

AN EPISTEMOLOGICAL REVIEW OF 150 RESEARCH IN LAST THREE YEARS (2018-2020)

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ARTICLE

ABSTRACT

Keywords:

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Theory of Truth.

Epistemology is concerned with possibilities, nature, and limitations of knowledge of study which focuses on what is known to be true. This study aims to describe the development of research method epistemologically in last three years (2018-2020). So, this study will explore the epistemological basis for 150 research studies. This study will review and analyze epistemology and include the 'theory of truth' within the range of research on English Language Education program in the last three years period from 2018–2020. The researcher used a qualitative approach in which the form of data is 150 research articles. The data source will be the 150 research that comes from English Language Education Program. The data will be analyzed by using non-statically data analysis since it is non-numerical data. From the analysis, it found that the most used methodology will be qualitative approach of descriptive qualitative. The qualitative method is already in accurate direction by selecting the social context problem, observing it, and finally resulting in theoretical analysis. Next, the quantitative method, the main problem in quantitative analysis is usually 'phenomena' that require a systematic investigation where the researcher needs to formulate a set of hypotheses.

INTRODUCTION

Epistemology is the theory of knowledge, the philosophy of the nature, origin, and scope of knowledge (Moser, 2010). It is important because it can help people to evaluate what they see or perceive, to determine the truth of knowledge, and help them to find the benefit of knowledge. It also aims to gain knowledge through or see some aspects such as method, validity, reliability, and scope. This aspect is important to make sure that the evidence is true based on the knowledge that exists. From the method (qualitative or quantitative), the researcher will know how the knowledge is acquired or produced. There are theories of truth in epistemology. It aims to prove the truth of knowledge by seeing methods that are used to solve the problem. Based on the description above, this study wants to know the epistemology from a thesis or dissertation to see the theory and truth of the knowledge by seeing the method, validity and reliability used. This study explored the epistemological basis for 150 research studies. According to Hallebone, E. And Priest, J.: (2009) that Epistemology in business

research as a branch of philosophy deals with the sources of knowledge. Specifically, epistemology is concerned with possibilities, nature, sources, and limitations of knowledge in the field of study. It means that epistemology focuses on what is known to be true. Based on this theory, this study analyzed the problem, the methodology, and the theory of truth for finding the main point of epistemology. It is concerned with the possibilities, nature, sources, and limitations of knowledge in a particular field of study. There are several previous studies conducted by some researchers about epistemological review on research. One of them is Omer in 2016.

This study explored the epistemological basis for qualitative educational research studies. Within this context, 20 qualitative studies on education were analyzed and three dimensions were sorted out: (1) the purpose or aim of the study, (2) the rationale for the study, and (3) the occurrence of epistemological aspects (theory, paradigm, methodology). Based on an examination, a random sample of 20 articles published between 2014 and 2015 in the Taylor & Francis Group content were determined. Based on the results, most of the evaluated articles were found to have epistemological features. While Rahmat, on his research in 2020, he explored the epistemology in development management. Moreover, this research focuses on deductive approaches used by management experts. In line with Musliadi's research in 2014, he focused on fundamental questions regarding epistemological problems in science discourses. Based on the previous studies above, we indicated that while existing studies have clearly established the epistemological aspect, they have not addressed the theory of the truth. Therefore, this study will develop the previous research about the theory of the truth. The researchers ask questions about the summary of epistemology from 150 researchers. Seems the previous research only explored the epistemology aspect; these factors need to be investigated in more detail not only focus on epistemology but also about the theory of the truth. The objective of this paper is to describe the development of research methods epistemologically in the last three years (2018-2020). With the research questions 1) How has the development of research method epistemologically in the last three years (2018-2020). The epistemology analysis of the research article will define and describe more deeply in the context the lay of the relationship that connects between them. It will have a deep connection with the qualitative and quantitative approaches within the research. This study reviewed and analyzed epistemology and 'theory of truth' (TOT) within the range of research on English Language Education Program Listening Model of Teaching in the last three-year period from 2018–2020.

LITERATURE REVIEW

Epistemology in General

Epistemology refers to the assumptions we make about the type and nature of knowledge (Richards, 2003), as well as how we might learn about the world (Snape & Spencer, 200). Epistemology, according to Crotty (1998), is a means of looking at the world and making sense of it. It implies knowledge, and it must imply a particular understanding of what that knowledge means. He goes on to say that epistemology is concerned with the 'nature' of knowledge, as well as its possibility (what knowledge can be tried and what cannot), breadth, and validity. Similarly, Bryman (2008) defines epistemology as "a problem concerned with the question of what is or should be considered as acceptable knowledge in a profession," with a specific reference to different ideas about how natural and social worlds should be explored (p.13). Cohen, Manion, and Morrison (2007) emphasize how the epistemological assumptions we make or hold about knowledge have a significant impact on how we go about revealing social behavior information. They allude to the choices the researcher must make in terms of the method(s) he or she will use in their study based on their epistemological beliefs. That is,

if knowledge is considered as hard, objective, and tangible on the one hand, the researcher must play the role of observer while adhering to natural scientific procedures such as testing, measuring, and so on. If knowledge, on the other hand, is considered as personal, subjective, and unique, the researcher is forced to abandon natural science approaches and become more involved with their subjects.

Epistemology of English Language Teaching

Teachers as learners, whether trainees or experienced, do not come into training as tabula rasa or empty vessels to be filled in (Woodward, 1991; Neil and Morgan, 2003; Roberts, 1998). Existing and trainee teachers will have had degrees of preconceptions concerning teaching and learning processes rooted in their knowledge base of values, beliefs, and attitudes. In fact, novice trainees have considerable potential that can be manipulated by teacher educators, for all novice trainees have consciously or unconsciously experienced the feelings of being students themselves. In addition to that, they have accumulated certain beliefs and impressions, whether favorable or otherwise, of their past teachers and the way they used to teach. Teachers, thus, continually engage with the knowledge base of their practice, comparing it against the latest evidence on 'how learning occurs, cognition and intelligence, pedagogy, subject knowledge, teaching approaches/ learning styles and the social and cultural context in which these are applied' GTCE (2004:15).

Therefore, in teacher education, as Wallace (1991) points out, at least two sources of knowledge are principally dealt with. First, a 'received knowledge', pertaining to instruction in theories of language learning and language education; second, an 'experiential knowledge', which encompasses the practical knowledge component comprising, on the one hand, trainers' own practical teaching experience, and, on the other, trainees' previous experiential knowledge, or conceptual schemata. Experiential knowledge is further sub categorized by Day and Conklin (1992) into pedagogic knowledge: This contains generic teaching strategies, teaching methodology, and teaching practices, such as classroom management, motivation, testing, assessment and decision making; and pedagogic content knowledge: This refers to diverse practicalities and techniques of teaching language skills, such as listening, speaking, reading or writing, how to convey, put across or communicate content knowledge, how students comprehend content knowledge and what difficulties they may encounter. Having said that, however, much of the debate in theories of Language Teacher Education, has been not so much as the identification and categorization of essential trainee knowledge, be it theoretical or practical, but rather, about training approaches that best convey practical teaching skills, or experiential knowledge, in the most effective way. Roberts (1998:103-4) describes teacher knowledge in terms of six components, which are a breakdown of 'received knowledge' gained through instruction: (1) content knowledge: Refers to teachers' knowledge of the target language and its systems, such as semantics, syntax, phonology, pragmatics, literacy as well as cultural aspects; (2) pedagogic content knowledge: How to adapt, convey and put across content knowledge according to learners' needs. How students comprehend content knowledge and what difficulties they may encounter; (3) general pedagogical knowledge: Refers to classroom management and organization skills, a repertoire of learning activities, and evaluation and assessment skills; (4) curriculum knowledge: Awareness of language curriculum including exams and the resources available to teach it; (5) contextual knowledge: of learners, schools, community and the wider context of education authorities and policies; (6) process knowledge: A set of skills and attitudes that enable teacher development, such as study skills, observational skills, critical reflection skills, and collaborative skills (team work, active listening, constructive criticism).

Theory of Truth in Qualitative

The theory of truth in qualitative is called the correspondence theory. A statement is considered true if what is stated in it relates or has a relationship (correspondence) to the reality expressed in the statement. According to this theory, truth lies in the compatibility between the subject and the object. What the subject knows must be conformity and relate with reality (Micah Phillips, 2020). Knowledge is proven to be true and becomes true by a fact that corresponds to what the knowledge reveals. In scientific activities, revealing reality is the main thing. In an effort to reveal that reality, the truth will emerge and be proven by itself, if what is stated to be true is in accordance with the reality. Correspondence theory is strongly emphasized by empiricism which prioritizes experience and sensory observation as the main source of human knowledge (Jamin Asay, 2020). This theory prioritizes the way of working and a posteriori knowledge, which is revealed only through and after empirical experience (Justin Remhof, 2015). It places great emphasis on evidence for the truth of knowledge. What is meant by evidence is not given a priori by reason, not the construction of reason, and not the product of the imagination of the mind. Evidence is what is given and offered by objects that can be caught by the five senses man. The truth will prove itself, if what is stated in the proposition according to or supported by the facts as disclosed. What is meant as proof or justification is the process of presenting facts that support a proposition or hypothesis (Evandro Oliveira D’Brito, 2018). The problem that arises in connection with this theory is that all statements, propositions, or hypotheses that are not supported by empirical evidence, by any factual facts, are not will be considered correct.

Theory of Truth in Quantitative

Theory of truth in quantitative methods is called the coherence theory. A coherence theory says that if a set of beliefs is coherent and some are known to be true, then this justifies believing the others. A more radical version would say that, even if none of the beliefs were known to be true, the fact of the coherence of the whole is enough to justify them. According to this theory beliefs must be logically consistent with other truths. It means that if one statement is inconsistent with another accepted statement, it probably is wrong. Theories within the coherence framework use rationality or logical consistency as the ultimate standard for judging truth (Rescher, 2002). A theory, or line of reasoning, is coherent when it is credible. For this reason, theories within the coherence framework often start from the mind of the decision maker (Evans 1983, as cited in Custer 2019).

Methodology in Qualitative Research

Qualitative research is a research method to explore and understand the meaning that some individuals or groups of people think come from social or human problems (Creswell, 2009). The final report of a qualitative study has a flexible structure or framework. The perspective used in this study is inductive style, focuses on individual meanings, and translates the complexity of a problem. Qualitative research begins in the field which is based on natural environments, not theory. The data and information that have been obtained from the field are taken for the meaning and concept, presented in descriptive analytic and generally without using numbers, because they prioritize the processes that occur in the field. There are numerous critical analyses of qualitative methods. For example, a readable recent analysis that focuses on epistemological weaknesses in qualitative data analysis is to be found in Niederberger and Dreieck (2020). In general, this type of research includes information about the main phenomenon that is being explored in a study, research participants, and the location of a study. Qualitative research can also state the research design chosen. In the world of education, qualitative research has the objective of describing the process of educational activities based on what is in the field as study material to find shortcomings and weaknesses so that efforts can be determined to improve them; analyzing a symptom, facts, and educational events in the field; compile a hypothesis

related to the concepts and principles of education based on information and data that occur in the field.

Methodology in Quantitative research

A quantitative research method deals with quantifying and analysis variables to get results. It involves the utilization and analysis of numerical data using specific statistic l techniques to answer questions like who, how much, what, where, when, how many, and how. In line with Aliaga, and Gunderson (2002), describes quantitative research methods as the explaining of an issue or phenomenon through gathering data in numerical form and analyzing with the aid of mathematical methods; in particular statistics. Quantitative research numerical data are collected and analyzed using statistical methods. On the other hand, (Leedy & Ormrod 2001; Williams, 2011). Furthermore, Williams, (2011) remarked that quantitative research starts with a statement of a problem, generating hypotheses or research questions, reviewing related literature, and a quantitative analysis of data. Similarly, (Creswell 2003; Williams, 2011) states, quantitative research employs strategies of inquiry such as experiments and surveys and collects data on predetermined instruments that yield statistical data. "More succinctly Sukamolson, (2007) further describe there were some types of quantitative research: (1) Survey, as a form of quantitative research that is concerned with 'sampling questionnaire, questionnaire design, questionnaire administration' for the sake of gathering information from the group/population under study and make analysis to better understand their behavior/characteristics. (2) Correlational, A quantitative methodology used to determine whether, and to what degree, a relationship exists between two or more variables within population (or sample). (3) Experimental, aims to investigates the treatment of an intervention into the study group and then measures the outcomes of the treatment. (4) Causal-Comparative or Ex Post Facto implies "from after the fact" (Gay, 1976).

METHOD

This research used library research because the researcher studied about epistemology in 150 researchers in the last three years (2018- 2020). According to Zeid (2004)" library research is research used library sources to get the data". The purpose of this research will be focused on the analysis of epistemological and theory of the truth in 150 researchers in the last three years (2018- 2020). The source of data in the study is the subjects from which the data can be collected for the purpose of research (Arikunto, 2010: 129). The researcher can use the library which is collecting 150 researchers as the source of data. The data of this study are all the words in 150 researchers. The researcher used a qualitative approach in which the form of data is utterances. According to Marshall (2006) "Qualitative approach typically relies on four methods for gathering information: 1) participating in the setting, 2) observing directly, 3) interviewing in depth, and 4) analyzing documents and material culture. In collecting data, we used documentation that followed the procedure :1) Finding and determining the instrument used for analyzing the Epistemology. 2) Finding the Epistemology to be the data source of the research. 3) Analyzing the sources to gain the ideal instruments of content analysis that should be done in that way. 4) Classifying and arranging the data gained from the analysis. The researcher analyzed the data using non-statically data analysis since it is non-numerical data, following some procedures: 1) Reading and identifying the whole thesis to find the Epistemological component. 2) Classifying text to find the component of epistemology. 3) Analyzing the component of epistemology.4. Making a conclusion.

Research Methodology	Component of Research Methodology	Structures following Research Methodology					
		The structure of components is complete			The structure of components is not complete		
		2018	2019	2020	2018	2019	2020
Qualitative	Data	✓	✓	✓	-	-	-
	Data Sources	✓	✓	✓	-	-	-
	Instrument	✓	✓	✓	-	-	-
	Technique of collect data	✓	✓	✓	-	-	-
	Technique of analyse data	✓	✓	✓	-	-	-
	Validity	-	✓		✓	-	✓
	Reliability	-	-		✓	✓	✓
	Quantitative	Data	✓	✓	✓	-	-
Data Sources		✓	✓	✓	-	-	-
Hypotheses		✓	✓	✓	-	-	-
Instrument		✓	✓	✓	-	-	-
Technique of collect data		✓	✓	✓	-	-	
Technique of analyse data		✓	✓	✓	-	-	-
Validity		✓	✓	✓	-	-	-
Reliability			-		✓	✓	✓
Mix Method	Data	✓	✓	✓	-	-	-
	Data Sources	✓	✓	✓	-	-	-
	Instrument	✓	✓	✓	-	-	-
	Hypotheses		✓	✓	-	-	-
	Technique of collect data	✓	✓	✓	-	-	-
	Technique of analyse data	✓	✓	✓	-	-	-
	Validity	-	✓	✓	✓	-	-
	Reliability	-	-	✓	✓	✓	-

RESULT

Research in 2018

Within 50 research articles in 2018, the most used methodology approach being conducted in research is the qualitative method. Qualitative research in nature means for exploring and understanding the meaning. Afterwards, there are variety in qualitative research as the fundamental, however, in this 2018 research article are mostly used descriptive qualitative method and case study. The context of discovery in qualitative research involves collecting interview and questionnaire data from research participants, individuals or groups ascribed to social or human problems. In this context, the purpose is to describe some phenomena as detailed information. For example, activities of teaching and the learning process in the classroom. This activity involves students and teachers as subjects in conducting the research process. The process of research involves emerging questions then procedures which are part of characteristic features in inductive reasoning. It starts with the observations and theories are proposed towards the end of the research process because of observations. Inductive research “involves the search for patterns from observation and the development of explanations – theories – for those patterns through a series of hypotheses which have its relation on the hypothesis generating. From the overall research in 2018, are already doing so in accordance with the nature of the qualitative method of inductive reasoning. So, we can see that 50 research analyses are already in the correct direction, which is choosing the social context problem, then observing it and at the end resulting in theoretical analysis. Furthermore, the size of truth determined here is based on an empirical level, as far as it can be experienced in concrete reality. Strictly, truth exists if there is a match between ideas and concrete experience which is involving the social problem here throughout the observation to reach the correspondence theory of truth. Thus, in this epistemologically qualitative research, here, should be testable where it can be tested by someone through an experiment or measurements to reach the scientific truth to answer the questions. As for the data and data source, qualitatively, in 2018 research most of the data come from the result of the use of instruments such as interview and questionnaire. In addition, the data source falls on the students and teachers. It could be from students' and teacher's opinion. From the overall research in 2018, we can classify it all into 40 qualitative approaches, 8 quantitative approaches and 2 mixed methods.

Quantitative

In the perspective of epistemology, it is important to elaborate how researchers frame their research in their attempts to discover knowledge and how science is gained. The scientific method of quantitative mostly begins with a problem. The main problem in quantitative analysis is usually ‘phenomena’ that require a systematic investigation by gathering quantifiable data and performing statistical analysis. As for the quantitative in 2018 that being analyzed is mostly seeking for the relationships or ‘correlations’ between two or more variables. To do that, the researchers did social surveys, structured questionnaires, and official statistics. It is done so because they have good reliability and representativeness. It has a close relationship in positivism which adheres to the view that only “factual” knowledge gained through observation, including measurement, whether the data is trustworthy. That way, in epistemology, quantitative research requires deductive reasoning where the researcher needs to formulate a set of hypotheses at the start of the research. However, in this research, the research did not include the set of hypotheses where it might have a drag on effect which in this research there is no hypothesis-testing verification. It will also be a long drawn to research evidence cannot be compared with a hypothesis. In the end, it affects the coherence theory of truth, where in here we are not sure how to consider whether the previous statement is true or not. That is

why, this research in the term of epistemological analysis is still lacking because in here hypothesis is needed to assume made on some basic, limited evidence for further investigation.

Qualitative

In qualitative, it usually used instruments, such as questionnaires and interviews to collect data. Then, the researcher used a descriptive qualitative method to describe the results. The main problem in qualitative is usually insufficient methodological knowledge, and lack of attention to the philosophical underpinning of qualitative methodology are some important challenges. One of the research projects in 2018 actually shows similar problem which is Inconsistency between research question and methodology. In more detailed, the research questions are seeking correlational which categorized as a non-experimental research method. From there, the correlation was supposed to be a quantitative method, but here, the researcher decided to use a qualitative method. The nature of inductive reasoning has a deep relationship with qualitative methods. The inductive reasoning aims at developing a theory after the observation is done by the researcher. It is also related to the social, cultural, historical, and individual settings, according to most qualitative researchers. As a result, the researcher seemed for persons who can describe, examine, or explain phenomena in real-world settings. It also has a close relationship on hypothesis generating, so here the researcher explored the set of data searching for relationship or patterns, and then they started to propose hypotheses which may then be tested in some subsequent study. The hypotheses also have a function as a design to test some theory for further exploration of data. It is done to attempt to generate new hypotheses in a more useful manner. The chosen context of discovery will have its link on answering the generating questions in this research. Where the problem started or proposed and got to be observed then in the end generated research results. The research result then will be compared and examine the relationship whether the researcher is able to give the linear theory with the result. Here, mostly, the research in 2018 already answered the research questions. From the theory above, we can see the use of the correspondence theory of truth to examine the idea in the hypothesis with the real situation or experience to reach the scientific truth to answer the questions. To do that, we require validity and reliability in research. However, most of the research in 2018 did not mention the validity and the reliability. There are some that try to implicitly state the involvement of validity and the reliability at the end of the result and some others do not mention at all about validity and the reliability. The validity and reliability are very important elements in research, which have functions to determine the truthfulness of data, used to evaluate the quality of research. They indicate how well a method, technique, or test measure something. To reach the truth in the research, it must show a match between ideas and concrete experience, data, method, technique or test measures and in the research findings.

Research in 2019

Within 50 research articles in 2019, the most used methodology approach being conducted in research is the qualitative method. Qualitative research in nature means exploring and understanding the meaning. Afterwards, there are variations in qualitative research as the fundamental, however, this 2019 research article mostly used descriptive qualitative methods and Quantitative methods. The context of discovery in qualitative research involves collecting interview and questionnaire data from research participants, individuals or groups described to a social or human problem. In this context, the purpose is to describe some phenomena as detailed information. For example, activities of the teaching-learning process in the classroom. This activity involves students and teachers as subjects in conducting the research process. However, the researchers in 2019 were also focused on The Teacher's Pedagogical Competence and Professional Competence on the Students' English Learning

Achievement and the effectiveness of some methods in a learning process. The process of research involves emerging questions then procedures which are part of characteristic features in inductive reasoning. It starts with the observations and theories are proposed towards the end of the research process because of observations. Inductive research “involves the search for patterns from observation and the development of explanations – theories – for those patterns through a series of hypotheses which is having its relation on the hypothesis-generating. From the overall research in 2019, are already doing so by the nature of the qualitative method of inductive reasoning. So, we can see that 50 research analyses an already incorrect direction which is choosing the social context problem, then observing it and at the end resulting in theoretical analysis. Furthermore, the size of truth determined here is based on an empirical level, as far as it can be experienced in concrete reality. Strictly, truth exists if there is a match between ideas and concrete experience which is involving the social problem here throughout the observation to reach the correspondence theory of truth. Thus, this epistemologically qualitative research, here, should be testable where it can be tested by someone through an experiment or measurements to reach the scientific truth to answer the questions. As for the data and data source, qualitatively, in 2019 research most of the data have come from the result of the use of an instrument such as an interview and questionnaire. In addition, the data source falls on the students and teachers. It could be in students and teachers’ opinions. From 50 research, there are 34 qualitative research, 2 mix-methods, 8 quantitative research, 1 Research and Development, 2 content analysis research, and there was 3 research that did not mention the methods as well.

Qualitative

The qualitative method, in the studies epistemological usually, used instruments, such as questionnaire and interview to collect data. Then, the researcher uses the descriptive qualitative method to describe the results. The main problem in qualitative is usually insufficient methodological knowledge, and lack of attention to the philosophical underpinning of qualitative methodology are some important challenges. One of the research projects in 2019 shows a similar problem which is Inconsistency between research question and methodology. The nature of inductive reasoning has a deep relationship with the qualitative method. Inductive reasoning aims at developing a theory after the observation is done by the researcher. It is also related to the social, cultural, historical, and individual settings, according to most qualitative researchers. As a result, the researcher will seek persons who can describe, examine, or explain phenomena in real-world settings. Then, it also has a close relationship on the hypothesis-generating, so here the researcher is exploring the set of data searching for relationships or patterns, and then they start to propose hypotheses which may then be tested in some subsequent study. The hypotheses also have functioned as to design to test some theory for further exploration of data. It is done to attempt to generate the new hypotheses in a more useful manner. The chosen context of discovery will have it linked to answering the generating questions in this research. Where the problem started or proposed and get to be observed than in the end generate research result. The research result then will be compared and examine the relationship whether the researchable to give the linear theory with the result. In here, mostly, the research in 2018 is already able to answer the research questions. From the theory above, we can see the use of the correspondent theory of truth exists to examine the idea in the hypothesis with the real situation or experience to reach the scientific truth to answer the questions. To do that, we require validity and reliability in research. However, most of the research in 2018 did not mention the validity and the reliability. Some try to implicitly state the involvement of validity and the reliability at the end of the result and some others do not mention at all validity and reliability. The validity and reliability are very important elements in research, which have a function to determine the truthfulness of data, used to evaluate the quality of research. They indicate how well a method, technique, or test measure something. To reach

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From the perspective of epistemology, it is important to elaborate on how researchers frame their research in their attempts to discover knowledge and how science is gained. The scientific method of quantitative mostly begins with a problem. The main problem in quantitative analysis is usually 'phenomena' that require a systematic investigation by gathering quantifiable data and performing statistical analysis. As for the quantitative in 2019 that is being analyzed is mostly seeking for the effectiveness of one strategy toward English skills and focus on teachers' competencies. As for the data, here is a pre-test that is given before the treatment and the post-test is given after the treatment is implemented in a certain period. The role here is too limited to data collection and interpretation in an objective way. Epistemologically the quantitative research requires deductive reasoning where the researcher needs to formulate a set of hypotheses at the start of the research. However, in this research, the research does not include the set of hypotheses where it might have the drag on effect which in this research there is no hypothesis-testing verification. It will also long drown to research evidence that cannot be compared with a hypothesis. In the end, it affects the coherence theory of truth, wherein here we are not sure how to consider whether the previous statement is true or not. That is the way this research in the term of epistemological analysis is still lacking because in here hypothesis is needed to assume made on some basic, limited evidence for further investigation.

Research in 2020

From the 50 researchers in this year, the method which is most usually used by researchers is qualitative. There are 40 qualitative research, 3 mix-methods, and 7 quantitative research. These qualitative research methodologies aimed to describe and analyze phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of people individually or in groups. Multiple descriptions used to discover the principles and explanations that lead to conclusions. This research is inductive in nature, the researcher allows problems to emerge from the data or is left open to interpretation. The data were collected with careful observation, including descriptions in a detailed context accompanied by notes from in-depth interviews, as well as the results of analysis of documents and notes. They are widely used to 'describe and explore' and to 'describe and explain'. Based on the objectives to be achieved, these qualitative research using data collection instruments that are suitable for their purposes. For example, when researchers want to obtain information about the perceptions of teachers or students, the technique used is interviews, not observation. Meanwhile, when the researcher wants to know how the teacher creates a lively classroom atmosphere, then the technique used is observation. Likewise, if the researcher wants to know the competence of students in certain subjects, the technique used is a test and test documents in the form of test results.

For quantitative research methodology, the researcher should make a research design, which consists of the problem, the theory used, the research hypothesis and determine the population and sample. However, from 7 quantitative studies, there is only 1 research that uses a hypothesis. After that, the researchers determined the instrument used where they used a questionnaire on average. Then, they collect and analyze the data. Finally, they make a research report based on the data they process to answer the research question. There are 5 correlation methods and 2 experimental methods in this research, and only one of the correlation methods uses the hypothesis. For the mix method, the 3-researcher used Research and Development. It used to develop material in school regarding students' skills. In this study, researchers combine research methodology, both quantitative research methods and qualitative research methods. For example, in this research and development, the

researcher uses a questionnaire as an instrument. The results obtained are data that talk about the percentage that describes a symptom. To find out why the data speak this way, the researcher uses interviews. The use of a combination of these methods to reduce the weaknesses of each existing approach. From the 50 researchers in this year, the method which is most usually used by researchers is qualitative. There are 40 qualitative research, 3 mix-methods, and 7 quantitative research.

Qualitative

These qualitative research methodology aims to describe and analyze phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of people individually or in groups. Multiple descriptions used to discover the principles and explanations that lead to conclusions. This research is inductive in nature, the researcher allows problems to emerge from the data or is left open to interpretation. The data were collected with careful observation, including descriptions in a detailed context accompanied by notes from in-depth interviews, as well as the results of analysis of documents and notes. They are widely used to 'describe and explore' and to 'describe and explain'. Based on the objectives to be achieved, these qualitative research using data collection instruments that are suitable for their purposes. For example, when researchers want to obtain information about the perceptions of teachers or students, the technique used is interviews, not observation. Meanwhile, when the researcher wants to know how the teacher creates a lively classroom atmosphere, then the technique used is observation. Likewise, if the researcher wants to know the competence of students in certain subjects, the technique used is a test and test documents in the form of test results.

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CONCLUSION AND SUGGESTION

Conclusion

The two major and most popular forms of research are qualitative methodology, which is descriptive qualitative on phenomenology paradigm and quantitative methodology, which is on positivist paradigm. Quantitative methodology is concerned with attempts to quantify social phenomena and collect and analyze numerical data and focus on the links among a smaller number of attributes across many cases. Qualitative methodology, on the other hand, is more concerned with understanding the

meaning of social phenomena and focuses on links among a larger number of attributes across relatively few cases. In any research endeavor, linking research and philosophical traditions or schools of thought helps clarify a researcher's theoretical frameworks (Cohen, et al. 2000). The framework for any research includes beliefs about the theory of knowledge that informs the research (epistemology) and how that knowledge may be gained (methodology) that brought about differences in the type of research methodologies used in the research. The fundamental divergence between qualitative and quantitative inquiries lies in the logic of justification, not methods as techniques. The two methodologies in question were developed from two completely different epistemological perspectives and represent two distinct worldviews or paradigms (Silverman, 2004). Guba and Lincoln (1994) state that paradigms represent one's set of basic beliefs and as such must be accepted simply on faith. Each researcher should decide which paradigm reflects his or her set of personal beliefs and adhere to that worldview. Guba and Lincoln (1989) argue that meta-theoretical assumptions underlying the two approaches are so different that any reconciliation would destroy the philosophical foundations of each. The Epistemology of each approach is so idiosyncratic that they cannot be combined. As Guba (1987) states, one paradigm rules out the other, just as surely belief in the round world precludes belief in the flat one. Nevertheless, some argue that it is possible to subscribe to the philosophy of one approach and employ the methods of another (Reichardt and Cook, 1979; Sale et al., 2002; Walle, 1997; Walsh, 2003). Sale et al. (2002) suggests that the fact that the approaches are epistemologically incommensurate does not mean that multiple methods cannot be combined in a single study if it is done for complementary purposes. They caution that each method studies different phenomena and the distinction of phenomena in mixed-method research is critical and should be accounted for. This reveals an additive outcome for mixed-methods research. Based on this account, it is concluded that the most used research article from 2018-2020 is mostly qualitative approaches.

However, it does not limit the other types of methods that are being used. In these years, there are qualitative and quantitative and mixed methods. Mixed method is a work that can be done in a single study or series of investigations. Mixed research involves mixing and combining qualitative and quantitative research in single research studies. It is based on the philosophy of pragmatism (i.e., what works is what should be important in answering research questions). However, unfortunately, from the result of analysis in qualitative, quantitative, and mixed methods, some authors are actually showing the incompatibility of epistemology from the perspective of theory of truth. The incompatibility of Quantitative research shows: The necessity of deductive reasoning, which necessitates the researcher formulating a set of hypotheses at the outset of the study. However, this study does not contain a set of hypotheses that may have a drag-on effect, and there is no hypothesis-testing verification in this study. Research findings cannot be matched to a hypothesis since it will take too long. Finally, it has an impact on the coherence theory of truth, in which we are unsure if the prior assertion is true or not. That is why, in terms of epistemological analysis, this research is still missing since a hypothesis is required to assume based on some fundamental, restricted data to pursue further exploration. As for the inconsistency in qualitative it lays on the mismatch between the study topic and the approach. More specifically, the research topic is looking for correlational data, which is classified as a non- experimental research approach. The correlation was meant to be a quantitative approach from there, but the researcher chose to employ a qualitative method in this case. As for most of the research in 2018, the validity and reliability, on the other hand, were not mentioned. Some attempt to convey the role of validity and reliability implicitly at the conclusion of the finding, while others make no mention of validity or reliability at all. Validity and reliability are critical components of research that define the accuracy of data and are used to assess the research's quality. They describe how successfully a method, methodology, or test measures a certain parameter. To get at the truth in the

study, it must demonstrate a connection between concepts and real-life experience, data, method, methodology, or test measures, and research findings.

Suggestions

Therefore, as the reviewer of the epistemological review of the study, suggests that it should be followed step by step in making great research. Throughout the study, very different ways of data collection are utilized. As suggested, research questions should question what “we do know” along with what “we can know”. This study is one of such inquiries as it pushes the limits of a variety of data collection ways. Thus, the study is epistemologically, and should be based on the theory of truth which shows the nature of each approach that is being used.

The suggestions for planning research:

- Decide what questions you will be studying so it may be wise to limit your study.
- If you will be gathering data, think about how you will gather and analyze it before you start to gather the data. Read reports on related research, focusing on problems that were encountered and how you might get around them and/or how you might plan your research to fill in gaps in current knowledge in the area.
- If you are planning an experiment, look for possible sources of variability and design your experiment to take these into account as much as possible. (1) The design will depend on the situation, (2) The literature on design of experiments is extensive; consult it, (3) Remember that the design affects what method of analysis is appropriate.
- If you are gathering observational data, think about possible confounding factors and plan your data gathering to reduce confounding. Also think about any factors that might make the sample biased. You may need to limit your study to a smaller population than originally intended.
- Think carefully about what measures you will use. If your data gathering involves asking questions, put careful thought into choosing and phrasing them. Then check them out with a test-run and revise as needed.
- Think carefully about how you will randomize (for an experiment) or sample (for an observational study).
- Think carefully about whether the model assumptions of your intended method of analysis are likely to be reasonable. If not, revise either your plan for data gathering or your plan for analysis, or both.
- Plan how to deal with multiple inferences, including "data snooping" questions that might arise later.
- Before doing any formal analysis, ask whether the model assumptions of the procedure are plausible in the context of the data. Plot the data (or residuals, as appropriate) as possible to get additional checks on whether model assumptions hold. If model assumptions appear to be violated, consider transformations of the data, or use alternate methods of analysis as appropriate.
- If more than one statistical inference is used, be sure to take that into account by using appropriate methodology for multiple inference.
- If you use hypothesis tests, be sure to calculate corresponding confidence intervals as well. But be aware that there may also be other sources of uncertainty not captured by confidence intervals.

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