

Education as a Social Science: Philosophical issues in educational research as a study on human persons

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Abstract

In spite of many efforts put into education, many social problems still remain unresolved. Some scholars blame this on the inability of educational researches to predict exactly on social problems and offer precise solutions. To be effective, such scholars hold that education should adopt the scientific model of research. This study was aimed at the study of the philosophical issues surrounding enhancing capacity for problem solving in education through adoption of scientific model without reference to its peculiarity as a discipline that deals with human persons. Philosophical analytical approach was adopted for this study. Studies reviewed indicated that scientific study procedure lacks the claimed capacity for precision and prediction. Therefore it was concluded that scientific research model may not be the sole solution to the problem of inefficiency in education process. Educational research should be integral and inclusive to address the many faces of human and environmental problems. It was concluded that researches in education may not always follow the procedures of the sciences and social sciences because of the peculiar nature of education. It was recommended, among others, that educational researchers should avoid forcing quantitative and experimental approaches to research on education when qualitative approach is needed.

Keywords: education, research, human, person, philosophy,

Introduction

Over the years, education is seen as a means of human development (Obot, 2015). With this role, there is the common expectation that education should be problem solving in outcome (Dewey, 1916, 1938). Presently, some apparent conditions are raising doubts on the capacity of education in Nigeria to effectively play its role in the society (Obot, Essien & Akpan, 2014). One can still observe the existence of many social challenges that education was expected to address which appears unattended to. These include social vices and anti-social development tendencies such as drug abuse, kidnapping, fraud, armed robbery, election rigging, unskilled young people and low level of critical and creative cognitive and technological abilities in our society among others (Udoh, 2010; Raji & Wahab, 2016). One of the reasons advanced for this poor performance of education is the inability of educational researches to provide effective theoretical backing to its classroom practices (Pring, 2015).

According to Pring (2015), as at 1970 in America, there were so many public finances of universities based on common assumptions of intensive involvements in teaching and research. He observes that financial supports for research in education have since gone down. Pring (2015) cites some of the reasons given for this decline of reliability on educational researches to include inefficiency in problem solving in areas such as:

1. The believe that educational researches are unable to provide answers to policy questions government raise. Based on these, educational researches are irresponsible to government processes of formulating new policies.
2. Research results in education are not useful even to teachers in actual professional practices.
3. Educational research often fails to provide coherent and reliable basis for understanding of educational theories and practices.
4. Showing apparent political or ideological biases which do not correspond to practical needs (Pring, 2015).

Prings (2015) asserts that there are people who allege that in spite of huge amount spent on educational researches and the many number of people who claim to be researchers in education, there is no equivalent cumulative body of knowledge that can proof that educational researches are impactful. For such people, unlike other areas of specialization where practices are based on research results, classroom practices seem not to be positively impacted upon by their research-base as it should be in a professional field. According to Pring (2015) again, for educational research to be effective, it should generate cumulative body of knowledge or theories which can be consistently and coherently applied in practical processes. This is also the position of Akpan, Essien and Obot (2008). For them, many expect practices in the teaching profession to borrow a lift from other professions such as medicine which has cumulative bodies of theories and policies that allow for consistent, coherent and precise application in practical conditions. To be this effective, many scholars in this camp are of the opinion that educational researches must adopt scientific and quantitative approaches in its processes. Some are of the opinion then that if its researches can follow the procedure of experimental sciences which like in the case of such sciences will make possible that its practices are directly derived from its theories, education will become as successful as they are (Pring, 2015).

On the other hand, others still think that education is a social science that deals with human beings and so cannot be like other merely quantitative and physical sciences. They believe that education though a social science deals more directly with human subjects with peculiar nature and characteristics different from the objects in purely physical sciences (Kaplan, 1998; Mack, 2019).

With these disparities in approaches to finding solutions to problems of effectiveness of education in service delivery, some philosophical issues ensue. Philosophy is a

discipline that uses its tools on available facts or reasonable speculations (assumptions) to analyze situations and synthesize findings as possible solutions to the problems at hand. Consequently, philosophical issues are challenges that call for clarification of seemingly unclear problems through the use of available facts or reasonable speculations (assumptions), rational analytical and synthetic approaches for possible solutions (Obot, 2015). What philosophical issues are there in the concept of educational research as an aspect of social science activities? Are there some limitations within scientific approaches to problem solving which can make it less effective than those who advocate its influence in educational researches may think? Do educational researches really need the same precision that is required in other disciplines such as medicine for its practical effectiveness?

Educational researches as social science activities on human subjects

Learning necessarily involves cognitive and affective activities that are peculiar to the human person. Even human creativities are expected to be followed with critical thinking (Bailey, 2014). Such human activities include perception, interpretation of experiences, understanding and value judgments. These are activities that may not be accurately predicted or measured as what experimental researches seek to do. Consequently, it is difficult for educational researches that deal with the human behaviour to possibly draw exact and predictable general rules from its researches for practical applications as in sciences such as medicine or other social sciences because of the complex nature of the subject involved in such researches (Harris, 1979; Pring, 2015).

The above views on educational research are backed up by the ancient philosophy of idealism. Idealism is a school of philosophy which dates as far back as the philosophies of Socrates and Plato (1975). One of the major positions of the idealist is that there are realities that have no independent existence from the human mind which also are epistemologically accessible to learners as ideas (Akpan, Essien & Obot, 2008). For them, such realities are grasped by learners through a process that is purely rational involving interpretation of experiences and information, logical sequencing, establishing relationship between information and experiences with understanding of the content of such cognitive processes. In these processes of knowledge building, it involves hermeneutical and cognitive interpenetrating experiences where both the knower and the known are inseparable (Benton, 1977; Harris, 1979; Momanu, 2012). One can say then that human learning peculiarly involves cognitive construction of ideas which goes beyond the capacity of purely scientific and quantitative methods or their research tools (Hamlyn, 1987). Based on this, even though education may be said to be a social science as a discipline that deals with man in the society, it cannot be correctly said to be exactly like other social sciences because of the peculiar nature of man who is at the center of education.

Philosophical issues in educational research models

For some who subscribe to scientific research model, truths are considered from the positivists' perspectives. Truths are considered from what are observable, factual, measurable, exact, quantitative and verifiable with high potency towards practical applicability. This type of truths, they believe, can only be products of empirical experiences. For them, only researches that can obtain these types of truths are capable of solving human problem even in education (Iwuagwu & Nwagbo, 2016). Thus, they consider further that researches even in education should be understood and conducted with the same procedure used in other scientific disciplines. It is expected to limit itself to empirical problems, possess the ability to formulate practice oriented questions, identify and deal only with factual data and adopt scientific procedure and scientific language in conclusions, to ensure their potency to exactly predict on and solve practical human problems. This they say will be possible through the direct derivation of educational practices from theories formulated from the result of such researches (Pring, 2015). It should have the ability to establish general laws and conditions that will assist in predicting, with exactitude, practical activities of teachers, learners and policymakers in education (Iwagwu & Nwagbo, 2016; Marek & Laubach, 2007).

This approach is backed by the ancient philosophy of realism, experientialism and later pragmatism. For these philosophies, the senses are the main sources of reliable and problem solving knowledge. For example, Aristotle (1984), Mercier (2002), Locke (1693) and Dewey (1938) assert that all learning begins and are anchored on sensual experiences of the learner. This they conclude from their position that really has only physical existence which can be quantitatively and exactly measured with precision. They conclude that only experimental researches that share these principles can acquire objective truth that can lead to practical manipulation of environment since their truths exactly corresponds with reality (Obot, 2015; Enoh, 2014). Their research procedure anchors on principles of experience (Aristotle, 1984; Johnson & Lakoff, 2019), verification (Ayer, 1984), experimentation (Russell, 1961; Dewey, 1916, 1938) and Practical application (Dewey, 1938).

Evaluating the strength of scientific model as a model of educational research

This aspect of the writing will make a critique of scientific method from the perspective of its empiristic attitude to researches. This will be used to ascertain its capacity to make educational researches capable of grasping reality and supplying practical solutions in the teaching and learning processes. Scientific research procedure is a product of positivist approach to researches. For the positivist, the underlying principle of truth, intelligibility and usability are based on experience or observation, verification, experimentation and Practical application. Scientific research is principled on the philosophy that truth of research should be derived from observation or experiences of empirical facts, verification and experimentation for certainty of effectiveness in practical application. Some of the implications of these are the demarcations between empirical and quantitative research characterized as progressive and problem solving in

terms of making practical progress in all fields of knowledge building, and non-empirical and qualitative approach to research characterized as non-progressive and non-problem solving. To critique on the capacity of scientific research model, this study will look at verifiability as a criterion of facts, since it is the principle of determining the areas of concern in scientific researches. It will also look at experience or observation and experimentation as sources of dependable knowledge since they form the primary source of enquiry in scientific researches. This will help us to find out the limits of scientific research model in the face of holistic and multifaceted realities about and around learners. Scientific research model, according to this study, refers to research models that hold that only the positivists' principles of verifiability, measurability, exactitude, observability and capability for accurate predictions in a research process are capable of making researches and their results dependable and progressive.

Verificationism as a criterion of objects of scientific researches

The position that only facts and not thought can dependably give knowledge and truths came into science through Russell (1959) in his book "My philosophical development". For him every study or research has the duty of investigating into the epistemological foundations and justifications of knowledge and truth claims through related scientific procedure that are empirically consistent and logical. Only factual data are valid for dependable studies including researches.

According to Ayer (1984), verificationism as a method holds that the meaning of any sentence is contained in a set of possible observations that can be used as test if the sentence corresponds to reality and is true or false. Verificationism is said to be a philosophy of meaning and truth. It holds that a proposition can be said to be meaningful and potentially capable of subjection to empirical verification for it to be meaningful and potentially capable of practical effects. In one of its original forms, Ayer (1959) states the principle of verifiability thus;

We say that a sentence is factually significant to any given persons, if, and only if, he knows how to verify the propositions it purports to express—that is, if he knows what observation would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false (Ayer, 1959).

It believes that (1) Only physical objects are knowable and observation is the only means of obtaining information about them (2) its procedure of research or study is objective without value or bias (3) valid inference on a large population can be accurately drawn from a sample (4) its conclusions are valid, consistent and therefore its predictions are exact. The major limitations of this view includes

a. The principle of verifiability itself is not verifiable. There are no empirical evidences to support as true or false the claim that research languages or prepositions are true or false only as a result of factual proves or empirical tests. This shows that scientific research model is itself unattainable even by its standard or value from its base on unverifiable principle of verifiability. It is self-defeating since it cannot prove itself even with its principle.

b. Verifiability principle limits reality to only physical and empirical objects which are the objects of experimental sciences. That it claims that only physical objects are real makes the derivative scientific model reductionist in approach to the study of human environment which is an important object of education. Aside from various proves of the existence of non-physical realities in human environment, not all human problems that are the concern of educational research are physical and can be subjected to rigorous experimental studies. This criterion certainly will subject educational researches more to inadequacies in providing answers to educational and human challenges in many ways. Such problems are multifaceted, physical and nonphysical.

By implication, Russell (1959) rejects every qualitative procedure which deals on realities that are non-verifiable as incapable of revealing reality for practical usefulness. If any object of study or research is not real, then there is no way that it can be known or its truth or falsehood can be established with certainty since it cannot be subjected to experimentation. For Russell (1959), truth cannot be obtained from reasoning which is qualitative and non-observable. For him, we can only confirm truth or solutions to our problems when we establish corresponding opposing facts through experimental findings. This way, Russell's (1959) position linked up to verifiability of Ayer (1984). How logical is the theory of verificationism itself?

Observation and experience as means of studying reality in scientific researches

Observational learning or experientialism believes that the only authentic means of unadulterated information acquisition is in observation or experience (Dewey, 1938). In observation, sense impression, sense data, perception as subjective interest and understanding are indistinctively involved. Consequently, many scholars, such as Gillies (1993), see observation and experience as aspects of psychologism based on empiricism. Gillies (1993), in line with the position of Carnap (1966), also convincingly holds observation and experience to be aspects of physicalism.

The major problem that can be identified in any process based on the premises of physicalism, such as observation and experience, is the pretense to make a distinction between the object and the subject of observation or experience, being precise and exact in claims (Gillies, 1993). Observation and experience remain subjective interpretations of physical realities by the subject. By implication, scientific model of research which claims precision and exactitude as the bases of capacity for problem solving is mistaken. In observation and experience, the object and the subject become one, leaving no distinction between human physical and nonphysical, quantitative and qualitative features. The other limitation of observation and sensual experience is that it is functional only in the sphere of physical realities. It is not useful in the study of nonphysical realities since such realities are cognitively accessible only through human reasoning faculties. In the face of human problems that are sometimes nonphysical, observation or experientialism that is based on empirical principles is grossly inadequate for comprehensive research purposes (Obot, 2015).

Experimentalism, prediction and educational research

Experimentalism primarily relates to observation (Carnap, 1966; Russell, 1959). All data must be subjected to observation in experimental processes of research. Popper (1968) offers strong objections to observation which experimentalism relies on as a method of acquiring precise data for prediction of reality and problem solving. Consequently, he concludes that scientific conclusions on which predictions are based cannot be absolute. This too is the position of Richard Gregory in his work the intelligent eye. For him every reality can be represented in more than one way. Physical reality, for him, is always understood in the context of the observer's interpretation of his experiences. Reality understood or interpreted under this condition is insufficient for conclusion in the way sciences may claim its accessibility to objectivity and precision in practical solutions to problems (Craft, 2001; Hoyt, 2002.).

Scientific causal explanation model and educational research

Apart from the above, scientific model of educational research taking from the method of science will rely on cause-effect relationship to relate its practices to theories formulated. In the aspect of identification of variables, research questions and hypotheses, it seeks to establish also the cause-effect relationship between the independent and dependent variables. This is what it does too in gathering of data for its study. It simply gathers data that the researcher considers observably related to what natural event there is to explain (Manicas, 2007).

By objectivity in its findings and conclusions, it means offering explanation on the observable or experiential causes of the effect which was required to be explained; where the effects are the problems of study and the causes are the related practical solutions (Thornton, 2007; Manicas, 2007). Upon mere explanations, scientific researchers claim to have the ability to explain all human problems. In studying or researching in the area of education which involves human activities, the scientific understanding of causes as mere explanations is too narrow to be used for effective understanding of multiple factors in human challenges. Human being and their actions need also to be understood apart from being explained.

Explanation only searches for "how," while understanding very importantly searches for "why." Be it as it were, scientific model of explanation of human activities, from its idea of cause-effect as "how" is insufficient for the understanding of human actions in education which are also based on unobservable and non-quantitative factors that involve "why" (Hempel & Oppenheim, 1948; Thornton, 2007, Manicas, 2007). Although education also needs to know the cause and explanations of human activities in order to offer effective understanding of them, a more sustainable conception which goes beyond the ambience of scientific research principles is also required. Prior to Aristotle, cause was understood merely in the sense of efficient cause which appears to be the case in contemporary scientific interpretation of it. Aristotle (1984) identified four

types of causes: 1) Material 2) Formal 3) Efficient and 4) Final causes. Of these, final cause especially cannot be sufficiently explained through measurement or any other methods of science. Final cause has to do with why a subject performs certain actions. The “why” of an action cannot be understood without a phenomenological study in the context of the subject's action. Such a search for understanding has to take into consideration the personal intention of the subject, the physical and nonphysical context of the action together with the subject's perception and interpretation of these (Vygotsky, 1978). These go beyond the scope and capacity of science, its quantitative methods, procedure and conclusions.

In addition, experimentalism in scientific researches deals with physical facts that are considered relevant to the research by the researcher. The consideration is based not on scientific proofs but on researchers' subjective values. At this point, scientific research no longer remains quantitative. It makes use of qualitative and subjective values of the researcher which it pretends and seeks to deny as being bias, non-objective and incapable of offering useful information (Obot, 2016). With this, scientific research with the use of experimentalism cannot offer in educational researches theories and precise predictions that can exactly be dependable in all human practical challenges. It will always need the support of qualitative procedures of studying human situations.

Popperist falsifiability, scientific conclusions and educational research

Although Popper (1968, 1969) also implied a demarcation between quantitative and qualitative researches in his understanding of science, he understood this in a different way from contemporary advocates of scientific model in educational research. Unlike contemporary science, Popper (1968, 1969) did use demarcation as a distinction between observable quantitative and non-observable qualitative studies to be a demarcation between sense and non-sense, meaningfulness and meaninglessness, precise and non-precise studies, capacity for predictability and incapable of predictability in his work “the logic of scientific discovery (Popper, 1968) and conjunctions and regulations (1969). Popper (1968, 1969) gives a different view on scientific ability in relation to exactitude, precision and predictability. He started by rejecting the principles of verifiability as the basis for meaningfulness. Popper concluded that science should replace its insistence on objectivity, exactitude and precision with falsifiability (Popper, 1968, 1969).

According to Popper (1968, 1969), the principle of falsifiability is that scientific conclusions are not absolute; they are merely most probable. Thus, they are only tenable as long as no other theory has been established to falsify it. For him, scientific theories are merely inductive and based only on discoveries so far made. This does not however guarantee that no contrary discoveries may be made in future. This only leaves scientific conclusions and theories at the level of most probable. For example all ravens are black and everything that goes up must come down. For example, nobody can convincingly

claim to have observed all ravens that have ever been, that are and will be. At the same time, no one has observed all the things that have gone up and will go up so as to predict conclusively that all ravens are black and everything that goes up must come down. These general statements only base their conclusions on ravens and things so far observed. Thus, it can only mean that since all the ravens so far observed are black, most probably all other ravens that will be observed in future will be black. Since all the things so far observed going up do come down, most probably all the things that will go up will come down. Thus, scientific research enters into trouble when it makes a logical jump from inductive research to absolute conclusions and exactitude in ability to predict; when it claims ability to offer through its theories solutions to all practical problems.

Conclusions

From exposition above, it can be concluded that the necessary involvement of the human persons as free and conscious beings with values in education processes and goals makes education not to be exactly like other social sciences such as sociology or anthropology. Yet, education often can make use of data derived from them including those of sciences such as psychology. Thus, its researches also may not need always to follow the procedures of these sciences and social sciences. Though they may be sometimes employed where necessary, education can also use other qualitative means of generating information and knowledge for practical usages. Such information and knowledge can also be useful and complementary even in solving practical problems in education. This is because its practical solutions do not always need to be mechanically derived from physical theories as it may be the case in physical sciences and other social sciences for effectiveness and progress. They can also be derived from good theoretical studies.

Recommendations

1. Researchers in education should always be careful to choose research methods that suit the problem, relevant data and research needs.
2. Educational researchers should avoid forcing quantitative and experimental approaches to research on education when qualitative approach is needed.
3. Education and educational research stakeholders and funders should avoid the narrow approach to conceiving educational challenges in society so as to be over-confident in the scientific models of researches in education matters.

References

- Akpan, O. E., Essien, E. E. & Obot, I. M. (2008). Teachers' level of mastery of subject matter and students' academic achievement in Social Studies in Cross River State, Nigeria. *West African Journal of Educational Research*, 11(1&2), 11-17.
Aristotle (1984). *The complete Works of Aristotle*. Trans. J. Barnes (Ed.). Princeton: Princeton University Press.

- Ayer, A. J. (1959). Logical Positivism. U.S.A.: Free press.
- Ayer, A. J. (1984). The Problems of Knowledge. London: The Chancer Press
- Bailey, R. (2014). The Philosophy of Education: An Introduction. London: Bloomsbury.
- Benton, T. (1977). Philosophical foundations of the three sociologies. London: Routledge and Kegan Paul.
- Craft, A. (2001). An analysis of research and literature on creativity in education: A report prepared for the Qualification and Curriculum Authority. Retrieved October 30, 2019 from http://www.ncaction.org.uk/creativity/creativity_report.pdf
- Carnarp, R. (1966). Philosophical foundations of Physics. U.S.A.: Basic books
- Dewey, J. (1916). Democracy and Education. New York: Macmillan.
- Dewey, J. (1938). Experience and Education. New York: Touchstone & Kappa Delta P.
- Educational Research. Retrieved on October 30, 2019 from https://en.wikipedia.org/wiki/Educational_research.
- Enoh, A. O. (2014). Main currents in Nigerian educational thoughts. Ibadan: Stirling-Hoden
- Gillies, D. (1993). Philosophy of Science in the Twentieth Century. Oxford: Blackwell Pub.
- Hamlyn, D. W. (1987). Human Learning. In R. S. Peters (Ed.), Oxford readings: Philosophy of education. London: Oxford University Press, 178 – 194.
- Harris, K. (1979). Education and knowledge: The structural misinterpretation of reality. London: Routledge & Kegan Paul.
- Hempel, C. G. & Oppenheim, P. (1948). Studies in the Logic of Explanation. Philosophy of Science, xv, 135 - 175.
- Hoyt, D. P. (2002). Some thoughts on selecting IDEA objectives
- Iwuagwu, E. & Nwagbo, C. (2016). Teaching for creativity: Science teachers to the rescue. Journal of Education and Practice, 5(35), 59 – 63.
- Johnson, G. & Lakoff, G. (2019). Philosophy in the Age of cognitive science.
- Kaplan, A. (1998). The conduct of inquiry for behavioural science. Harvard: Harvard university press.
- Locke, J. (1693). Some thoughts concerning education. Oxford: Oxford University Press.
- Mack, L. (2019). The Philosophical underpinning of educational research. Retrieved from http://www.apu.ac.jp/rcaps/uploads/fckeditor/publications/polyglossia/Polyglossia_V19_Lindsay.pdf
- Manicas, P. (2007). A realist philosophy of social science: Explanation and understanding. Cambridge: Cambridge University Press
- Marek, E. & Laubach, T. A. (2007). Bridging the gap between theory and practice: Success story from science education. In M. Gordon & Thomas V. O'Brien (Eds.), Bridging theory and Practice in Education. Rotterdam/Taipei : Sense Publishers.

- Mercier, J. L. (2002). From Socrates to Wittgenstein. India: Asin Trading Corporation.
- Momanu, M. (2012). The pedagogical dimension of indoctrination: criticism of indoctrination and the constructivism in education. *Meta-research in hermeneutics, phenomenology, and practical philosophy*, 4(1), 88-105.
- Obot, I. M., Essien, E. E. & Akpan, I. M. (2014). Teachers' motivational skills as a strategy for enhancing effectiveness in methods of teaching Social Studies Education towards national development in Nigeria. *European Centre for Research Training and Development*, 1(1), 31 - 38.
- Obot, I. M. (2015). Language, culture and the Nigerian national policy on education. *Asian Journal of Educational Research (AJER)*, 3(4), 76 - 82.
- Obot, I. M. (2016). A Philosophy of Value in Education. Ikot Ekpene: Development Universal Consortia.
- Plato (1975). *The Republic*. England: Penguin Books Ltd.
- Popper, K. (1968). *The Logic of Scientific Discovery*. London: Hutchinson.,
- Popper, K. (1969). *Conjectures and refutation*. London: Routledge and Kegan Paul.
- Pring, R. (2015). *Philosophy of educational Research*. London: Bloomsbury Publishing Plc.
- Raji, R. A. & Wahab, E. I. (2016). Trends of political instability in Nigeria: The way Forward. *Nigeria Journal of Social Studies*, XIX(1).
- Russell, B. (1959). *My Philosophical Development*. London: George Allen and Unwin
- Russell, B. (1961). *The Problem of Western Philosophy*. London: George Allen and Unwin.
- Thornton, T. (2007). *Essential Philosophy of Psychiatry*. Oxford: Oxford University Press.
- Udoh, E. N. E. (2010). *A Sociology of education for Africa (A Comparative Study)*. Uyo: Saviour Publishers.
- Vygotsky, V. L. (1978). *Mind in Society, the Development of Higher Psychological Process*. Cambridge: Cambridge University.