

Article

The Relevance of Philosophy of Socrates to Modern Philosophy of Research

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Abstract: This study determined the components of the philosophies of Socrates, explained the meaning and importance of the components and the relationships between them and analyzed the relevance of philosophies of Socrates to modern philosophies of research. The study was carried out through literature search on philosophies of Socrates. The components of Socrates philosophy are determined as: Questioning and Critical Thinking. Problems bring about Questions, Critical Thinking handles the questions to give birth to Solutions that solve the Problems or better still, that give way to expanded knowledge. Findings also include the importance of questioning as it helps in rethinking and challenging existing theories, helps in building confidence in areas of study, gives motivation to learn more on our areas of research i.e. broadens the mind, also enhances creativity in that it allows thinking from different angles to arrive at something novel, helps with the zeal to know more especially in the area of study and encourages positive change. More findings include the benefits of critical thinking as it encourages inquisitiveness, brings about creativity, promotes problem solving ability, a multi-faceted practice, and a skill for life. It is recommended that questioning and critical thinking be put to practice in research philosophy as contained in the Onion model research methodology propounded by Saunders et al (2019).

Keywords: Socrates, questioning, critical thinking, research philosophy, onion model of research methodology, philosophy

1. Introduction

Philosophy, in the general sense, is the deep thought process on an issue of concern which engages wisdom to solve problems or give way to expand knowledge. It is not true to think that philosophy is a very dry academic exercise without practical application. Philosophy has practical applications. Any enterprise that matters commences with a thought process. Every concrete thing in life starts with a thought. An enterprise that fails along the way might be because of the absence of critical thoughts on it at the inception. Socrates is known to be the father of western philosophy. His philosophies greatly influenced people at his time. From the understanding of literature on his philosophies, it is established that philosophies lay sound foundation for expansion of knowledge. It is therefore necessary to determine the components of the philosophy of Socrates and evaluate their relevance to modern philosophy of research. Philosophies of Socrates are as found in literatures on philosophy (Mark, 2009; Paul & Elder, 2006; Stassen et al, 2011; Socrates: www.biography.com>scholar - 09 Sept. 2019). Modern philosophy of research refers to advanced research work, that utilize Onion Model of Research Methodology, as put forward by Saunders et al (2019).

1.1 Background to the study

Socrates is known to be the father of western philosophy. Philosophy has come a long way, in which it is practiced in all professions and endeavors by literates and illiterates. Many practitioners of philosophy are not aware they are practicing philosophy. Philosophy is widely practiced in research, and it's still being practiced up till this time. It is therefore necessary to determine the components of Socrates philosophy and evaluate their relevance to modern philosophy of research.

1.2 Aim & Objectives of research

The aim of this study is to evaluate the relevance of Socrates philosophies to modern research philosophy.

The objectives are to:

- 1) Determine the components of the philosophies of Socrates.
- 2) Explain the meaning and importance of components of Socrates philosophies and the relationships between them.
- 3) Analyze the relevance of components of philosophies of Socrates to modern philosophy of research.

1.3 Methodology

The data on components of Socrates philosophies were collected through literatures on Socrates and cognitive reasoning of the researcher and were analyzed by content analysis. On the issue of meaning and importance of components of Socrates philosophy and the relationships between them, relevant literatures were utilized coupled with the cognitive reasoning of the researcher. On the relevance of Socrates philosophies to modern research philosophies, analyses were made on the components of the philosophies under study.

2. Literature Review: SOCRATES

Socrates was a Greek philosopher from Athens who is credited to be one of the founders of western philosophy (Mark, 2009). Socrates was born in 470BCE by Sophronicus (father) and Phaenarete (mother) a mid-wife. Socrates was not from a rich family and did not have a formal education. He learnt his father's trade and became an expert in sculpturing and stone mason before he devoted his life to philosophy. As other Greek youths did at that time, he learnt music, gymnastic and grammar. (Socrates-Quotes, Death & Fach, Biography: www.biogaphy.com Sholow 09/ Sept. 2019). Later he joined the army and became a soldier with distinction. It was reported that at the battle of Potidaea, he saved the life of an Army General Alaiabiades (Mark, 2009). At the age of 50 years, he got married to Xanthippe an upper-class woman and had three sons. The sons were not brilliant as their father. Socrates was hard working and intelligent, this made his friend, Chaerephon have dialog with the oracle at Delphi of whether there was any other person that was wiser than Socrates. The answer was Yes: Socrates was the wisest (Socrates: www.unl.edu -10 Feb. 2020; Waterfield, 2009; Mark, 2009)

Socrates disagreed with the information that he (Socrates) was the wisest in the world. In an actual sense he was the wisest. He attempted to prove the oracle wrong; by asking questions from people who were held to be wise in the community, it was then he discovered that the people who were held to be wise are most lacking in wisdom, while those who are held to be unwise were more in intelligence (Paul & Elder, 2006). It was then widely accepted by people at that time that Socrates was the wisest man on earth. Both Socrates (teacher) and his students learn through answers to questions. What made him wise was asking questions from elders and others, about life and on any topic of interest. Through questioning about life, he had more information about life and that made him very wise. At that time, he had a large youth follower because of his teachings. Socrates was full of critical thoughts in the way he got answers to the questions posed to people (Socrates: lessme.wordpress.com-27 May 2011; Paul & Elder, 2006)

Socrates believed philosophy should achieve practical results for the greater wellbeing of society. (www.biography.com scholar- 9 Sept 2019). This will be to the extent of putting the thoughts to practice. One of the famous statement of Socrates is: "The only true wisdom is in knowing that you know nothing" which means when you know you know nothing you will find out information through questioning. Socrates professed not to teach anything and not to know anything important, but to seek answers and knowledge/information from questioning about human endeavors. Both Socrates and his followers sought to know and learn through questioning. The belief of Socrates was that philosophy should move from theory to practice and improve the wellbeing of people (Socrates: www.unl.edu -10 Feb. 2020; Paul & Elder, 2006)

Socrates philosophy is based on using questioning methods to expand his knowledge. His philosophy is laid on critical thinking to know the appropriate questions to ask on a life endeavor to bring out appropriate knowledge (kpu.cal/learningcentres (Critical Thinking). Critical thinking on the other hand operates on the side of the respondent to give appropriate information to the questions.

Critical thinking is defined as the process used to reflect on issues and judge the assumptions underlying our own and others' ideas and actions. This includes dispositions and orientations; problem solving skills; contextual influences; use of multiple perspectives; awareness of one's own assumptions, capacities for meta-cognition, or a specific set of thinking processes/tasks of the thinker (Stassen, et al, 2011)

The major reason for questioning by Socrates is to gather information and learn. Questioning makes a person develop his critical thinking skills and engage in analytic discussion which results to independent learning and thinking. Questioning and critical thinking can be used to explore ideas, to get to the root of things, to uncover assumptions and to analyze complex concepts. This type of questioning usually focuses on basic concepts, principle, theories, issues, and problems (Stassen, et al, 2011)

Socratic questioning can be used in modern day philosophy in:

- probing your thinking which helps you to begin to distinguish what you know from what you don't know or understand.
- fostering your abilities to ask Socratic questions for yourself and others, so that you can use these tools to critically question the situation. The more you practice these, make things more perfect and give more knowledge and understanding (Stassen, et al, 2011).

Socrates had many students. Notable among them was Plato. It was Plato that wrote down all we read and know about Socrates Philosophy (Mark, 2009).

Socrates approach to questioning is based on the practice of disciplined, thoughtful dialogue; in this technique; the teacher (Socrates) professes ignorance of the topic to engage in dialogue with the students. With this technique the teacher and learner develop the fullest possible knowledge about the topic (www.intel.com The Socrates Questioning Technique Intel)

Socrates did the followings in his method of expanding his knowledge through questioning: he clarified concepts; probed assumptions; probed rationale, reasons and evidence; questioned new points and perspectives; questioned the question(s) (www.uni.edu -10 Feb. 2020)

Socrates in attempts to strengthen his thoughts to success, did the followings: examined an idea; listened to common sense and popular statements in thoughts, in the media, in social conversation; looked for exceptions; if an exception was found, the statement is false or imprecise (lessmme.wordpress.com 27 May 2011)

Socrates broke traditions by questioning the traditions in the process he angered the noble men in the city, who pronounced that 81 years old Socrates broke tradition. The consequence of this was death. He was charged in court but did not allow his friends to defend him in court, even free of charge. He was sentenced to death and died through poisoning. He died 399 BCE (Mark, 2009)

3. Data Analysis and Findings

3.1 Objective 1: Components of Socrates philosophies

Components of Socrates Philosophy are the elements or constituents that the thought process will pass through or must be available, from inception to completion to make the thought process complete and successful.

The components which are the elements of Socrates philosophies are obtained through literatures: (Mark, 2009; Paul & Elder, 2006; Stassen et al, 2011; Socrates: www.biography.com>scholar - 09 Sept., 2019; Etemadzadeh et al 2012; Socrates: lessmme.wordpress.com - 27 May, 2011; Socrates: www.unl.edu -10 Feb., 2020). These literatures were studied to determine the elements or constituents that helped Socrates' philosophies, and this was done through content analysis.

Content Analysis refers to the research tool used to determine the presence of certain words concepts within texts or group of texts. It is used to quantify and analyze the presence or relationships of such words and concepts, then make inferences and messages within. It is a technique for systematically describing written oral or visual communication. In this way the set of information is broken down into categories and summarized (Weber, 1990; Mc Brooen, 1992).

Through content analysis, the components are determined and summarized as: *Questioning and Critical Thinking*.

3.2 Objective 2: Explain the meaning and importance of components of Socrates Philosophy (Questioning and Critical Thinking) and the relationships between them

3.2.1 Questioning

Question means to ask, inquire, enquire, interrogate, query, examine. A question is a word or words used to find out information (Geddes & Grosset, 2010).

Questioning therefore means the act of asking or querying or examining or interrogating a person or group of persons on an issue. Questioning can occur within oneself and can be directed from one person to another person(s)

Importance of Questioning:

According to Make Me Better (2021) & <https://theimportantsite.com> (19 Jan 2017), questioning:

- i) helps in rethinking and challenging existing theories.
- ii) helps in building confidence in areas of study.
- iii) gives motivation to learn more on our areas of research ie broadens the mind
- iv) also enhances creativity in that it allows thinking from different angles to arrive at something novel.
- v) helps with the zeal to know more, especially in study.
- vi) encourage positive change.

3.2.2 Critical Thinking

According to Islam (2015) critical thinking is the ability to analyze the way you think and present evidence for your ideas, rather than simply accepting your personal reasoning as sufficient proof. It is a kind of thinking that is self-directed, self – disciplined, self- monitored and self- corrective. Alban (2021) defines critical thinking as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action. It can also be described as reasonable and reflective thinking that is centered on what to do or believe. Critical Thinking is therefore the deep analytical meditation or reasoning or reflection or deliberation or rumination on an issue that takes place in the brain and mind.

Crockett (2021) has appreciated the significance of critical thinking in that:

- i) It encourages inquisitiveness: being inquisitive helps the critical thinker to gain a deeper knowledge and understanding of the things that matter to him in the world around him. Serious critical thinkers don't take anything

- at face value, they ask questions to reveal more facts than they have seen. Answers to these questions will enable them to take correct decisions.
- ii) It brings about creativity: critical thinkers don't operate with assumptions, rather they question assumptions to discover hidden underlying facts that may capsize reliance on them. They create their own real beneficial world away from assumptions. The thirst of critical thinkers to think about any issue indicates a desire for constructive results.
 - iii) It promotes the problem-solving ability: critical thinkers think very widely and that naturally make them to be problem solvers. The hall marks, among others of a critical thinker are patience and commitment to understanding a problem. Critical thinkers usually spend more time to define and understand a problem and spend little time to write down solutions.
 - iv) It is a multi-faceted practice: critical thinking covers a wide range of disciplines and in fact any endeavor or project or business that is to be successful at the end must pass through critical thinking. Among other things critical thinking encourages the improvement of the followings: reasoning skills, analytical thinking, evaluative skills, logical thinking, organizational and planning skills, language skills, self-reflective capacity, observational skills, open mindedness, creative virtualization techniques, questioning ability and decision making.
 - v) It is a skill for life: If anybody is to remain relevant for a long-time, critical thinking is the instrument to be possessed for life.

3.2.3 Questioning and Critical Thinking: Relationships between them

In this study, Questioning and Critical Thinking have been established as the components of Socrates Philosophy and can be generalized to any philosophy. Questioning is the forerunner of critical thinking. The major aim of philosophy is to solve problems through the thought process. Problems give rise to questions and questions give rise to critical thinking and critical thinking leads to answers, solutions or expanded knowledge. According to Paul and Elder (2000) thinking is not driven by answers but by questions. If questions had not been asked by those who formed a subject, that subject would not have expanded at all. To keep a profession or discipline alive, teachers in that discipline should constantly ask questions so that that discipline or profession would not close. In other words, philosophy through its components of questioning and critical thinking leads to expansion of knowledge and discipline. It is in the order of: Problem, Questioning, Critical Thinking and Solution/Expanded Knowledge. If there is no problem to solve there may not be philosophy.

There is low level questioning and high-level questioning. Low level questioning leads to low level critical thinking while high level questioning give rise to critical thinking (Nappi, 2021)

Researchers (Nappi, 2021; Anderson & Krathwohl, 2001) have noted the taxonomy of cognitive domain of Bloom et al (1956) is a good format on which questioning can depend, see Table 1.

Table 1. Questioning: from levels in Bloom's Taxonomy.

LEVEL	DEFINITION	SAMPLE VERBS	SAMPLE BEHAVIORS
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.	Write List Label Name State Define	The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.	Explain Summarize Paraphrase Describe Illustrate	The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem. or task with a minimum of direction.	Use Compute Solve Demonstrate Apply Construct	The student will write an instructional objective for each level of Bloom's taxonomy.
ANALYSIS	Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question.	Analyze Categorize Compare Contrast Separate	The student will compare the cognitive and affective domains.

SYNTHESIS	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.	Create Design Hypothesize Invent Develop	The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains.
EVALUATION	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	Judge Recommend Critique Justify	The student will judge the effectiveness of writing objectives using Bloom's taxonomy.

Bloom et al. (1956) taxonomy with illustrated verbs and student behaviors; culled from Nappi (2021)

Although Anderson & Krathwohl (2001) on Table 2, made a little change in the taxonomy that evaluation is less difficult than synthesis which according to Lutz & Huitt (2003) do not negate Bloom et al (1956) and hold the view that they are both difficult. Lutz & Huitt (2003) put it forward that evaluation involves critical thinking while synthesis makes use of creative thinking. Bloom et al (1956) according to Nappi (2021) showed that 95% of assessment questions in college classroom were low level questions. Researchers have shown that 20% of classroom questions asked by teachers are higher cognitive questions, 20% are procedural while 60% are lower cognitive questions (Cotton, 2001; Hattie, 2012). Low level questions only make students to recall (knowledge and comprehension) while higher cognitive questions enable students to think deeply using application, analysis, synthesis, and evaluation in the realm of critical thinking going by Bloom's taxonomy. With respect to Anderson & Krathwohl (2001) application, synthesis, evaluation all falls under critical thinking while synthesis come under creative thinking. The basic occupation and profession of the 81-year-old Socrates was stone mason and sculpturing before he delved deeply into philosophy. Socrates must have engaged critical thinking to improve his environment philosophically and made use of creative thinking to improve his technical trade.

Table 2. Revision of Blooms Taxonomy of educational objectives.

Knowledge	Cognitive Processes					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Facts						
Concepts						
Procedures						
Meta cognitive						

Anderson and Krathwohl (2001) revision of Bloom et al. Taxonomy (1956); culled from Nappi (2021); adapted from <http://peer.baumgartner.name/wp-content/uploads/2016/02/Anderson.Krathwohl.Taxonomy.png>

Creative Thinking is the generation of new ideas within or across disciplines. It actively engages students in bringing together existing ideas into new configuration; developing new properties or possibilities for something that already exists and discovering or imagining something entirely new (<https://faculty.chass.ncsu.edu>slatta>, visited on April 9th 2022). According to (<https://thepeakperformancecentre.com>, visited on April 9th 2022) creative thinking is a way of looking at problems or situations from a fresh perspective to conceive of something new or original.

Critical Thinking is the active, persistent, and careful consideration of a belief or norm of knowledge. It includes analysis and judgment about the ideas and conditions that support beliefs and the conclusions that follow. It involves analyzing and evaluating one's own thinking and that of others. It is subject to intellectual standards, including clarity, accuracy, precision, relevance, significance, depth, breadth, logic and fairness (<https://www.faculty.chass.ncsu.edu>slatta>, visited on April 9th 2022). Also, according to (<https://www.thepeakperformancecentre.com>, visited on April 9th 2022) critical thinking is the logical, sequential disciplined process of rationalizing, analyzing, evaluating and interpreting information to make informed judgments and or decisions.

Skills for creative thinking involve open mindedness, flexibility, imagination, adaptability, risk taking, originality, elaboration, brainstorming and imagery. (<https://thepeakperformancecentre.com>, visited on April 9th 2022)

Skills used in critical thinking are interpreting, analyzing, connecting, integrating, evaluating, inferring, comparing, contrasting, classifying, sequencing, patterning, reasoning, forecasting, hypothesizing and critiquing (<https://www.thepeakperformancecentre.com>, visited on April 9th 2022).

Differences between critical thinking and creative thinking:

- i) Creative thinking tries to create something new, while critical thinking seeks to assess the worth or validity of something that already exist.
- ii) Creative thinking is generative while critical thinking is analytical.
- iii) Creative thinking is divergent while critical thinking is convergent.
- iv) Creative thinking is focused on possibilities, while critical thinking is focused on probability.
- v) Creative thinking is accomplished by disregarding accepted principles, while critical thinking is accomplished by applying accepted principles (<https://www.thepeakperformancecentre.com>, visited on April 9th 2022).

3.3 Objective 3: Analyze the relevance of philosophies of Socrates to modern philosophies of research

Objective 3 is tackled by (a) description of research philosophies and methodology (b) discussing the usefulness/significance of research philosophy and (c) examining the components of Socrates philosophy in-latent-use in modern philosophy of research.

3.3.1 Description of Research Philosophy and methodology as captioned by Saunders et al (2019).

The research onion model provides a single comprehensive framework for research process that allows the researchers to review each layer systematically (Refer to Figure 1). Research onion as formulated by Saunders et al (2019) is a framework which helps the researcher to discover issues or reasons surrounding the selection of research methods. Research philosophy on onion model of research methodology has three elements: ontology, epistemology, and axiology. This first step as research philosophy refers to the formation of knowledge and the character of the knowledge which is developed. It also refers to opinion and views and the manner in understanding of the world. This greatly impacts and influences all the other five layers. Research approach, which is the second layer refers to a process of creating new knowledge or a new method of enhancing the understanding of a subject. The two basic approaches are deductive and inductive approaches. Research strategy, the third layer, refers to a plan of action that directs the way in which the research should go on (either: experiment, survey, case study, action research, grounded theory, ethnography, or archival research). Research choice, the fourth layer, refers to the reason why somebody has chosen to research in a particular subject or the way a person chooses to research it (mono method, mixed method or multi method). Research time horizon, which is the fifth layer, determines whether the research will run for a short or long time. Research techniques and procedures, the sixth layer, refers to the collection and analysis of data. (Saunders et al, 2019). All these six layers take place in thoughts before the field work of utilizing the sixth layer.

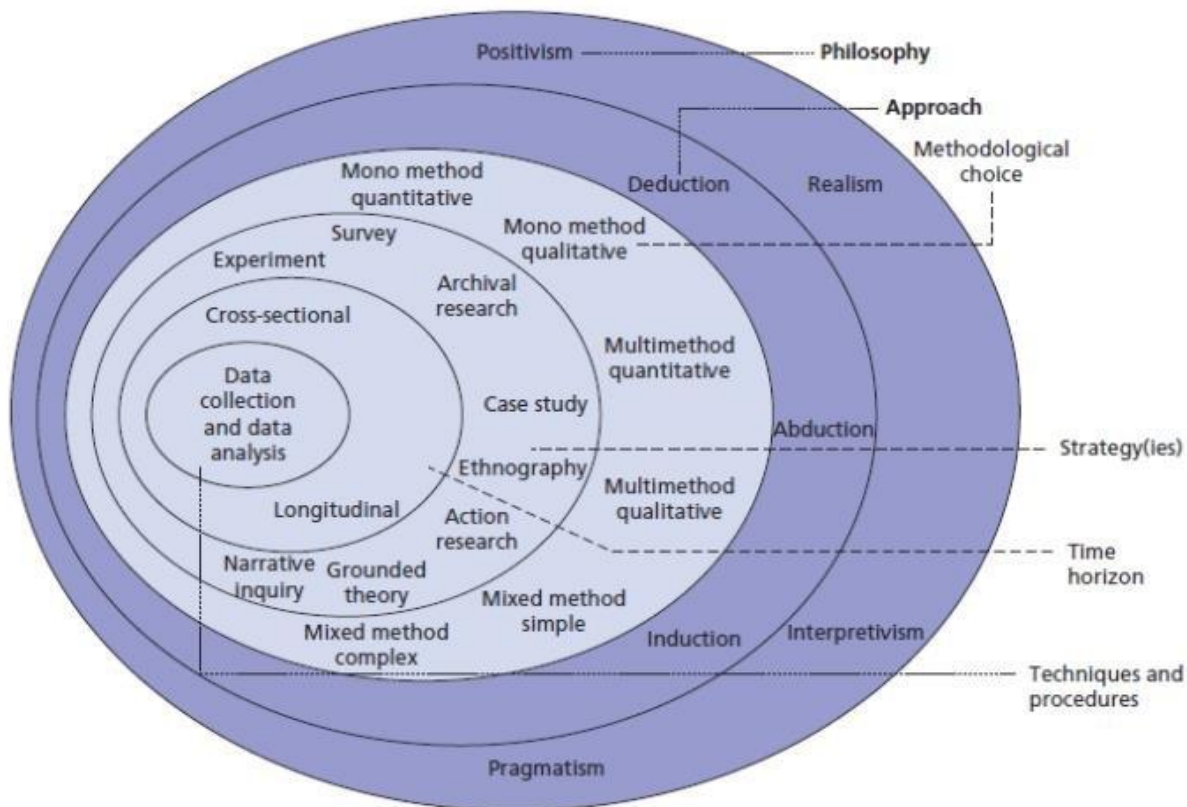


Figure 1. Onion model of research methodology (Saunders et al, 2019).

Research philosophy pluralism depicted on the first layer, consists of ontology, epistemology, and axiology. Ontology is the study of realities behind existence. Epistemology is the study of the body of knowledge of realities behind existence. Axiology is the study of values of realities behind existence. These definitions are adapted from Abdul-Nifa (2013), Sexton (2007) and Aouad (2009). Each of these research philosophy pluralisms is placed to solve problems. Questions needed to be asked as a way to solve the problems.

Ontology asks the question: what are the realities behind the existence of occurrences? Critical thinking is needed before arriving at a dependable solution.

Epistemology asks the question: what is knowledge? How is knowledge acquired? What people do know? How do we know what we know? Critical thinking is needed before arriving at dependable solutions.

Axiology also asks the question: what are the values of realities behind the existence of occurrences? Critical thinking is also needed before arriving at a dependable solution.

Therefore, Questioning and Critical Thinking are required for the researcher to make success of his research philosophy.

3.3.2 Usefulness/significance of Onion Research Philosophy and Methodology

- i) Dictates the type of research: either qualitative, quantitative, or mixed
- ii) Determines whether research approach will be deductive or inductive reasoning.
- iii) States whether research strategy will be either experimental, survey, action, ethnography, grounded theory, historical/archival or case study.
- iv) Helps to analyze qualitative, quantitative or mixed research into mono method, multiple method or mixed method as will be applicable to the research in view.
- v) Determines the duration of research whether it will be long or short.
- vi) Determines the data collection method(s) of the already stated research strategy whether by observation, measurement, construction, questionnaire, interviews, or literature (Saunders et al, 2009 & 2019; Ayodele, 2017).

3.3.3 Examining the components of Socrates philosophy in-latent-use, in modern philosophy and methodology of research.

The second to sixth layers of onion research methodology require thoughts (deep thinking) before practical implementation and therefore can be referred to as Research Methodological Philosophy. The issues of Questioning and Critical Thinking are also brought to play like in the research philosophy as demystified in the examples below. The components of Socrates philosophy (Questioning & Critical Thinking) are in latent operation in modern research philosophy and methodology but should now be written and intentionally made use of. The usefulness of research philosophy treated above will be considered in examining the components of Socrates philosophy as used in modern philosophy and methodology of research, in this respect, as in examples 1-6 discussed below:

- i) Example 1:
In philosophizing to determine the type of research at the level of research philosophy.
Questioning: What is the type of research in this investigation? (Is it quantitative, qualitative, or mixed?)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine/dictate the answer (actual type of research).
- ii) Example 2:
In philosophizing to determine the type of research approach.
Questioning: What is the type of research approach in this investigation? (Is it deductive reasoning or inductive reasoning?)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine the answer (actual type of research approach?).
- iii) Example 3:
In philosophizing to determine the type of research strategy.
Questioning: What type of research strategy will be appropriate? (Is it experimental, survey, action, ethnography, grounded theory, historical/archival or case study?)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine the answer (actual type of research strategy?).
- iv) Example 4:
In philosophizing to determine the mode of the type of research either mono method, multiple method, or mixed method.
Questioning: What is the mode of the type of research (is it mono or multiple or mixed?)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine the answer (actual mode of operation of the type of research).
- v) Example 5:
In philosophizing to determine the duration of research whether it will be long or short.
Questioning: What is the duration of research (whether it will be long or short)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine the answer (duration of research).
- vi) Example 6:
In philosophizing to determine the type of research data collection method.
Questioning: What is/are data collection method(s)? (is / are it/they- observation, measurement, construction, questionnaire, interviews, or literature?)
Critical Thinking: this follows in the brain and mind, considering the topic of research and what is involved, to finally determine the answer (actual type of data collection method(s)?).

4. Conclusion

The components of Socrates philosophy are Questioning and Critical Thinking. Problems bring about Questions, Critical

Thinking handles the Questions to give birth to Answers that solve the Problems or better still, that give way to expanded knowledge. The parameters of modern research philosophies take their sources from Socrates philosophies as described in the: description of research philosophies, usefulness/significance of research philosophies and examining the components of Socrates philosophies in used in modern philosophies of research, all as contained in responses to objective 3.

Conflicts of Interest: The authors declare no conflict of interest.

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