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Method, Social Processes and Relational Dynamics in Educational Contexts

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Abstract – **There has been wide-ranging discussion about the concept of method and it still does not exist a definition that all scholars share; the debate that defines its contents involves both scientific practice and philosophical speculation. The experience that scientists have accumulated so far does not allow to identify a unique methodology that can be applied in various disciplines.**

Then, knowledge can be framed in a dimension of heuristic activity that tends to the progressive construction of the subject. This process develops in social interaction, in the negotiation and construction of meanings by teachers and students, in "representations" that they share by operating in the same regulatory space generated by body, mind and environment.

It is possible to assume, therefore, that the nature of the essential categories of thought will be found in the structure of social relations that, consequently, become crucial to the cognitive development. The latter is fundamentally based on a "functional spiral" that interacts and nourishes itself between "organizational" mental skills and social interactions.

The decisive social regulation that structures our cognitive system is conditioned by the underlying system of rules and representations involved in the communication. The educational relationship, although it is both intentional and asymmetric, is never direct and immediate, but by its nature it is "mediated", namely it results from the teacher-symbolic universes-learner triangulation. Moreover, human communication would be impossible without the sharing of arbitrary and conventional signs.

The openness and willingness towards relationship offer the individual the essential flexibility to deal with the contemporary complexity. Considering the educational relationship as a mediated relationship, one can manage the dimension of individual ego and the world-society in a way that one is for the other limit and stimulus at the same time. In this sense, relationship becomes the open space of the encounter-clash, the possibility to appreciate others' perspectives and defend your own opinions, in order to develop a "structural criticality" as a decisive individual dimension of education.

Keywords – **Learning, Method, Relational Dynamics, Social Processes.**

I. The Problem of Method

The study that aims to make knowledge clear and explicit has been over time structured into two large scientific methods, the deductive and the inductive one. A common feature of both methods is the possibility to apply an empirical check, even though the deductive

method concerns the formal sciences and the inductive one the empirical sciences.

Aristotle is considered the greatest theoretical representative of the deductive method since he built a complex and well-structured model aimed at describing and representing nature. This was nearly the only method used to analyze the knowledge before Galileo Galilei. Aristotle started with the assumption that absolute truth does not need to be verified, then, through a logical reasoning, it generates a series of legitimate and consequential events. Inference is, therefore, a type of reasoning that leads to a knowledge. This method starts from some premises and tends to prove, by means of logic, whether the results are absolute and truthful.

It is not until 1600 that the Aristotelian natural philosophy is subverted, thanks to Galilei's studies about the astronomical revolution and the heliocentric system. In his studies, Galilei overturns the method of investigation of nature collapsing, thus, the whole edifice of knowledge built by Greek philosophers. Galilei opens a new era by applying the inductive method to natural sciences. From that moment on, modernity spreads and the problem of method is faced through its identification as a tool by means of which the subject takes control of the object. This happens because the concept of method is associated with the notion of objectivity and provability excluding, in such a way, the personal interest of the subject. The absolute truth and definitive and comprehensive explanations are in crisis because of the rules imposed by Galilei in the study of natural phenomena, since the doubt is introduced and one is content with partial responses. Consequently, achievements that cannot be discussed lose their reliability and every scientific discovery can be completely obscured by new researches. The two schools of thought are, clearly, irreconcilable. The methodology used by Galilei, Descartes and Newton has been for several centuries a point of reference for scientists but, in recent times, it has been undermined by the reflections of scholars like Alexandre Koyre, Frédérique Fleck, Paul Karl Feyerabend and Thomas Kuhn, which caused a real revolution.

Léo Apostel, supporter of the interdisciplinary research and the reduction of the existing gap between the positive and human sciences, on the occasion of Jean Piaget's eightieth birthday, said that there is always the need of applying a system, even to the system itself (Inhelder B., Garcia R., VONECHE J., 1977, p. 61). This consideration means that our thinking can be more or less coherent (to the context) but it will certainly never be able to build or describe an ontological reality.

The reflections so far exposed relate to the issue of "making of the knowledge", to the relationship between knowledge and reality, and they involve considerations about the effective existence and knowability of it. Investigations on aspects related to the consistency of the representation of a reality will be, in this context, omitted and the attention will be paid to the way in which the subject acquires knowledge.

Jerome Seymour Bruner, in attempting to describe the learning processes through a metaphor, talks about three

dynamics that mainly operate in this process and they are the head (thinking), the heart (emotions) and the social (the narrative) (Bruner J.S., 1991). All kinds of knowledge such as the alphabet, theories, disciplines, concepts possess an educational capability and potential that they can be defined as implants. They are characterized as "cultural technology" and they represent for us the interpretive tools for understanding the world. Obviously, each of these implants has its own peculiarities that are necessary to the activation of the cognitive process by using it as a "mediator between the subject and reality".

The school and the methodology used to acquire knowledge must be included among the "normative artefacts" that allow the acquisition of skills that cooperate in the systematic construction of the representation of reality. The activity linked to the teaching-learning process is not merely a transmission of knowledge resulted from an innatist or empiricist operation but, in light of the foregoing, it must relate to a mental organization of constructivist nature that operates in a sociogenetic and relational dimension (Piaget J., Inhelder B. 1947).

Knowledge is built, then, through "social agents and meanings" that daily interact between them in the learning process. The self-construction is not irrelevant when it comes to deal with the representation of the world (Moscovici S., 2006). Within the teaching process the need to handle the problem of knowledge, that is closely linked to the learning process, arises as a priority.

As we had remembered with Apostel, one should always apply a system even to the system itself and then, consequently, the use of teaching strategies is especially significant when taking into account the mnemonic mechanisms that operate in our brain. The passage that allows to overcome the bottleneck between the subjective and the objective spirit can be found in Hans Georg Gadamer's reflections (1960). He defines the language as an escape route because it allows to overcome the concept of spirit that transcends the subjectivity of the ego. According to Gadamer, even though the language is infinite as the spirit is, it is suitable to our finitude as being finite like every event.

In order to understand Gadamer's perspective, we can refer to his interpretation of the concept of time, namely that the time is not the measured one but the one lived by individuals and cultures. The interpretation, indeed, does not aim to seek objectivity or to objectively establish something true, but it has the intention to reveal the hidden meaning, in the same way as one interprets a text while reading it to others.

According to Karl Bühler (1979), human language is not only used to communicate, but also to describe events in an "objective" rather than pragmatic way; through language it is possible to formulate a theory, but it also allows us to criticize our "theories" and this critical approach has created human science. Karl Popper (1974) considers human language as an invention of the brain and, through a feedback-based mechanism, the language itself builds the brain, creating a virtuous circle. The language changes our representation of the world, its understanding, our consciousness. Aristotle, in his *De interpretatione*, was the first to understand and describe the relationship between word and concept: the referent of a word is determined by the comprehension of the meaning of the concept. Rudolf Carnap and Russell Bertrand's considerations are similar. Obviously, the understanding remains a subjective and relative data since all representations that we know are associated with their references in a contingent and changeable manner while the culture or the world change.

Thus, the nature of the essential categories of thought is to be found in the structure of social relationships that, as a consequence, become crucial for the cognitive development that is fundamentally based on a "functional spiral" that interacts and nourishes itself between "organizational" mental skills and social interactions. These mental structures, which are created through relational learning, can generate new individual competences that enhance themselves with social interactions. These dynamics involve empiric/social/communicative knowledge of both objects and human relationships, given that human relationships are often brokered by objects. The structure of our cognitive system is provided by a social regulation that is influenced by the rules and representations that assist communication.

We are certain of nothing and that part of knowledge we gained is closely linked to empiric and accidental data. Science expresses our anthropocentric way of thinking rather than absolute and necessary truths. John David Barrow (1997) confirms this statement by using a disarming example about astronomy: the study of this discipline has been possible since above our heads there is a wonderful and clear sky full of stars; if our planet was perpetually full of clouds, we would surely not have had the same development of astronomical sciences.

II. Social Processes and Learning

The way we know things but also the knowledge we acquire are the result of different variables; the strictly cognitive one is associated to our "biology", specifically to the individual genetic heritage that makes every living being a single individual, and it is linked to our personal history, our family, our socio-cultural context, the experiences we live and that make a man a "different" subject, although similar to others.

It would be hoped that the institutions dedicated to the formation and growth were increasingly oriented to stimulate the different "cognitive dimensions", in particular those which are behind the development of the cognitive processes of the subject. The intervention since the early years of life can support the cognitive modifiability processes that permit the development of a fundamental mental dynamism useful to face an increasingly complex and multifarious society. Many researches confirm that brain plasticity reaches moments of maximum activity in certain age groups when it comes to developing purely cognitive processes, stimulating new neural connections and acquiring "conceptual contents".

Socialization and the context considerably influence the formation of identity and of cognitive structures. This has been highlighted by studies which have become milestones for those who are involved in education. These studies showed that the efforts to integrate wild boys in the society have always been vain, in fact these guys have all remained psychologically isolated, stuck in a self-referential world and that is why their intellectual growth is similar to a baby's. This marginalization has been caused by an initial living environment characterized by few stimuli and opportunities that did not allow a proper mental and cognitive development. What emerges from this scientific study about wild guys is the inefficacy of socialization efforts, both for the acquisition of a proper language to employ in the new social context, and for relational behaviors.

According to Vygotsky's studies, the neurological potentialities that are not stimulated by an educational process supported by a linguistic learning, have permanently and irreversibly atrophied the cognitive structures each individual owns.

However, what gives a subject the opportunity to become a "person", is to experience normal conditions of socialization. On account of this, the educational activity must undertake a radical process of adaptation to the new needs of the generations that are going to enter our classrooms. This change must be understood as a research and an exploration path of knowledge. If the school manages to be constantly related to the society, the family, the other living and learning environments, it will be able to reflect on the educational interventions to implement. Thus, it will consider itself as a natural context where the learner develops his/her educational potential. The school, unlike other educational agencies, is the environment that supports the development of the student's critical thinking and it represents a reference point for the recovery of subjectivity and individuality. From this perspective, the student becomes the protagonist in the learning process and, therefore, he/she interacts with the multifarious culture acquiring the requested skills, knowledge and aptitudes in a world in which he/she lives and where he/she will find a job.

This analysis shows that the learner is not a container to be filled, an *acting* rather than *acted* subject, actively engaged in the construction of his/her own knowledge. This idea stands ate the base of cultural constructivism.

One of the functions of education is to provide human beings the necessary symbolic systems to go beyond our mental limits. Given that the limits imposed by the languages we use can be overcome through a wider "language awareness", then another function of pedagogy is to cultivate this awareness[...]. One of the main ingredients of a qualifying educational procedure must be the "reflection on the thought".

III. Relational Dynamics in Educational Contexts

The quality of the contemporary educational system is not only encouraged by the technological innovation and the renovation of the disciplinary sector, but also by a constant investment on human resources.

The teaching staff represents a mediator between the society and the new generations and, for this reason, it must offer a deep and networked culture, facilitate the development of a critical awareness and promote wide knowledge and specialized skills.

In contemporary society, the teacher is not only an expert in teaching the discipline, but he/she must invest in himself/herself in order to improve relational competences, power of observation and emotional involvement. Through the openness towards comparison, the teacher stimulates the development of the network of relationships in the class and he/she encourages the mutual respect and the dialogue between peers (Pellai A., Rinaldin V., Tamborini B., 2002).

The educational relationship between teacher and pupil is constructed over time and it is influenced by the socio-cultural context. According to Piero Viotto, "the educator must pay attention to the learner's physical, mental and social conditionings, while the pupil must show some sort of educational willingness to accept the educator's influence and shared discipline" (Viotto P., 2005, p.506). Thus, for the purposes of making the educational relationship efficient and effective, the teacher's intention is not sufficient, but it is necessary to offer the learner the proper conditions to identify the teacher as an "educationally significant figure" (Bellatalla L., Genovesi G., Marescotti E. 2005, p. 61).

The educational relationship expects the educator to plan in advance objectives and teaching methods, while the learner should be trustful towards the teacher and willing to actively cooperate in the learning process.

The educator's authority plays a decisive role in the relationship: his/her recognition does not only depend on his/her cultural and experiential baggage, but on his/her ability to cultivate and organize the relationship itself, taking into account that it is always influenced by sensations, perceptions, affections, emotions and values. As for the first aspect, teacher and student act in a context defined by particular space-time coordinates. This means that the relationship takes place in a specific place, at a certain time, and it primarily involves the subjects' physicality. Moreover, the interaction is influenced by emotionality, namely the wide and undefined range of feelings the educator and the student share during the interaction. Such feelings can be positive, as the affection, the compassion, the acceptance of one another, or negative, such as the refusal and the disinterest. The individual expresses his/her emotions through non-verbal communication that, unlike the verbal one, is decoded with greater immediacy and transparency. Non-verbal messages are not fully managed by the sender, given that he/she is not able to deliberately lie with his/her body. For this reason, the addressee can immediately understand the sender's relational intentions and decide to trust or not his/her social action.

A welcoming class, by combining emotional well-being and learning, facilitates the teaching, the acquisition of new knowledge and the management of disciplinary

knowledge. A significant educational relationship aims at increasing the sense of belonging to a teachers/learners community, by giving value to the resources of all the players involved and by stimulating the unique contribution of each individual.

The class is seen as a communicative environment in which reassuring and productive relationships are realized, and it becomes the privileged place in which the system of values of a changing and complex society is consolidated. John Dewey (1948) considered in this regard the school as an "exercise of democracy" and underlined, in this way, the link between education and democracy.

The importance of this approach is particularly evident when the sense of community is absent, for example, when some students behave in an egocentric way, without respecting others' needs and disseminating a destabilizing mood in the classroom. It is up to the teacher, then, to involve students in the control function and self-regulation. This is the only way to encourage people to be responsible towards themselves and the others, and to cultivate a network of mutual interdependence that allows them to be actively implicated in the relational and educational success. "The teacher [...] works every day in order to help students to explore their talents, to develop their potential, to reach self-fulfillment. He/she communicates in an authentic way, [...] he/she uses his/her discipline as an educational strategy seen as an educational catalyst with a high pedagogical value which contributes to "shape" the students' mind and personality" (Polito M., 2003, p. 19).

Pupils become aware protagonists of their learning path only if their interest for their own growth increases and, therefore, only when they consider the educational plan as a flexible and creative project.

Being aware of individual diversity and resources enriches, in terms of quantity and quality, the occasions for comparison and exchange, and makes the cognitive processes more creative and dynamic.

In conclusion, the learner's educational success and the teacher's satisfaction are generated by a proper management of the relationship, that assures the productivity of the shared and imparted disciplinary contents.

IV. Conclusions

Contemporary pedagogy cannot lose sight of the transdisciplinary dimension of knowledge, and must try to highlight its not merely informative but deeply educational nature. In this way, the environment becomes the place where individuals build reality and meanings that allow them to understand with what personal cost and expectations they should adapt to the system. The background in which the teacher works must be placed in a theoretical epistemological analysis, and here it offers the teacher the opportunity to find the dynamics of teaching, learning, similarities and differences between natural and artificial cognitive systems.

If educational activities take into account all these considerations while programming the teaching plan, they become the engine of a "learning" for life.

This type of knowledge involves then the problem of learning how to converse, not only within a circumscribed environment of known rules on the basis of a "normal speech", but also in a horizon that implies a "creative" integration as an act oriented towards the borders of other "places".

What characterizes human selfhood is the "construction of a conceptual system that organizes a *record* of agentive encounters with the world, a record that is related to the past […] but that is also extrapolated into the future – self with history and with possibility" (Bruner J., 2000, p. 49). The "global knowledge" stands as the antithesis of the "technical specialism" and it is a specific form of learning and education oriented towards the management of postmodern complexity. It is a continue "construction" or "re-construction" of the mind that develops the function of the metacognitive processes, namely a general awareness of thought and an executive control of "cognitive behaviors".

Regarding the learning process, it is necessary to highlight that there is a peculiar cognitive aptitude of the mind of facing situations and problems in a non-formalistic way; the new knowledge and the owned individual mental frames are put in relation by the flexibility of the mind; the interpretation of the message suffers individual distortions due to cultural and contextual factors. As we currently know, the "objective reality" remains unknown but mankind pursue the aim to "explore" it.

The languages of the mind are various and knowing them all allows us to look through a lens that brings us closer to the world of culture and knowledge. The educational relationship can be considered as an open system, characterized by circular and reversible relationships made of deeply transactional and intermediary communication and interpretation processes. Moreover, all communicative acts involve the whole personality of the interacting subjects, they are not a one-directional flow of information going from a sender to an addressee. The construction of the identity of the individual, in fact, occurs through its relationship with the socio-environmental context, and that is why "the educational communication is to be fully considered part of the significant events that influence the formation of the individual psyche" (Pojaghi B., Nicolini B., 2003, p.109).

In this complex society, the educator has the task of identifying educational paths and tools to employ in order to develop his/her own educational intervention.

Although the countless studies and progress, up to today the "objective reality" remains mainly unfathomable and unknowable, and it is up to men to "explore" it.

The man is a traveler who seeks, and knowledge is the object of his search.

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