Normative-Explanatory Valences at the Level of the Scientific Theory

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Abstract:

The substantiation of a scientific model marks the acceptance of a specific form of education at a social level implicitly. Thus, the application sphere of the scientific norms within an educational methodology emphasizes a pedagogical opening towards the new problems of the contemporary social reality. In this context, there are significant the interdisciplinary correlations on the basis of which a scientific community promotes and assumes a certain paradigm. Moreover, the psycho-social behaviour of the actors involved in the research activity supposes the taking into consideration of the idea of scientific innovation according to which the cogniscible structures can be valued in the best possible way. Therefore, the understanding on the one hand of the educational reality and on the other hand of the physical one supposes a purely methodological understanding of the scientific theories.

Keywords:

scientific innovation, interdisciplinary applications, scientific education, constructivist theory of science, scientific fact, cultural comprehension.

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1.1 Introduction

The scientific explanations of the different assumed paradigms concentrates certain cognoscible structures through which there are emphasized fundamental components of the educational system itself. These aspects remind of the idea that the evaluation of the physical phenomena and processes depends on the way in which the social praxis is corroborated with the scientific one. In other words, at a social level the functioning of a system generates a whole process of theorization and abstractization of the results obtained after some scientific researches.

One has in mind in this context the fundamental mutations from the world of science and the interdisciplinary applications at their level. From this perspective at the level of the reorganization of the social system and the reconstruction of science implicitly the acceptance of a new paradigm reminds of a specific methodology of approach. Also, the individual and social significances suppose utilitarian aspects which remind of the axiological evaluations of the results obtained. Moreover, the scientific nature of the theories in general illustrates a reality built on the relationship communication-responsibility. In fact, the scientific contents integrated at this level of understanding concretize as long as the process of assuming a new paradigm depends on the cultural comprehension of the educational system promoted at a social level. Therefore, the evaluation of the scientific phenomena and processes depends on the permissiveness that a social system shows at a certain moment.

From a methodological point of view the idea of a constructivist theory of science expresses at the level of an educational reality a special modality of relating between the actors involved in the scientific approach. This activity constitutes a pragmatic operationalization of the main activities which take place within an educational reality. Thus, we consider that a sequential organization of the methodological activity should be made in accordance with a significant construction of the assumed formalism and with levels of morality and moral education (Jeder: 2006, 15-18). We have in mind in this context the fact that the shaping of the scientific competences illustrates explanatory (pragmatic) dimensions at the level of the methodology.

In these conditions the methodological resources involved support a certain form of the social reality in accordance with which in fact one establishes a certain value reference point. Moreover, there are significant at the level of this type of approach epistemic structures through which the values relate to the social norms. That is the reason why, it is useful we consider, to situate the attitude of a scientific theory in the dimension of a cultural comprehension. In this mode, the scientific perspective is founded on axiological principles too through which the methodological analysis concentrates on the socio-cultural significances.
The tendency towards flexibility and continuity of a newly promoted paradigm involves a series of methodological connections on the one hand, on a discursive plan and on the other hand, on a theoretical–applicative plan. Also, the understanding area of these methodological connections reminds of the idea that the validity of the scientific research itself depends on the strategies assumed both by the social actors and the scientific community. All these relate though to the manner in which a theoretical model is perceived in the dimension of the scientific knowledge through the conceptual-theoretical applications. The structural relevance of the architectonics of the formal dimension on the theoretical dimension aims at epistemological problems connected to the way in which there are explained and used the fundamental scientific concepts, the definitions generated with the help of these concepts, the analysed theories (by resemblance and differentiation), the examples and so on.

The scientific legitimacy of a theory emphasizes the necessity of the explanatory models of the physical reality. The dynamics of such an approach constitutes a pragmatic operationalization of the main activities developed at the level of the scientific research. In this mode, the interpersonal communications reflect at the level of the scientific community a (de)constructive image which reminds of the idea of comprehension. Thus, the comprehension put in correlation with the interests which determine in fact its levels (Dilthey, 1998: 103) illustrates the instrumental value itself of the methodological innovation at the level of the scientific research. Therefore, the rational criteria in accordance with which an optimal principle on the acceptance of a scientific theory involves a process of understanding corroborated with that of methodological innovation.

1.2. The scientific research at the level of the inter-trans disciplinary connections

The evaluation of a scientific theory is possible as long as the assumed methodological context depends on the values which relate to some understanding of the cognoscible structures from the social perspective. In this mode, the physical reality can be explained from the perspective of the idea of reorganizing the inter-trans disciplinary dimensions. This approach resides in the fact that a certain scientific community involved in such a process subordinates to a methodological conventionalism of a pragmatic nature. Thus, the scientific perspective that a new paradigm assumes structures from an axiological point of view the formative resources. Moreover, this approach manner generates some understanding in terms of an epistemological nature both of the informational resources and the cognoscible structures which belong to the physical reality. Therefore, the explanatory dimension of the scientific theory emphasizes a
methodological approach whose complexity degree results from inter-transdisciplinary connections.

Some coherence concerning the scientific innovation must be regarded from the perspective of the specialty language. In other words, a pertinent learning process supposes a pragmatic attitude at the level of discursiveness. Also, such an attitude emphasizes a legitimate dimension of the scientific theory. A social analysis from an epistemological perspective justifies the idea that the scientific theory has a hypothetical character and this fact can only mean that that certain theory does not situate in the dimension of the scientific truth.

In these conditions, the eligibility criteria in the scientific approach express the fact that the truth has a peculiar character. Moreover, the hypothetical character of the scientific theories emphasizes the relativist aspect of the truthfulness of the cognoscible structures. This situation is possible despite the fact that the scientific analysis takes place in the name of a well-intentioned realism and in this sense, it is well known the dispute from the science philosophy between realism and relativism. However, the certainty which results from the hypothetical nature of the scientific theory results exactly from the fact that the hypothetical judgment ensures a more correct and more complete expression. (Posescu, 2003: 51). Thus, as a dynamic structure the assumed research activity acquires through the hypothetical judgment itself a certainty which gives it in fact the scientific value.

In this mode, the transfer of knowledge concretizes within a model of scientific reasoning. A typology specific to the scientific theory reminds of an epistemological analysis of the new assumed model. It has to do with the acceptance in this approach of a new form of reevaluation of the scientific dimension. Of course, such a perspective can be explained through the fact that the objective reality is explained in accordance with certain socio-educational policies. Also, we consider that the theoretical and practical importance of the scientific approach depends on the cognitive-affective significances resulted from the scientific researches. Thus, the scientific interpretations result exactly from the theoretical-applicative connections obvious within the new paradigm.

The role of the dynamics of thinking is that of transmitting interpretations referring to what is known under the name of reality. Thus, as long as one follows the analysis and description of this reality the realism-relativism rapport becomes more than relevant in a scientific approach. In other words, the reality no matter its form when decrypted it expresses the belonging to a specific linguistic structure that is what in science one can call as "possible world". Moreover, such an approach is considered to prove its pragmatism within a well explained level of reality meaning that at the level of the argumentation strategies the activity of understanding represents a means through which the obtained results can be evaluated both from an objective and subjective point of view. Therefore, to reevaluate and (de)construct the reality of
a contemporary world supposes approaching the process of explaining from the perspective of the argumentative discursiveness capable to transmit the social (scientific) community the validity of a certain state of fact.

In the field of the scientific research the interdisciplinary connection at the conceptual-theoretical level is obvious. In other words, a series of theoretical-abstract analyses find a large applicability in different scientific fields. An example from this perspective is that of the logical-mathematical formalisms applied in economy. Of course, without exaggerating concerning the use of such an approach type we mention that through such procedures of scientific theory one can explain and explicate in a certain field of research resorting to discursiveness and logical formalism.

A significant construction of the scientific norms concretizes on a communication projected according to the initiated theoretical approach. Thus, the cognitive experience is done in accordance with the making of the scientific explanations meant to legitimize in a certain way the suppositions which have to do with a constructivist theory of science. In this mode, the linguistic structures relate to methodologies specific to the instructive-educative activities.

The dimension of reality that a scientific theory emphasizes implies an adequate understanding of the cognitive structures. Such an approach validates the social context within which the instrumental value of the methodological strategy represents a relevant aspect in the scientific approach. The finalities of this activity suppose along the application of the pragmatic strategies the taking into consideration of a logical-linguistic formalism concerning the organization of the initiated and existing researches. Also, there are significant the possible meaningful correlations between the scientific competences and the modalities of applying the research strategies. In this way, the methodological innovation is encouraged and the attitude of the scientific community acquires a qualitative character.

The methodological innovation meant in an interdisciplinary conceptual application consists in assuming a specific formalization from a scientific point of view. Such an attitude can be found at John Neville Keynes (1883-1946) in the paper *Studies and exercises in Formal Logic* (1884), where he analyses and develops the logical formalisms from a conceptual perspective that he will later apply in the field of the economic methodology (Keynes, 1906: 140). Also, analyzing the idea of logical formalism and implicitly the mode in which it can be found among concrete applications in economy, John Neville Keynes will also involve in what will be known as *Methodenstreit* ("battle of methods"), between the Austrian School of Economics (led by Carl Menger) who supported a deductive approach and the German Historical School of Economics (led by Gustav Schmoller), who supported a deductive approach which supports the role of the induction at a scientific level.
Preoccupied with the logical nature of concepts and the way in which they can be found within an economic methodology John Neville Keynes mentions in his paper *The Scope and Method of Political Economy* (1891) the following: "It will on the contrary, be strewn, that, according to the special department or aspect of the science under investigation, the appropriate method may be either abstract or realistic, deductive or inductive, mathematical or statistical, hypothetical or historical" (Keynes, 1999: 2-4). It is obvious the approach that Keynes assumes which synthesizes in a syncretic vision these perspectives practically unifying them in an explicit model mentioning that through this one can understand the modality through which certain economic principles function. The conclusion that John Neville Keynes draws is that through logies one can support the idea of the functioning of the economic system. Through a coherent, logical attitude the economic theory can be organized and systematized at an optimum level of functioning on the basis of an interdisciplinary understanding. In fact, the appearance of interdisciplines and transdisciplines generates at the level of the scientific explanation the idea of a constructivist theory of science. Such an idea is more than obvious in this context of analyzing the scientific theory. In these conditions, if the reality is not built through sciences then the existence of the scientific statements does not legitimize in an absolute way, a state of fact of which one supposes that preexists any scientific research. In other words, the truthfulness or the falseness regarding a certain scientific theory depends on the way in which the reality is explained. This situation does not ensure however the validity of the scientific fact and implicitly of the reality. A scientific statement keeps its truthfulness degree until it is denied. This does not mean though that it cannot be valid in another system of propositions. The cognitive meanings of the educational reality emphasize socio-economic aspects of the modalities of understanding the assumed new paradigm. It is obvious the fact that the pragmatic evaluation of the scientific theories supposes a state of fact expressed in both epistemological and axiological terms. Thus, the organization of the research competences within a values system represents a fundamental aspect in the scientific approach. Moreover, the practice of the scientific activity reflects an epistemological perspective necessary in fact in the process of supporting the performance in general. The distinction between formal-analytical truths and the material-analytical ones can be found in the ideas referring to the numerical symbols, ideas promoted in fact by some representatives of the School from Erlangen. On the one hand, it has to do with taking into consideration the abstractization method and on the other hand a reiteration of the Kantian interpretation on mathematics according to which mathematics is formed of a priori synthetic statements whose truth finds its basis in our own activity. In these conditions the practical relevance of the arguments brought by science is given by the mode in which the conceptual apparatus is understood and used.
Moreover, we consider that a special attention must be allocated to the logical-mathematical formalism used in the process of explaining the reality itself.

1.3 Scientific interpretations and educational reality

The existence of some universally applicable features which justify the competence as well as the autonomy of the socio-educational actors depending on a certain valuable standard expresses social opportunities meant to offer pertinent explanations for the scientific research. Consequently, the social praxis from the perspective of purely scientific analysis illustrates the necessity of an argumentative pattern structured on an assembly of logic, linguistic and rhetorical operations (Sălăvăstru, 1993: 167). Thereby, we consider an approach of the cognoscible structures from the perspective of the theory regarding the scientific knowledge. Moreover, we consider that the scientific explanations offer credibility to the suppositions of the argumentative epistemology. Therefore, the social reality is reported to the educational reality which, in its turn, supposes an analysis of some elements that rely more on the scientific dimension of the theoretical and practical approach.

In these conditions the scientific interpretations of the educational reality reflect an explanatory confirmation regarding the functioning of the assumed aims in this approach. Exactly in this approach a specification is needed, namely that at the moment of analysing the scientific there results the difference between interpretation and explanation which has to be done (Ricoeur, 1994: 45). This expresses an interdependent relation at the level of the social structure. We consider that in this context it is possible the idea of creating a general profile from the perspective of those alternative representations regarding the nature of the scientific agreement. (Flonta, 1994: 97). Otherwise, the scientific rationality highlights the existence at the level of the new paradigm of some methodological principles on which the research is realised. Consequently, the scientific conventionalism has an important role in the re-assessment process of the research methods regarding the physical reality.

The scientific interpretations send to multiple forms of meanings and significances whose cognitive dimension highlights a specific typology of the training activities. This way, the existent values at an epistemological level of the scientific theory generate a scientific logic by which the used strategies in an educational paradigm do nothing but offer a socio-cultural perspective having a pragmatic nature. Otherwise, the multiple forms of the research are reported to a physical reality as well as to an educational reality.

The development of the initiated activities at the level of the scientific community supposes an entire approach of significance where the responsibility and the foundation of the scientific theory must constitute priorities in the research approach. Furthermore, we consider that the substantiation of the
decisions at the level of the research process must be done according to the communicative relations from the scientific community, but also a selective process of information. Otherwise, the unity of the scientific knowledge glimpses on a social perspective as well as a pragmatic one through which the educational reality of a system is surprised. Moreover, the pragmatic nature of the educational reality reflects the expression of the principles' validity regarding the characteristics of the scientific research.

The organisation in a structural way of the research approach illustrates potential systems of values through which the development of the epistemic structures approves the pragmatic nature of the educational reality itself. Subsequently, considered as a social phenomenon, the educational reality represents a specific form of communication subjected to an entire process of evolution. In this situation we can talk about the fact that the social reality is in permanent relation with the reality of the objective world. The dynamic of the educational reality expresses in fact methodological approaches of an instructive process.

However, this kind of assumption reflects explanatory dimensions which are characterised by a certain methodological constancy. In this respect, the new assumed paradigm at a social level supposes a pedagogical approach through which the scientific theory is explained by reference to an epistemological approach. Otherwise, we can admit that through the new scientific paradigm there are possible inter- and transdisciplinary conceptual – methodological connections at the level of the physical and social reality.

In these conditions, first of all we consider that the scientific perspective is necessary at the level of the educational activities and secondly, that the dimension of such an approach relieves, at the educational level the importance of the unique element when a new paradigm is assumed. The necessity of a new educational paradigm at a social level reveals the fact that the problem of the knowledge recognition supposes an accordance report between society and education. Consequently, the scientific perspective is necessary at the level of the educational activities and the specific meanings of the social forms highlight the pragmatic approaches. Therefore, this methodological authentication completely finds its clarifications as long as the assessment of the research process supposes a certain relation with the explanations that result after the assuming of the scientific theory.

The approach of the scientific theory from the perspective of the methodological strategies sends to a new theoretical construction where the accent is put on the idea of performance. It is about a situation where the inter and transdisciplinary connections generate a new scientific paradigm. Subsequently, the scientific process highlights a new type of epistemology which represents in fact a re-assessment of the informative content from the perspective of the scientific knowledge. Concluding, we can admit that the
socio-educational meanings transpose on a scientific plan intricate ideas through which the communication means send to codes specific to interpersonal relations.

Such a problem highlights explanatory patterns where the research approach acquires a qualitative character capable of sustaining the idea of social responsibility. The supposition that we have in mind in this context is that the acquired cognitive experience supposes a certain reconsideration of the values system. Furthermore, the idea that we plan to validate is that the professionalism of the social actors in an educational environment considerably depends on their attitudes but also on the methodological promoted and assumed strategies. Consequently, inside the explanatory dimension there is an epistemological perspective whose construction is based on assessment of professional competences and axiological structures (Ponea; Sandu, 2010).

However we specify that in an explanatory dimension a pertinent understanding of the assumed strategies at the level of the scientific research process is necessary. In this context, the estimation of a global conceptual pattern depends on the complexity of its implementation by a certain scientific community. Such a perspective can be explained by the fact that the interaction of the social actors depends specially on the liability degree that they show off. In fact, in this case we can talk about the attitude of the scientific community in a social reality. Therefore, the results obtained after some scientific analyses must be presented with an accessible language in a conceptual and methodological context, full of rigor and clarity. Otherwise, the realistic and relativist interpretations from the science philosophy send to a scientific analysis of the language. Theoretically speaking, these aspects relate to the idea of the identity regarding the scientific knowledge. Consequently, another idea results and that is the scientific re-assessment. Thus, the human reason in the process of understanding the reality reveals specific communicational forms through which the perspective on knowledge fits the pattern that goes from simplicity to complexity and from complexity to simplicity. However, the possibilities through which the knowledge in general can be (re)constructed and / or (de)constructed send to different conclusions. This fact reduces in a definite way the certainty of a scientific fact exactly from the aspiration that the research activity is as accurate as possible. Therefore, a piece of knowledge based on experience is capable of offering a confirmation of the newly obtained scientific results.

Subsequently, the social functions are scientifically validated in the context in which the knowledge process implies pertinent understanding of the theories from an epistemic perspective.

The quality of a scientific fact sends implicitly to the manner in which it involves an approach of a scientific research at a social level. Therefore, a research of the social identity as well as of the scientific knowledge identity,
from the perspective of the economic, social and educational contexts reveals certain explanations that, in a pyramidal structure of knowledge go from a horizontal approach to one that develops vertically. In fact we can talk about a process of passing from an interdisciplinary comprehension to a transdisciplinary one. Consequently we consider that a new perspective of the physical reality is offered, a perspective in which an important place is occupied by a certain form of rationality open, otherwise to the possible. Moreover, being complementary to the interdisciplinary approach, the transdisciplinary approach illustrates a transhistorical and transcultural horizon.

Conclusions

The value universe represents an educational dimension where the consensual methodologies must be found. Thus, the scientific conventionalism relates to peculiarities that a certain social system has. It has to do, on the one hand with the taking into consideration of the specific research methods and on the other hand with the modalities of applying them within different levels of organization. In other words, the consensual status of the scientific theories aims at a series of activities of a pragmatic nature developed within the education system.

The finalities of a social activity are validated in accordance with the recognition at an educational level of some conceptual-theoretical structures. We have in mind the fact that the application of the research methods within an instructive-educative approach follows a conceptual-theoretical track well established at the level of the new paradigm of an educational type. In this mode, an educational psychology must have into mind especially the value dimensions of the social reality. In fact, the organization of some competences on a social professional plan can explain the methodology specific to the initiated activities. In these conditions, the social context reflects a substantiation of the information which generates a psycho-pedagogical diagnosis. This situation imposes that at the level of the interpersonal relationships one should promote a series of educational policies through which the quality of the instructive process should be fully justified. Moreover, respecting some performance criteria at the level of these educational policies reminds of the idea of social responsibility. Therefore, the existence of educational logics at the level of the scientific theory expresses normative-explanatory valences which prove their usefulness just through the taking into consideration of some performance criteria according to which the methodology itself becomes concrete.

Regarded from a scientific perspective a theory generates debates full of meanings and significances. Thus, assuming some theories and implicitly the paradigm that it generates one emphasizes different modalities of approaching
the informational content. In fact, the activities initiated at the level of a new paradigm give birth to different social educational policies. In conclusion the making of some methodological correspondences concretizes in accordance with the learning type to which they relate.
References:


