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Dewey-Popper-&Holmes the Trinity of a New Scientific Approach in educational Methodology

Introduction:

John Dewey (1859-1952) was a leading proponent of the American school of thought known as: pragmatism: Such theory focused on: experimental logic: rather than what was called Dualistic epistemology. Dewey rejected the old concepts of grasping knowledge in favour of a naturalistic approach, which viewed knowledge as arising from the motive adaptation of the human organism to its environment (John Dewey, Encyclopaedia of philosophy, 1).

Dewey has been influenced by Darwin's theory of natural selection which concentrated on the complex interrelationships between organism & environments. Such concept led Dewey to the idea of persistent & changeable society & world. Dewey's pragmatic theory of truth has conceded red as central to the pragmatic school of thought.

The second element of Dewey's theory of thought is Reflective thinking, he maintained that processes of reflective thinking to the educative process were scientific. (Dewey, 1979 p.145)

In the same line, but from a different intellectual perspective, Karl Popper (1902-1994) had rejected the theory of logic & inductive thinking in favour of deduction and reflective thinking. Popper coined the term critical rationalism accordingly and to describe his philosophy: logic for Popper was part of ancient history and closed societies which developed and nourished by Plato, Marx, Hopes etc.

His view been converted to open society and liberalism, based on human rights (Carr, 2006 p.113). Such vision of a new wide scope , a new life , a new liberal society ,science and education led Popper to the idea of critical dualism and scientific

rationalism in his book 'the open society and its enemies', (Popper, 1966 p.p. 59-73) . The new terms indicate his rejection of classical empiricisms of the observation list - inductivity account of science that had grown out of it. Popper argued strongly against the later holding that scientific theories are abstract in nature, and can be tested only indirectly by reference to their implications. He also held that scientific theory and human knowledge generally is irreducibly conjectural or hypothetical and is generated by the creative imagination in order to solve problems that have arising in specific historic-cultural settings. (Popper's philosophy, Encyclopaedia of philosophy).

Popper's ideology affected his educational theory especially in the field of curriculum planning. Because any discussion of education is political and ideological in other meaning education reflects the broader framework of values in a certain society and reflects the framework of the philosophers and their ideas about the educational system and methodology .Politically, values according to the liberalism for example come closer to the actual political and economic circumstances that prevail within a certain liberal society .Those values contrast of course with the values in a non – liberal world such as totalitarianism.(Carr 2006 p.111)

Popper argued; Instead of encouraging the student to devote himself to his studies for the sake of studying, instead of encouraging in him a real love for his subject and for enquiry, he is encouraged to study for the sake of his personal career – he is led to acquire only such knowledge as is serviceable in getting him over the hurdles which he must clear for the sake of his advancement.. I do not know a better argument for an optimistic view of mankind, no better proof of their indestructible love for truth and decency ...than the fact that this devastating system of education has not utterly ruined them. (Lawton 1986 p.145).

Brian Holmes (1920 -1993) based his methods of problem solving on the reflective thinking of Dewey and the critical dualism of Popper. The problem approach 'has transformed the study of education from the description of traditional systems to an analysis of problems .

Importance of the study

The three opinions of Dewey , Popper and Holmes have important implications for the educationist who wishes to attempt to make method and technique in his research and study more precise (Gezi,1971 p.p 15-16).

The scientific approach has turned away from history and the traditional social sciences . In Holmes' words “ there has been a movement away from searching for historical factors or antecedent causes of contemporary events to an interdisciplinary endeavour to explain and predict behaviour and institutional changes “ (Holmes,1965p.51) , and these “trends reflect not so much a shift of emphasis away from identification and description , but rather an increase of interest in the role they play in explanation which are held to be important in the social sciences” .(Holmes, 1973 p.8).

In other wards . the reflective thinking of Dewey ,the critical dualism of Popper and the problem approach of Holmes are sophisticated in their theoretical assumptions and clear in their purposes . Some brief account of these assumptions and purposes is advisable in this paper .

Reflective thinking

Holmes adopts the idea of reflective thinking offered by John Dewey . According to Dewey where reflective thinking occurs , there is always a sense of confusion. This confusion is reduced by reflective thought which “is an adjustive mechanism “ (Skilbeck, 1970 p.p 26-27).

Thinking and reflective enquiry are thus for Dewey and Holmes not merely processes of description or explanation , but processes by which an indeterminate situation is transformed into a determinate situation. Such wide scope and understanding of the reflective thinking role in education left its fingerprints on the moderate theories of

education , especially concerning reflection in learning , for Mezirow , Brookfield , Habermas & others. In Habermas's words "Reflection in the transformative learning stage enable the learner to take a critical overview and amass further understanding of a professional or social situation or the self or their knowledge , which can lead to emancipation. In other words . it can operate in a Meta – cognitive manner, enabling a view to be taken of the cognitive structure and it's functioning or of the whole self .Reflection in the stage is in accord with the emancipator level of human interests" (Habermas 1971) .Mezerow (1990) provides examples of ways in which reflection of this type can enable transformative learning such as consciousness raising groups and the use of critical incident analysis . (Moon ,2007 P153).

Thus , in Holmes's work , the selection of the problem, the choice of starting point for analyses and especially the clarifications of one problem are interrelated and grounded in theory. Similarly solutions to problems are to be understood in terms of Dewey's ideas . Dewey in his reflective thinking approach concentrated on anticipating the consequences of deferent ways and lines of action. The hypothesis in reflective thinking represents a possible solution. About the consequences Dewey said " by putting the consequences of deferent ways and lines of action before the mind , it enable us to know what we are about when we act" (Skilbeck,1970 P.26) .

Thus, within this frame - work , in the Holmesian problem approach the hypothesis is formulated as the policy designed to solve the problem. Hence the term "the problem – solving approach ".Successful explanation occurs when the logical deduction of consequences from the hypothesis as solution are correctly predicted . Holmes argued about this scientific formula " the problem approach implies that understanding of social educational processes comes form successful prediction rather than as in some epistemologies through the discovery of antecedent causes (Holmes,&Edwards1973 P.53) .

Critical Dualism , induction and refutability

Holmes also draws the concept of 'critical dualism from Karl Popper . In his book 'The open society and its enemies 'Popper took a post, relativity view of science. His methodology asserts and assumes that some regularities operating within a social environment are similar to those found to man's physical surroundings. Such sequences

of social events can be stated in sociological laws. Commenting on the assumption of critical dualism, Holmes has stated “Within any society there are causal relations whose operation can be understood through the establishment of sociological laws.

These relationships are functional and constitute a deterministic element. It is the study of the relevant sociological laws that constitutes the science of education or if preferred the scientific study of education.” (Holmes & Edwards,1973 P.53).

Sociological laws refer to those aspects of man’s social environment which are outside his immediate ability to control , they have the same kind of relationship to the world that natural laws bear to man’s physical environment.

However, according to critical dualism, in any society there can be identified and distinguished two types of law-normative and psychological. The important characteristic of norms and normative laws is that they can be either accepted or changed by man. They are statements about what ought to be. “In practice normative laws find most obvious expression in a legal code or a written constitution like those of the USA, France and previous USSR. They are statements of what ought to be the case’. But innumerable codes of behaviour, taboos, values, beliefs, ideas are more or less formalised by rules of behaviour or commands, and are accepted (or challenged) by individual members of a society in which they are found.” (Holmes& Edwards1973 P.51)

The two kinds of law can be used to understand the operation of social institutions or organisations such as schools, insurance companies, industrial concerns, trade unions and so on.

There is another pattern – the environmental – which does not arise directly from the assumption of critical dualism. This pattern may be constructed from the data relating specifically to the natural resources of a country, e.g. demography. Holmes then offers through these three types of statement, a general social taxonomy for problem analysis, the base of which is critical dualism: “The general and comprehensive classification scheme is based upon the distinction. Popper draws between Normative statements about institutional relationships in society. A third category of data includes information about the natural environment.” (Holmes. 1973 P.52)

In turn, this social taxonomy is based on methodology which rejects induction. Popper argues that the whole method of induction is the wrong way round, answers can be given only to questions, they do not emerge in some mysterious way from the assembly of data.” (Johnson & Wason, 1979 P.258).

Thus, according to Popper, whenever we collect data we do so with an explicit or implicit question in mind about data. Data should be used to refute a falsify theory. Here Popper was influenced in his views by Einstein. Popper wrote “my main idea in 1919 was this. If somebody proposed a scientific theory, he should answer as Einstein did, the question, under what conditions would I admit that my theory is untenable? In other words, what conceivable facts would I accept as refutations, or falsifications of my theory.” (Johnson & Wason, 1979 P.74).

Overall, Holmes adopts and adapts the three themes – critical dualism, a rejection of induction as a proper basis for scientific work, and a stress on the testing of hypotheses for the problem approach. It is equally true of Holmes that generally speaking “ In his hypothetic-deductive view of science there is no place for inductive logic.” (Johnson &Wason,1979 P.258).

Theory of Social Change

Holmes 'theory of social change stresses asynchronous change in society, which is useful in the identification and intellectualisation of problems in comparative studies and in the formulation of hypotheses. In general Holmes argues that “in the light of many theories of social change, problems arise from asynchronous change in society. “ (Holmes,1965 P.74) .

Thus, if all the relevant parts of the social order change at the same time and the same place, then no problem arises. From inconsistencies in the rates of change in a) Institutions, b) Norms, C) General environmental circumstances.

Holmes points out that “Here social change is considered to be the sequence of events initiated by configurations.” (Holmes 1965 P.74)

Change in any one aspect of social life is considered to be a sequence of events initiated by innovation in (any one of) the three social configurations while other aspects of these patterns lag behind. In such situations, social problems may arise because of inconsistencies in the lag between theory and practice, norms and institutions or, institutions and environment. Concretely Holmes argues thus “One institution may have changed more radically than another, which is functionally related to it, or the aims of education (norms) may change before institutions have been revised to achieve the new

aims, or the natural environment may place obstacles in the path of achieving stated goals.” (Holmes , 1965 P.P.74-75).

To such identified and intellectualised problems, hypotheses are policy solutions and may involve identifying both change and relative non-change. Holmes says “for the purpose of analysis it may be assumed that a change (or innovation) occurs in any societal aspect and the task of intellectualisation involves identifying both the change and relevant (or perhaps relative) not change.(Holmes,1978 P.89).

Finally , and according to Holmes’ theory of social change social problems may arise because of lags between elements classified as normative, institutional or environmental.

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Conclusion

The Reflective thinking of Dewey, The Critical rationalism of Popper and The Problem solving of Holmes are scientific approaches for teaching and learning, especially in the field of research and facts discovery and investigation. Knowledge for the three thinkers is not absolute, and is not logic.

According to Popper, knowledge is not absolute and it may be falsified. Things and concepts such as values , traditions ,facts ..exc., might be understood in one way in a cretin society but it have a different perspective in another . Natural, social, cultural and political phenomenon could be handled in different ways according to their situation , visibility, circumstances ,understanding and general system.

In Dewey's thought there are three kinds of experiences, educative, non educative and diseducative . For Experience to be educative a process of reflective thinking is required . according to Holmes deductive theory rather than inductive thinking has to be endorsed to establish a new vision in educational methodology

Hence, the researcher can utilize and use a problem solving approach rather than description and historical in a liberal or in a pragmatic method which have been clarified in Dewey's. Popper's, Holmes' work.