they are 'generated' from what the research has at hand as 'research data'. The data is usually collected through open-ended interviews, observations, focus groups, simulations or think-aloud protocols. This way, behavior is attempted to be understood by taking into consideration the 'humane' factors such as beliefs, values or feelings (Scotland, 2012). The validity and reliability concerns of quantitative research, in this case, are replaced with trustworthiness criteria such as credibility, dependability, transferability and confirmability (Guba & Lincoln, 1989).

#### 2.4. Critical theory

According to Mertens (2005), the critical theory of research is developed owing to a sense that a great deal of social theory is produced through the male perspective of white people from male research subjects. In other words, critical theory takes into account the historical reality which is formed through values related to societies, politics, ethnicities, genders and economy (Guba & Lincoln, 1994). For that reason, critical theorists believe that research cannot be separated from politics and research should take an 'action' that has the power to change both the subjects' and the researchers' lives (Creswell, 2003).

Ontologically, critical theory asserts that reality is influenced by the aforementioned 'historical reality' and it is constructed through the interaction between language and the world that is independent. In that respect, the theory adopts a subjective stance in terms of epistemology in which the knowledge is believed to be constructed by the power of its advocates (Scotland, 2012; Cohen et al., 2007).

Since the aim is to conduct the research from a political perspective, the research methods that the critical theory uses are critical discourse analysis, critical ethnography, action research and ideology critique, which aims to analyze the data from cultural, historical and political perspectives (Scotland, 2012). In order to collect data related to these methods, open-ended questionnaires or interviews, focus groups, open-ended observations and journals, which are quite similar to the data collection methods of the interpretivist paradigm, can be utilized.

As seen in the relevant literature, the ontological and epistemological stances one takes affects the ways a research is conducted, determining the paradigm that the researcher adopts. In that respect, the aim of this study is to critically analyze a qualitative research study from the field of Teacher Education and reveal how much the research adheres to the interpretivist paradigm of research.

### 3. Methodology

The research is of a descriptive nature, employing a qualitative design since the critical analysis of a research article requires context-boundedness without the aim of generalization of the findings (Stake, 1995).

The article selected for analysis in this study is “*Recent tensions and challenges in teacher education as manifested in curriculum discourse*”, written by Hökka, Etelapelto and Puttonen (2010) and published in a peer-reviewed teacher education journal entitled ‘Teaching and Teacher Education’. This particular article is selected for the study since it is a qualitative example of research which focuses on teacher educators’ approaches to the curriculum of teacher education based on the discursive resources that teacher educators use, which indicates that the study adopts the critical paradigm.

For the purpose of content analysis, the description of the critical research paradigm by Allison and Pomeroy (2000) adapted from Guba & Lincoln (1994) is used as criteria. The criteria are as follows:

1. Aim of the inquiry: To criticize, transform and emancipate knowledge
2. Ontological Perspective: Historical Realism – subjective reality shaped by political, cultural, social, economic, gender related and ethnic values.
3. Epistemological Perspective: Subjectivist – value-mediated findings which reveal culturally and historically rooted beliefs.
4. Methodology: Dialogue with participants.

Analysis of the selected research article is conducted taking the criteria above into consideration. In order to reach conclusions, how the researchers collect and interpret data is analyzed.

### 4. Findings

The selected article is analyzed according to the aforementioned criteria, aim of the inquiry, ontological perspective, epistemological perspective and methodology. The findings are presented below.

#### 4.1. Aim of the inquiry

As stated in the methodology section, the first criteria to look for in the study is the aim of inquiry. Allison and Pomeroy (2000) argue that the aim of inquiry in a research that adheres to the critical theory should be to criticize, transform and emancipate knowledge. In the article of Hökka et al. (2010:847), the aim of the study is presented as:

“We aim to contribute to the understanding and development of teacher education by focusing on teacher educators’ discourses concerning curriculum development. In order to gain a better understanding of these discourses we framed this question: What kinds of interpretative repertoires did teacher educators construct when speaking about curriculum reform? In this study, we illustrate these repertoires, using as analytical tools the notions of (i) function, (ii) context and (iii) the subject position constructed in the repertoires in question. Furthermore, the study seeks to identify the kinds of meta-repertoires that these repertoires reflect in the context of curriculum reform.”

In the way that the aim of the study is stated, several clues of the study's adherence to the critical theory are visible. Firstly, the researchers appear to use the word 'discourse' consciously. Instead of focusing on perceptions, attitudes or opinions, the authors focus on the 'discourses' of the participants and they are also interested in how these discourses are 'constructed'. Moreover, taking into consideration the function, context and subject position, it becomes clear that the researchers will approach the research data as historical – contextual and political text, which they also explicitly state in the introduction section of the article. Taking these details into account, it could be stated that the aim of the research is in line with the general aim of inquiry in critical theory.

#### *4.2. Ontological perspective*

The ontological criteria of critical theory, stated by Allison and Pomeroy (2000), is that reality should be considered as subjective and historical, shaped by political, ethnical, social or gender values.

The research article being investigated seems to have adopted a similar stance in terms of ontological concerns. Firstly, both in the literature and methodology sections, the authors emphasize that the meanings are 'constructed', which shows the positivist idea of reality's being independent from consciousness is rejected. Moreover, while explaining their theoretical framework, they refer to Nikander (2008) and Wetherell (2007) by saying that "language does not transparently represent the world, or some 'reality'; nor does it reflect a pre-existing meaning in the manner of a mirror. Rather, language is seen as a site where meanings are constructed through text and talk in social action." (Hökka et al., 2010:846). Through this explanation, the authors explain that reality is constructed as a social process, owing to which they naturally take into account the historical – contextual reality. The fact that a thick description of the context in which data is collected is given is also supportive of this ontological stance which surrounds the research.

#### *4.3. Epistemological perspective*

The epistemological criteria of the critical theory is that knowledge should be interpreted from a subjective perspective. Similarly, in terms of research, findings should be value-mediated, revealing historically and culturally rooted beliefs.

Hökka et al. (2010) follow the 'guidelines' of the critical theory in their article also in terms of epistemology, stating that "many researchers have tried to move outwards from socio-cultural theory, turning to post-structural, cultural, feminist, and discourse theories to gain an understanding of social, cultural, mental, physical and political aspects of reality" (p. 846). With this explanation, Hökka et al. (2010) actually indicate how they 'pursue' reality and how they interpret that reality. From the quote, it can be seen that they treat the pursuit of knowledge from a historical – contextual perspective which is parallel to the epistemological stance of the critical theory.

As the theoretical framework of their methodology, the authors state that they utilize 'critical discursive psychology' since their aim is to find out how the participants use discursive resources and how these resources, provided to them by the history, contribute to the making of meaning. In that respect, it can be inferred that the authors are in terms with the idea that meaning is contextually and historically created.

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#### 4.4. Methodology

Allison and Pomeroy's (2000) methodology criteria related to the critical theory is dialogic, that is, engaging in dialogues with the participants. Moreover, Scotland (2012) states that open-ended questionnaires, interviews, observations, journals and focus groups can be utilized for research purposes.

In Hökka et al.'s (2010) study, the methodology is a qualitative one based on critical discursive psychology focusing on the data in terms of function, context and subject position. Moreover, the data is collected through open-ended interviews with teacher educators representative of each age, academic status, subject and work history group and the total duration of the interviews is 14 hours. In the article, it is seen that the methodological standards related to the critical theory are followed to a great extent, utilizing qualitative means of data collection and subjective means of data analysis. In that respect, it can be stated that the methodology of the article adheres with the general research methodology of the critical theory.

#### 5. Conclusion

The aim of the present study is to analyze and evaluate a research article on teacher education from a paradigmatic perspective. Since the selected article adopts the critical theory as the research paradigm it adheres to, the evaluation criteria is taken as the aim of inquiry, ontological perspective, epistemological perspective and methodology related to the critical theory.

The evaluation shows that the aim of the research article is parallel to the general aim of inquiry in the critical theory, since it draws on the presupposition that curriculum – the main focus of the article – is treated as political text. In that respect, the researchers aim to reveal the discursive resources utilized by teacher educators to see how these resources are employed in their 'talk' about the curriculum.

In terms of the ontological stance of the article, the authors seem to be in terms with the critical theory in that reality is seen as 'constructed' rather than something that 'exists'. Taking into account also the historical and cultural context by providing a thick description, it is seen that the article evaluated conforms to the critical theory in terms of its ontological stance.

Epistemological stance that the authors take in their article is also in compliance with the critical theory. Instead of focusing on the data provided by 'language', they focus on what is 'beyond language' through the functions, context and subject positions. This way, they expect to reveal the historical, contextual, political and social realities behind the participants' language related to the curriculum change, as stated in the critical theory.

Finally, the methodology of the article follows the methodology proposed in the literature related to the critical theory, in that the researchers employ a qualitative design in which the data is collected through engaging in dialogues with the participants in the form of open-ended interviews. The source of information is solely the participants, but the information is constructed through interaction with the researcher.

As a conclusion, the article evaluated seems to be a representative example of an article with critical theory as its theoretical framework with its aim of revealing the political and social reality, ontological stance of reality being co-constructed socially and politically, epistemological stance of knowledge being obtained through looking beyond the language for social and political cues and its qualitative methodology based on dialogues with the participants. Conforming to all the

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criteria put forth by Allion and Pomeroy (2000), Hökka et al.'s (2010) research article provides insights not only to the approaches to teacher education in its own context, but also to the critical research paradigm with the way it is structured.

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