



The subject of education's comprehensive and complex world

El mundo integral y complejo del sujeto de la educación

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Abstract

The adoption of an ethnographic *method for the comprehensive formation* from the complexity centers its object of analysis in the education, meaningful scenario to interpret and to identify new forms of grasping the educational act, in which pedagogy and teaching approach acknowledged by the educator are fundamental for the rebinding of the academic processes. Understanding from the school that the subject of education is a multidimensional human being, immersed in a plethora of uncertainties, certainties, doubts, hopes, pipe dreams, situations that require compound looks to recognize the connections that boosts the social fabric of knowledge. The investigation method implemented, favors hermeneutic analysis of the processes that take part in the comprehensive formation and takes on the understanding and interpretation in the context of the school, seeking to delve into the symbolism and imageries of the community during the educational act. For this purpose, the appropriation of an ethnographic *method of research is a complex process for*

the transformation. it is an emerging methodological pathway that enables to identify realities, to progress towards comprehensive processes, to validate perceptions and rethinking about comprehensive formation and to generate attitudes of transformation in the teaching community and the students alike. A comprehensive teaching practice from the complexity nurtures understanding and valuing the student in his human being condition, grants recognition in the classroom, necessary for a social context that demands inclusion, dialogue and profound ecological and human sensitivity.

Keywords: Method, ethnographic, comprehensive formation, complexity, education, praxis.

Resumen

La adopción de un *método etnográfico para la formación integral desde la complejidad* centra su análisis en la educación, escenario significativo para interpretar e identificar nuevas formas de comprensión del acto educativo, donde la pedagogía y la didáctica admitida por

el docente son fundamentales para religar los procesos académicos. Comprender desde la escuela que el sujeto de la educación es un ser humano multidimensional, sumergido en una diáspora de incertidumbres, certezas, dudas y utopías, situaciones que requieren miradas complejas para reconocer conexiones que dinamizan el tejido social del conocimiento. El método investigativo implementado, privilegia el análisis hermenéutico de los procesos que intervienen en la formación integral y asume su comprensión e interpretación en el contexto de la escuela, buscando penetrar en las simbologías e imaginarios de la comunidad durante del acto educativo. Para ello, la apropiación de un *método etnográfico de investigación acción compleja para la transformación*,

1. Introduction

This article presents the results of an investigation carried out in Barranquilla, whose main purpose was to propitiate a contextualized and teaching pedagogical praxis and transformer of integral formation processes in elementary school, and starting from the comprehension of the student in his/her condition of being human.

The research was carried out taking into account that changing the disciplinary foundations to arouse the transformations and auto-transformations demanded by education due to the educational commitments of the students suggests to go beyond the discourse, the norm and the law; in other words, it requires a subjective discretion of the teacher, expressed in processes that encourage the commitment of the academic community, if taken into consideration the necessity of reconsidering the conception of school to work on the internal and external contradictions and to restate them in a sensitive human environment (Hernández, 2014, p. 234).

The integral formation glimpses new positions of observation and construction of theories not on the education but on education in systemic relation with the formation and in the comprehension of other logics in the problematic fields that it approaches, for the explanation and didactic action of the training processes in the different levels where it interacts. However,

constituye una vía metodológica emergente identificadora de realidades, para avanzar hacia procesos de integralidad, validar percepciones y reconceptualizaciones de la formación integral y generar actitudes de transformación en la comunidad docente y discente. Una práctica docente integral desde la complejidad propicia comprensión y valoración del estudiante en su condición de ser humano, otorga reconocimiento en el aula, necesario para un contexto social que reclama inclusión, dialogicidad y profunda sensibilidad ecológica y humana.

Descriptor: Método, etnografía, formación integral, complejidad, educación y praxis.

training and education are categories that coexist together, but they are not the same and in spite of being part of the same category there are subtle differences among them. Posada (2008) refers that training is a more universal category, that covers the human being as a whole; and education is less universal and refers to the acquisition and development of more focused elements (values, knowledge, competencies).

In this scenario, an *ethnographic research methodology of complex action is proposed for the transformation*, seeking not only the recognition of the dimension multiplicity of the students in their human beings condition, but also to surpass disciplinary borders to address a distinct, dynamic, dialectic and systemic vision to advance towards a transforming and auto-transforming conception of education, with a critical, human and inclusive vision. In this regard "it must be recognized the different human dimensions and the commitment that teachers have to develop each of them. As educators, teachers are responsible for the development of the cognitive dimension of the students, but teachers have equal responsibilities in training" (De Zubiría, 2013, p. 195).

An *emerging conception of complexity* implies understanding the problems of humanity from a holistic perspective, where the whole, uncertainty, chaos, systemic, transdisciplinary and complex will be conceptual references that



will allow a better understanding of the human being in the context of a world; in other words, Heisenberg says (cited by Martínez, 2011b, p. 88): “it seems a complicated set of events in which all sorts of connections are altered, overlapped or combined and; thus, determines the whole.”

Appropriating the problems of education and educators from the complexity approach (Prigogine & Stengers, 2002) is to converge dialectic, dialogic and systematically different theories and disciplines with the purpose of causing new knowledge without disciplinary properties.

Recognizing new scenarios from a complex and transdisciplinary approach that allow comprehensive understanding of the systemic processes that form the education-training of students within the framework of a school that propitiates academic processes from an articulating aspect, is to move towards other methodological options that support the auto-transformation and transformation of the individual.

It is valid to recognize the efforts that other theoretical currents have already initiated from the school, such as the social critic, the problematic teaching, active pedagogy, conceptual pedagogy, socio-cultural learning, among others, to seek fundamentals and pedagogical strategies that support the formation of human being within the framework of a policy that objectifies the quality of education.

The complex hermeneutic as a methodological option from the formation-education admits the knowledge from the whole, in a continuous and discontinuous dialectic that makes knowledge an integrative and differentiating process. Morín (quoted by González, 2008) says that “what is in a whole is a thought that relates and opposes the isolation of objects of knowledge...” “the complex would be an element of transformation, so it is necessary to think of education as a transformation of the individual and the society.”

To respond from school to the cultural changes and scientific advances achieved from the various areas and disciplines of social and

human knowledge in the face of integral training, where paradigms, theories and current beliefs entered into crisis, is to recognize a partial development from the disjunction, although, it hinders the comprehension and integral formation of the student in his/her condition of human being.

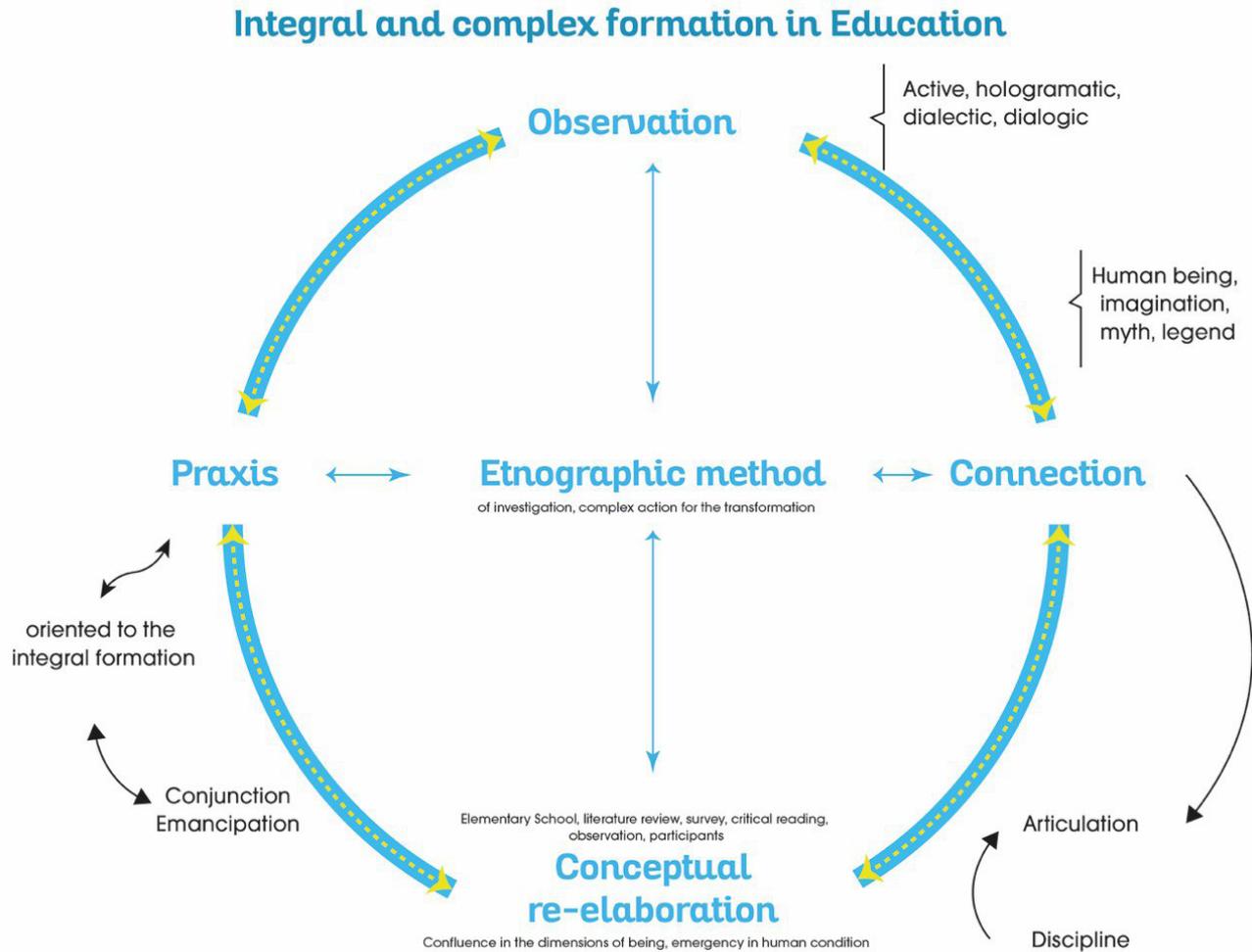
In this way, the positivist model is refuted and it was underpinned towards an emergent qualitative methodology, where the school recognizes the subject-object (student dimensions) in the physical, chemical and biological aspects on the one hand; and the psychical, social and spiritual on the other; as a unit and systemic peculiarity, in a socioeconomically categorized context where “food and affection” (Martínez, 2009, p. 9), be understood systemically and hologramatic articulated in a cultural set, with deep human sensibility, with defined but not definitive peculiarities, where the whole is continuous and discontinuous in a permanent dialectic of qualitative changes.

2. Theroretical frame and integrated methodology

An *ethnographic methodology of complex action research for the transformation* (Valencia, 2016) is not based on the mere and classical description and analysis of the phenomenon (passive observation, deliberation and speculation of the dimensions), on the contrary, it penetrates to the level of reality (Nicolescu, 2011) that reveals the context to understand, to relink, to systematize, to validate integrally the findings in a scenario of encounters and disagreements of imaginary, and symbols taking into account a praxis that admits “the confrontation of antagonistic needs, the creation of a new reality inside and outside humans, in which the imaginary is transmuted, where the real is torn and opened” (Morín, 2010, p. 37) to “learn, unlearn and relearn” (Toffler, 1993, p. 271), in a qualitative dialectical action that allows an uninterrupted reconceptualization of the being in the context of its integral formation.



Figure 1. Representation of the Ethnographic methodology category of complex action for the transformation



Source: Valencia Martínez, 2016.

From this perspective, the observer immerses in the revealed reality, it is part of it, emitting and receiving reciprocally influences of the object of inquiry, with the idea of not reaching principles of causality. According to Heisenberg this implies with uncertainty the “observer affects and changes the reality that studies” (Martínez, 2000, p. 16); therefore, it is no longer possible to reach principles and goals, but to generate attitudes of transformation in teachers and students from disciplines and beyond disciplines, identifying a complex structure that methodologically assumes components associ-

ated with active observation; connection, deconstruction and conceptual reconstruction, and praxis for the complexity of the processes.

This methodological category unveiled in Table 1 served as a benchmark for the implementation and development of the doctoral thesis “Comprehensive training and complexity in high school” that in addition to articulating to the objectives of the research, it was also identifying the research strategies in accordance with the context and specific circumstances that revealed the studied reality. A significant importance for this process:



An initial exploratory and mental opening approach to the problem to be investigated, (...) the use of multiple and intensive research techniques with emphasis on participant observation and interview with representative informants... which supports an interpretative framework that highlights the important role of the set of variables in their natural context for the determination of behavior, and that emphasizes the holistic and ecological interrelation of behavior and events within a functional system (Martínez, 2011, p. 200).

However, *the implementation of an ethnographic method of complex action research for the transformation* does not rule out the appropriation of a qualitative-phenomenological approach, given that

It offers an alternate and different point of view of the positivist about the objectivity and appropriate methods for the study of human behavior. Basically, this orientation holds that social scientists cannot comprehend human behavior without understanding the internal framework of reference from which individuals interpret their thoughts, feelings and actions (Martínez, 2011, p. 201).

Thus, the formulation of the *ethnographic method of complex action research for the transformation* allows understanding, complementing and “interpreting what happens from the standpoint of those who act and interact in the problem” (Elliott, 1994, p. 25), in addition to other social actors present in the near or distant environment; therefore, it is necessary to specify what “happens”, since “it becomes intelligible in relation to the subjective meanings that the participants conform. That is the reason interviews and the participant observation are important research tools in a context of research-action” (1994, p. 25).

In a context of complex educational research, its community owns and actively participates in the study and research, has access to the information, systematization, interpretation and approval of the findings, which is developed

in a climate of mutual trust “that can only be validated through lock-free dialogue” (Elliott, 1994, p. 26).

The main aspect for a type of complex ethnographic research developed in a school context is to sensitize and consolidate a teamwork integrated by executives, teachers, professors, students and parents, able to oppose, articulate and complement each other from their role as professionals, in order to face the problems presented by young people in a world that is full of a system that tends to dehumanize; therefore, it is necessary to work with the disciplinary contents and with the non-disciplinary content that emerge in the classrooms, having as main target the human development (Batalloso and Moraes, 2012, p. 88).

It is essential to validate the epistemological, theoretical and methodological processes from an experience of investigation in the classroom, and propitiated from an environment that eases the investigative process, in order to generate the attitudes of cognitive and human transformation required by an educational community. “The methodology used by the teacher to teach... should promote the development of thought, which goes from simple approximation or demonstration to the most complex learning situation” (Villalobos, 2001, p. 5).

3 Analysis and results of the methodology used

3.1. Complex praxis, generator of transformation in the integral formation in the classroom

The reality or level of reality that involves the educational world in schools reveals a diverse and rich scenario in social and cultural experiences that often find no opportunity of expression in the classroom, due to the presence of dominant mental and imaginary codes that have been legitimized from disciplinary power.

The breakdown of disciplines (multiplicity of scientific areas and increasingly open



society models, the disappearance of barriers in communication and the globalization of information) is forcing the consideration of much more powerful models of analysis compared to those that were typical of a single disciplinary specialization.

The complexity of the world and the current culture forces to analyze the problem from different and multiple perspectives, otherwise, it is easy to affect the results by the denominations imposed by the selectivity of the analysis perspectives (Torres, 1998, pp. 29-95).

Using methodologies that enable the free implementation and articulation of interdisciplinary knowledge constitutes an opportunity to "entwine knowledge and see all possible edges of construction." This is where the transdisciplinary plays an important role in the research processes" (Nicolescu, 2002 cited by González, 2009, p. 14). The tendency of a disarticulated disciplinary cognitive education of disciplines and of formation allows identifying "the fragmented conception of the knowledge, the division between the theory and the practice that have characterized the curricula must be surpassed by interdisciplinary curricular proposals" (Correa, 2004a, p. 241).

Nevertheless, the school advances using disciplinary curricula where "the traditional concept of science and its empirical experimental method seem to constrain and imprison the creative imagination of thoughts" (Martínez, 2011, p. 18), marking limits, which imprison the being in a world that is not real, generating new frontiers that limit the diaspora from a thought "that recognizes and treats the multidimensional phenomena instead of isolating each one of its dimensions... a thought that isolates and separates must be replaced by one that distinguishes and integrates" (Morin, 2000, p. 10).

The disciplines in the context of society knowledge reach partial truths; however and despite of dealing with shortsighted truths, the evident resistance to change seems unwavering in the teaching thought to challenge the science; it would be up to him/her to give a step to the

uncertain, to the unknown, to the dark, that generate a typology of fears that invades the objective and subjective world of the human beings that are part of this community, emerging the fear, the doubt and distrust, that is, the fear of failing.

The fear of failing in the classroom is the fear of losing the "power" and "control" that gives the partial knowledge of the discipline, not to do so is to give space to other knowledge that circulates in the thought of the individual, often denied and misunderstood because they escape from the knowledge and disciplinary control that the teacher possesses. Failing in the classroom may imply defying the positivist certainty of knowledge, it is to open different epistemological pathways that interrogate uncertainty and make possible the emergence of new critical-social visions; context that demands a type of teachers with integrative knowledge, who challenge the disjunction and bet on sensitive whole that is likely to cause a hologramatic understanding of the big challenges faced by education nowadays.

Formation, as an educational category, has caused controversy since antiquity, passing through the classics, contemporaries and current times, in which stand theorists like Plato, Aristotle, Humboldt, (Gadamer, 1999), (Guy, 2000; Orozco, 1999; Tobón, 2010; Nova, 2013 and Correa, 2009), respectively, among others, who have created valuable scientific contributions that still recreate and controvert the various viewpoints that each field suggests.

However, to form integrally a human being is to recognize the existence of a multidiversity of dimensions that are present in the individual. This implies breaking or approaching the frontiers that the objective and subjective world has created to keep unscathed the Cartesian principle of dispersal.

The teacher must recognize that disciplinary detachment is also an emancipatory process, allowing him/her to understand the world that is characterized by "interconnections to a broad and global level" (Martínez, 2009, p. 20) which implies, moving towards the problem and sys-



temic integration of knowledge and know-how. Bertalanffy, L. Von, et al. (1981, p. 47), express that “humans live in a world of systems from the atom to the galaxy”.

It suggests processes of change to the ways of acting, feeling, thinking and doing; nevertheless, resistances in some teachers governed by principles of cognitive inflexibility hinder their connection, generating a divorce between the thought and the acted, maintaining a kind of “aimlessly” equilibrium that delays the essential academic and training processes from a qualitative dialectic.

Transformation and self-transformation are systemic acts inherent to the individuality of being, in which social, cultural and genetic aspects intervene; therefore, are not propitiated by the norm, law, regulation and/or training, but by the person. In this sense, the history records the mass attendance of teachers to training meetings, justified many times by countless reasons ranging from the most exotic to the most unlikely, converting these scenarios into spaces of dialogue supported by routine and mechanized actions and once teachers return to the classroom, separate practice from theory and vice versa.

However, it is not a question of invalidating or denying the existence of pedagogical teaching qualifications strategies that still have a conceptual validity in the school and outside it, favoring positive experiences for the fulfillment of the goals that consensually agrees to institutional planning; instead, the idea is to identify a methodological strategy of conceptual and contextual relevance that would case epistemological imbalance in the teaching and student community, that is, to provoke evident changes of attitude in a systemic praxis between cognition and integral formation.

3.2. Theoretical and methodological contributions from the complex to the integral formation

The academic world undergoes countless categories that often find a partial level of under-

standing and interpretation from the positivist science; however that world is immersed in a dialectical interweaving of ideas, passions, frustrations, hopes, contradictions, uncertainties, blindness, feelings that travel individually and collectively in the objectivity and subjectivity of the human being, which can hardly be analyzed; overcoming that theoretical and methodological obstacle requires integrative visions capable of recognizing the whole in the parts, and the parts in their systemic relationship with the whole, that is, to appropriate rebinding processes of a hologramatic and complex thought.

The human being is complex by nature, a disciplinary vision only illuminates a part of the cognitive darkness, an inter-and transdisciplinary vision opens a diaspora of interconnections that approximate the comprehension and interpretation of the reality in which is immersed the Integral world of the student, where “transdisciplinarity would be an emerging superior knowledge, product of a dialectical and feedback movement of thought” (Martínez, 2011a, p. 67).

Nevertheless, adopting an ethnographic investigation with complex vision in a domain area and disciplinary control is to open a symbolic battle of ideas, concepts, perceptions and imaginary events, is to fight against mental schemes that have long remained as protectors of the inalterability and certainty that produces science, characterized by displaying a strong resistance to change, transformation and uncertainty.

An *ethnographic method of complex action research for the transformation* is an experience of innovative field, it means challenging from the classroom the relentless teaching resistance provoked by the disciplinary dependence. It is not the recording of voices, ways of acting, thinking, and dressing, or what should passively be in the daily activities especially when the presence of the researcher alters the organizational climate and causes a kind of “prevention”, among others, because the results of a research that investigates pedagogy and teaching didactics can jeopardize the entrusted social commission.



Without altering the ethics of the information and the consensus endorsed from the school organizations, an *ethnographic method of complex action research for the transformation* contemplates the implementation of diverse pedagogical and didactic strategies that gain contextual relevance at the time of generating epistemological imbalances in an educational community.

The voices and perceptions emitted by the key actors of the educational community, when taken to the classroom or the institutional stage of teaching convergence, can generate a kind of epistemological resonance that causes according to the attitude, reflection, anxiety, helplessness or transformation; that is, to put the voices of the interlocutors at the same time they develop the educational act, propitiate an environment of reciprocal analysis with the particular forms of thinking, feeling and acting of the teacher.

This produces a kind of "negotiation" between the unveiled reality and the objective and subjective world of education, expressed in a change of attitude that is visibly validated and endorsed by the educational community.

The qualitative intention is expressed by integrating a more integrative pedagogical and didactic appropriation with sensitivity and affection that create a school environment that leads to a better learning process in a classroom scenario that assumes its own self-assessment articulated to the missionary processes of the educational community, from a hologramatic, comprehensive, interpretative and evaluative dynamic of the student as a human being to "reconcile the viewpoints according to principles and values" (D'Angelo, 2005, p. 159).

The valuation, recognition and insertion of the popular knowledge that accompanies the daily life of the students, and the systemic articulation of knowledge between disciplines at the time of developing the classes, propitiate self-esteem, responsibility, security and participation among students, making possible the emergence

of these new analytical units that are proper of a school with conceptual and contextual relevance.

The classroom becomes a pleasant space for the interlocution of knowledge and know-how; in this way, the teachers admit that their students are also human beings integrated by a multiplicity of interconnected dimensions among them.

Pedagogical and didactic innovation is fundamental to stimulate learning differentiators, typical of those classroom scenarios that recognize all viewpoints as synonymous of consensus and dissent, guarantors of a dialectical circulation of ideas, thoughts and knowledge.

The school as a whole is dialectical by nature, and reveals many faces, many tensions, characteristic of a human dynamic that is permanently subjected to cognitive and training imbalances. This speed of knowledge puts at risk the linearity of the "truth"; the world is complex, changeable, systemic, open to emerging knowledge, articulated to a classroom scenario where doubt, question, uncertainty, are permanent challenges for the teacher and the school.

Structural premises to consider that the school institution should propitiate *educational qualification scenarios in processes of integral formation from the complexity*, with the purpose of interweaving interdisciplinary knowledge that broaden cognitive, training, integrative and human visions.

This context of realities warns the need to initiate an integrative curricular reform of knowledge with holistic vision (Guyas Fitch *et al.*, 2015), own of institutions that have identified the plus differentiator associated with the multiplicity of knowledge, to link the teaching community to cognitive and human integral processes, with the intention of cultivating new pedagogical culture that along to the use of new didactics can make of the pedagogical model a dialogic and multidimensional opportunity by emerging reality that encourages conditions to interlace the intangible socio-cultural present in



the family unit to the cognitive and formative complementarity processes of the school.

Scenario to accentuate the diverse cultural participation from the promotion and recognition of the other, taking into account values, emotions, skills and competencies, suggestive perspective to stimulate permanent processes of self-evaluation from the classroom, mediated by the voices of the individuals involved in education.

Education is a systemic interweaving of know-how and social knowledge; there are multiple and linked perceptions that reach the student, reason for which it is considered necessary that teachers maintain integral visions, regardless the educational level or grade of the individual.

Overcoming the objective and subjective resistances constitute a structural challenge for the teacher, and to liberate the linear thought and move towards thoughts and interdisciplinary knowledge is to make a qualitative step towards the emancipation of the human being. Therefore, the attitude of change and transformation is an individual act that requires a deep and decisive articulation between thinking, feeling and acting. This implies recognizing the own dimensions and the ones proper of the objective world. That is the only way to advance towards a process of understanding the whole and complex world of the individual.

4. Conclusions

Disciplinary dispersion in an epistemological constraint for the integral knowledge; the ignorance of interdisciplinary knowledge produces harmful effects for the training framed in a type of classroom where the teacher takes a selective strategy of interlocution in individuals, skewing the collective intervention and propitiating another type of dispersion that affects the freedom and curtails the interaction of different knowledge.

Discipline is the power of the teacher in the classroom, and it produces interdisciplinary blindness because students globalize their questions, show signs of inconformity that are

many times not seen by the teacher, because his/her priority is focused on the “compliance” of the topic and the program, and visualizing these perceptions in the classroom, produces methodological and didactic imbalances.

To get rid of the disciplined power is to reach the emancipation of ideas, to move towards the autonomy of the thought, which means that “education must be understood as a non-manipulative influence of the students, teachers, parents and mothers: its goal will be to help people develop their autonomy, the fundamental principle of integral training” (Correa, 2004b, p. 61).

Mediating the intersubjective codes of students and teachers means culturally intervening the imaginary world, ideologies, fears and resistances, which accompany the individuality of the human being, that is, to culturally make them change and transform to move towards a new conceptual experience of the school:

(...) A deep reflection can be obtained from it, and a great reflective event with each of these aspects, because a new approach for high school can emerge with the possibility of resorting to another way of thinking, living, or being (Peñalver 2003, p. 3).

It is necessary to promote changes and transformation from the classroom, because “its mission is not the transfer of content and knowledge, but rather to provide students the competences to progress and to order what has been learned: learning to learn” (Fuentes, 2011, p. 6), also to promote sensitive to be involved by intellectual currents and not tied to normative formalism, to make of school a pedagogical and didactic laboratory that favors the completion of the dream to conceive education as a complex systemic process of integral formation with sensitivity and human and ecological integrality, in the context of a school that recognizes and uses the multidimensionality of the student as a human being, who is protagonist of knowledge and relevant learning in the context of an emerging reality.



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