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CRITICAL THINKING AND CREATIVITY FOR SUSTAINABLE DEVELOPMENT

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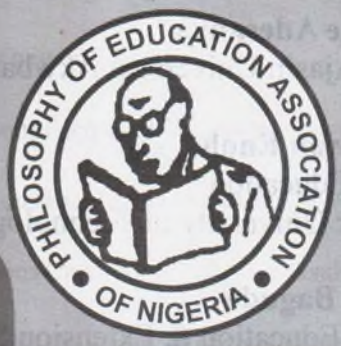

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THE SOCRATIC METHOD FOR CREATIVITY, CRITICAL THINKING AND SUSTAINABLE DEVELOPMENT

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Abstract

In Nigeria today, there is a growing need for individuals to think in divergent ways to solve the nation's social and economic challenges, and bring about desired growth. Education has been seen as the bedrock of development in any society. This paper takes a critical look at the Socratic method of imparting knowledge and how it can help learners to build creative ability that can lead to sustainable development in the society. Socrates stated that ideas are formed from the mind and with systematic questioning, man can reason out solutions to life bordering issues in order to create, innovate as well as proffer solutions to society's problems. This paper examines Socrates' dialogue with Meno, about a slave boy who was able to solve geometric equation without being taught by a teacher. The paper did not suggest a policy or skill, rather it emphasised the role of a teacher in helping to draw out or lead out the hidden potentials innate in man.

Introduction

The role for reforming, re-creating and re-structuring the society has constantly fallen on teachers in the schools, this calls for the need to re-emphasise the role of teachers in leading learners to desirable level of intellectual development. Teachers stand out as one of the most important members of the society that can determine the quality of education in relation to national development. At every level, learners rely on the teachers for acquisition of necessary skills to enable them become functional in the society thus, the personal qualities, educational and professional competence acquired become rewarding to the learners1 and society. It is on this basis that the roles of teachers in helping students to achieve the objectives of creativity in their various endeavours become paramount and a challenge particularly in the 21st century Nigeria. Education, according to Ukeje cited by Nakpodia abd Urien (2011), unlocks the door to modernisation and sustainable development. However, the teacher holds the key to the door.

The idealists are of the view that man is created with qualities which the process of education needs to explore to the fullest advantage. Therefore, the teacher and the school are saddled with the responsibilities of developing these innate qualities in learners. Despite the enormous tasks of teachers, there is the general consensus in Nigeria's labour market that graduates are not employable, because a larger percentage finds it difficult to defend the certificates they possess. This reveals that a lot is still expected from teachers and schools to awake the inbuilt abilities of man as emphasised by Socrates who stated that ideas come from the mind, and to draw out this ability, the mind needs to reason critically so as to be creative and innovative for necessary development. Therefore, creativity and critical thinking can serve as link to achieve goals of education which include society's desire for sustainable development. This paper endeavours to explore how the concept of Socratic method of teaching can help learners to become creative through the process of critical thinking.

What is Creativity?

There seems not to be a universal definition for creativity; to the layman, creativity involves ability to invent, act, sing, design, draw, etc. It could also mean being gifted in the work of arts and crafts. Coughlan (2007) defined creative thinking as applying imagination to finding a solution to your learning task. This definition seems to be limited in scope as it reduced the role of creativity to just ability to tackle learning tasks. Alghafri and Bin Ismail (2014) defined creativity as the production of something new or original. This definition sounds more refined as it portrayed creativity in terms of producing something novel and original which can be termed as innovation. Naiman defined creativity as the act of turning new and imaginative ideas into reality. He further stated that creativity involves two processes; thinking and producing.

The term innovation involves the implementation of an idea. When an idea is conceived by an individual but not acted on, such a person can be considered as being imaginative but not creative. International education expert, Sir Ken Robinson, states that creative process involves being imaginative, creative and innovative, which are three distinct but related concepts. Imagination relates to seeing something in the mind's eye, creativity involves using imagination to solve problems as well as produce, while innovation is applying creative ideas and implementing solutions. The above tied learners who exercise creativity as combining imagination, creative thought, and innovation to produce something valuable. Therefore, the ability to imagine, produce, and innovate becomes important components of what it means to be creative and qualities that are fundamental to sustain education and development especially in Nigeria beyond this age.

This paper therefore sums up the concept of creativity as a process of generating ideas that are valuable. The process of generating these ideas involves assessing issues and concepts with an unbiased mind, examining problems in a critical and logical order and creating the link to explore new possibilities. The premises of this paper is anchored on the teacher moulding a creative man using the Socratic method otherwise referred to as **questioning or dialectic method;therefore,** our next focus will be on the examination of the Socratic method.

The Socratic Method

One of the most popular quotes ascribed to Socrates is '….. the unexamined life is not worth living….'. This quotation can be considered as the basis for the development of dialectic or Socratic method of imparting knowledge. The method is one of the most famous, but can be said to be the least used and the least understood teaching and conversation practice.

[1] Onuohia, N.K. "The Role of Education in Nation Building: A Case Study of Nigeria." West African Journal of Education. Volume 19 (1975): 435-450.

[2] Nakpodia, E.D. and Urien, James. "**Teacher Education in Nigeria: Challenges toEducational Administrators in the 21st Century.**" The Social Sciences Year: 2011, Volume: 6, Issue: 5, Page No.: 350-356 DOI:10.3923/sscience.2011.350.356.

The Socratic method is named after the Greek philosopher Socrates (469BC–399BC), who lived in Athens, Greece. The knowledge of Socrates comes to us from various dialogues such as *Crito, the Republic, Phaedo,* and others from his famous student and disciple, Plato.

The Socratic method takes the form of question and answer; it is a dialectical style in which Socrates would argue both sides of a question in order to arrive at a conclusion.Socrates believed that the highest benefit of his art was to help people do their own thinking in a way that leads to the birth of their own new ideas. In Socrates' dialogues, the primary focus is on the original thinking of the respondent as they try to answer Socrates' questions. Once a new idea is developed via Socrates' philosophical midwifery exercise in which he limits himself to asking questions alone, the new idea is then examined to determine if the idea is a phantom or instinct with life and truth. This examination involved Socrates asking more questions which help the respondents think critically about their previous answers. The Socratic method, with its focus on a person's original and critical thinking in the context of life's important questions, is foundational to human moral development.In essence, Socratic method or dialectics is the critical examination of a position or state of affairs. As a critical inquiry, dialectics looks for inadequacies in a position or in an existing state of affairs. Socrates' notion of dialectics seeks to set up a kind of cognitive dissonance in the mind of the thinker. Once the inadequacy has been discovered, it is only natural for the human mind to try to solve the problem.
There could be several styles of question oriented dialogues that may claim to be dialectic, but just asking lots of questions does not automatically translate to the use of Socratic method.The Socratic method according to Babarinde is similar in structure to the scientific method as both methods contain the use of empirical evidence (empiricism),

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There could be several styles of question oriented dialogues that may claim to be dialectic, but just asking lots of questions does not automatically translate to the use of Socratic method. The Socratic method according to Babarinde is similar in practical, logical reasoning (rationalism) and possessing a skeptical attitude (skepticism).The general characteristic one finds in any of critical reasoning (dialectic) and scientific method is the invention of new idea, theory or tangible objects which are valuable (creativity) to man, his community and world at large. A study of the Socratic method therefore should be the starting point for the teacher who would give to th1e art of questioning a scientific outlook.

[3]Coughlan, Ann. "**Creative Thinking and Critical Thinking.**"DCU Student Learning Resources 2007 (date retrieved 7/4/2016).

[4]Alghafri, Ali Salim and Bin Ismail, Hairul Nizam. *The Effects of Integrating Creative and Critical Thinking on Schools Students' Thinking : International Journal of Social Science and Humanity, 2014. Vol. 4, No. 6.*

[5]Linda Naiman, What is Creativity? http://www.education.com/pdf/towards-definition-creativity/

[6]Ibid.

The dialogues of Plato, which are the most significant and detailed historical references to Socrates suggest that there is not just one Socratic method. The exact style and methodology of the Platonic Socrates changes significantly throughout the dialogues. There is the classic and modern Socratic method. The classic Socratic method is distinguished from the modern Socratic method by the nature of its questions. Socratic method is distinguished from the modern Socratic method by the nature of its questions. The classic Socratic method pursues the big questions about justice, virtue and other basic qualities of human character and living. Here, the answers are not known by the Socratic facilitator. However, the modern Socratic method asks questions about topics that possess or have known, expected, and verifiable answers, such as the answers sought in the geometry experiment in Plato's Meno dialogue.

Aims of Socratic Method

The aims of the Socratic method as given by Will S. Monroe could be summarised as follow:

- Socratic method was to induce the student to self-understanding and reflection,
- To develop the reason that is in him, to provoke thought (i.e. critical or reflective thinking) in the learner.
- To bring the mind of the student into a fit state for further instruction.
- It aims to show the learner that there are latent possibilities in many things which seem to him very simple.
- It points out that in the beginning of instruction, it is wise to remove misconceptions and clear away errors.

Socrates proved his concept in *Meno* by experimenting witha slave boy who without prior education solved a geometry problem. Socrates established his point that by systematically questioning the mind, one can recollect ideas that are built in the 'ideal world'. The Socratic method assumes that it is better to lead students to conclusions than to force conclusions on them. This simply means that teaching should be a process of drawing out rather than a process of pouring in.

Steps of the Socratic Method

Norman is of the view that the form and usage of Socratic method had been developed by Plato. Throughout Plato's Socratic dialogues, Socrates confronts interlocutors and reveals to them the faulty assumption underlying their preconceptions through vigorous inquiry.He further broke down the Socratic method into four main steps;elicit, clarify, test and decide. To apply the method, learners will either first embark on an inquiry, or confronted by a proposition contradictory to their preconceptions. Given that learners bring in their preconceptions as they interprete new information, questions are asked to elicit their preconceptions. As learners become aware of their preconceptions, clarifying questions canbe asked in order to reveal to learners what their preconceptions entail. After fully eliciting and clarifying learners' preconceptions, learners are expected to construct hypotheses or propositions based on their preconceptions. These hypotheses or propositions will then be tested by further fact check, critical questions, counter-arguments, counter-examples, fallacy-check, or check for contradictions, etc. Based on critical evaluation of the hypotheses, learners will then re-assess their opinions and decide whether to accept or reject their hypotheses, propositions, as well as preconceptions.

[13]Babarinde, S.A. Op. cit.
[14]Kenneth J. Maxwell. 2015. Op. cit.

To demonstrate the use of the method, an exploration of the conversation in *Meno* between the slave boy and Socrates is considered: Socrates draws a square on the ground and divides it into four equal sections. Asking questions from the slave boy without teaching him anything directly, Socrates establishes that one side of a square four feet in area is two feet long. He then asks the slave to determine the length of the side of a square that is double the area (i.e. eight feet in area). The slave boy erroneously states that a side would be four feet; which is double the length of the original square (however, it is obvious that a four feet side, of course, would yield a sixteen-feet square in area). Socrates proceeds still through questions, to show the slave boy his mistake. The slave, realising that the length he is referring to must be somewhere between two feet (the length of the original square) and four feet (his wrong answer), now answers that three feet must be the correct length (which is also wrong, because the area would give a nine feet square). Socrates points out errors in the boy's reply again and reveals that he (the slave boy) is presently in a state of *aporia*in which he is in a state of confusion in establishing the correct answer. This state, Socrates argues, is better than the slave's original (false) claim to know the answer. Referring to Meno's earlier complaint about being 'numbed' by Socrates' questions, Socrates states that since the slave does not know the correct answer, he would be glad to find out.

Socrates went further in the discourse; to the original square of four feet in area, Socrates adds three more, thus creating a square four feet on each side (and so four times the area of the original square). Drawing diagonal lines that link the centre of this larger square, he asks the slave boy if these diagonals cut each of the original-sized squares in half. They do, of course, though it's worth pointing out that Socrates has strayed somewhat here from his policy of not teaching anything but only asking the slave's opinion. Socrates' geometrical point here is that the diagonal of a square is the length the slave boy has been seeking; it can be used as the base for a square double the area of the original. The slave is made to realise this only through answering Socrates' questions, not through any direct teaching. Socrates presents this process to Meno as strong evidence that learning is a recollection: if the slave wasn't being taught, how did he come to know the relationship between the diagonal of a square and a square double the area? The knowledge must already have been in him, waiting to be "stirred up like a dream" by Socrates' questions.

The illustration drawn from Socrates made use of a four-step approach to teaching the slave boy how to do geometry. Socrates examined the slave boy in order to prove that the slave did not have prior knowledge of the material he was being taught or to determine the level of the learner's experience. This level is what Norman referred to as 'eliciting'. Socrates' thought process in proving the slave wrong was to prove that the initial answers the slave provided were coming from his soul as false beliefs (clarify) because he had not yet learned how to differentiate between the beliefs he should reject (test) and those that he should preserve by the end of the lesson (decide) thus, the slave boy was able to perform geometry. This proves that if he continued to resolve the conflicts between what he first thought and what is in fact true, he will eventually have knowledge. This is Socrates' solution to the problem of how we can try to find out the nature of something we do not yet know. Socrates then advised the slave boy to always confidently seek out and recollect what he does not know at present that is, what he couldn't recollect. The solution of Socrates to creating a creative learner lies primarily on the teacher who must as a matter of emphasis, be a rational thinker, because it is the good and well planned question that will lead the learners to use their imagination, creativity, to produce something new and solve problems.

[16]Will, S.M. *Art of Questioning.* The Journal of Education. 1905. Vol. 61, No. 8 (1518), pp. 201-202 Published by: Trustees of Boston University Stable URL: http://www.jstor.org/stable/42803310 Accessed: 15-07-2016 10:30 UTC.

[17]Norman, Andy. *The Socratic Method as an Approach to Learning and Its Benefits.* Dietrich College Honors Theses Dietrich College of Humanities and Social Sciences:http://repository.cmu.edu/hsshonors. 2011.

The Role of a Teacher in Socratic Method

A teacher has been defined as a professional who imparts skills, knowledge, information, attitude, etc into the learners. This definition may not sufficebased on the discuss so far. Many authors havestated the role of a teacher as one who teaches, imparts or passes information to learners. Plato's definition of education as turning the eye of the soul from darkness to light (which means leading a person from dark cave of ignorance into light of knowledge) suggests the role of a teacher as one who directs the activities of learning and not one who sage on the stage. Teachers are to adapt to the role of facilitators and not 'teacher' as seen in the above definition. Teachers' duty in the Socratic method is to engage students meaningfully by asking questions that generate novel ideas. Ideally, answers to questions are not stopping points for thoughts instead, they should be the beginning or commencement to further discussions. The teacher in the Socratic method implements each subject by challenging students to examine both contemporary and historical issues. In modelling the practice of Socrates, the teacher questions students in a manner that requires them to consider how they rationalise and respond to topics.

Copeland explains that it is important for teachers to clarify that these questions are not intended to create an environment of judgment; rather, it is to help students examine their attitudes, beliefs, knowledge and logic. The goal of the Socratic method therefore is to help students to process information and engage in deeper understanding of topics. Most importantly, Socratic teaching engages students in dialogue and discussion that is collaborative and open-minded as opposed to debate, which is often competitive and individualised.

Socratic questioning is a highly disciplined process: the Socratic teacher must therefore act as the logical equivalent of the inner critical voice which the mind develops when it builds critical thinking abilities. The contributions from the members of the class are like several thoughts in the mind. All of the thoughts must be dealt with and they must be dealt with carefully and fairly. By following up all answers with further questions, and by selecting questions which advance the discussion, the Socratic teacher forces the class to think in a disciplined, intellectually, responsible manner, while yet continually aiding the students by posing facilitating questions. A Socratic teacher according to Elder and Paul should;

(a) keep the discussion focused
(b) keep the discussion intellectually responsible
(c) stimulate the discussion with probing questions
(d) periodically summarise what has and what has not been dealt with and/or resolved
(e) draw as many students as possible into the discussion.

Similarly, Rob Reich sets conversational guidelines for teachers to follow in using the Socratic method:

- Learn student names and have the students learn each other's names. Explain that participation requires listening and active engagement and that it is not enough to just contribute a single comment in class and then be silent for the rest of the day. Teacher should emphasise that students should focus their comments on concepts or principles, not first person narratives.

- Ask questions and be comfortable with silence. Silence is productive. Be willing to wait for students to respond. There is no need to fill a conversational void; silence creates a kind of helpful tension. Use the "ten-second wait" rule before you attempt to re-phrase your questions.

- Find ways to produce "productive discomfort." Cold-calling works, but temper it with small group work so that students can talk to their neighbour. Above all, use follow-up questions, get students to account for themselves, not just to regurgitate readings and lectures.

[18]Benjamin Jowett. *Meno*, Plato. 1999. [Etext #1643] pg 23-33. see alsohttp://www.socraticmethod.net/essays/meno_geometry/meno_geometry.html.

- Always be opened to learning something new. Don't be a sage on the stage, or a guide on the side. Be willing to say, "I don't know the answer to that question."
- Welcome the "crazy idea" that offers a new perspective on the topic, but discourage those ideas which are not serious.
- Brevity and short interventions from the teacher are most welcome. No speeches or long lectures.
- Discourage obsequious deference to authority and status. Break this down if at all possible.
- Find a classroom space that encourages interaction. Seats bolted to the floor put one at an immediate disadvantage.
- Finally, don't be scared of size! All of this is possible even in large classes. The Socratic Method is possible in a class as large as 70. Just use more small groups.

Conclusion and Recommendation

Teaching is so important that it is not enough to be an orator. The poverty of invention and ideas in Nigeria demands that we train generation of teachers who will become great facilitators of knowledge. We need teachers who are capable of lightening the curiosity in the hearts and minds of learners. Uninspired teaching is a killer of learner's idea or creativity. Principally, teaching that is anchored on the remuneration only focuses on passing information and not creating a Socratic man, the only aim of such teaching is just dogmatic or rote learning which are done to pass examinations. Nigeria's education system has been left vulnerable to the cankerworm of having the larger population growing up less inspired, less informed, and less thoughtful in their living. The Nigerian education system needs teachers capable of leading students to meaningful learning that embraces the critical reasoning which exposes the learner to the world. Socratic method offers teachers the opportunity by providing a way to exercise the best in them (teacher).

This paper has endeavoured to establish the imperatives of Socratic method of teaching in leading the learner to creativity; it has also been able to justify the fact that teaching is more than feeding the learner with information and measuring how well they understand the information. The act of asking questions and seeking answers is fundamental to all human creativity; man can be made creative if the Nigerian teacher can adopt the Socratic teaching method. The paper hereby encourages all practicing teachers to embrace and practice the Socratic method in their formative and summative teaching because the method has the power to ignite the inbuilt capacity in the learner and also help learner in self discovery which will lead to creativity and subsequently, sustainable development in the land.

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