

Designing a Ph.D. Program in Education using Cooperative Learning at the University of Florence

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Foreword

The contribution, here presented, is a proposal of laboratory-learning pattern for a training of quality to be experimented in the path of Higher Education such as Masters and Research Doctorates. In particular, the here-conducted analysis aims to offer a contribution to the construction of an experimental laboratory inside the School of Doctorate in “Quality of the Education”, at the University of Florence, directed by Prof. Paolo Orefice.

It is more and more evident, that in the study proposals of the Higher Education, a particular attention should be given, besides quality of contents and learning modalities, also to the acquisition of knowledge and of skills in doing research in different professional contexts, as well as on how each research activity should develop in cooperative and collaborative contexts, in the purpose of allowing a scientific community to benefit of contributions and to further develop them.

The introduction of a cooperative approach in the Higher Education is motivated by the need of opening a new way of thinking the research, that must respond more and more adequately and creatively to the crisis of values and to the formative disorientation existing in many institutions. There is the awareness that research and development of knowledge are not private matters (De Mennato P., 1999), regarding the researcher individually. Each new research and its outcomes involve the entire scientific community and collectivity. The science is part itself of culture and whoever is involved in it must identify the coherent and suitable modalities to allow that such a combination takes place in a dynamic and creative way. On this subject, it is necessary to insert a specific reflection on the path organisation of the Higher Education, in order to allow the doctorate students to get an education also in cooperative learning contexts. It is necessary to activate a specific path for the preparation to the socio-research, i.e., to a research approach that can be able to appreciate from one side, the autonomous choices and the disciplinary paths of interest for the researchers and, from the other one, to potentiate those necessary skills to built a science that can be shared, and from which - in a broader sense - the collectivity will be able to benefit.

In the reflection about the characterizing patterns of the Higher Education, the contribution of the Cooperative Learning integrates itself with other patterns of active research, that allow the subject to develop an own point of view, putting, at the same time, under discussion its partiality and its criticism. The Cooperative Learning is part of a broader research methodology approach that refers to the contributions given by the paradigm of complexity, and following the constructivist perspective. Therefore, the CL is part of the methodology of the Participative Research Action, that offers a methodology of research, intervention, education and of social work, that involves all those who are personally experiencing the problem, that the research itself intends to solve and develop. Placing itself as a path of learning, education and transformation, the Participative Research Action (Orefice, P., 2006) is based on the integration of the three methods to which it refers. In

particular, the RAP is used in “local education” contexts, where it is necessary to involve the subjects – protagonists in the research of changing solutions and of transformations of living conditions, for a creative development of the culture and of the reality of reference.

The RAP and the Cooperative Learning find their point of junction, in the need of developing research skills of quality, that can be able to nourish some social knowledge and “know-how”, that can activate and, specifically, in the research actions of high level. The CL and, in particular, the pattern of the group research (Sharan, Y., Sharan, S., 1998) allows the construction of organizational and relational skills that, inserting themselves in a broader process of RAP, contribute to the attainment of the success either personal and of the research. Both contributions, inserting themselves in the line of active methods in education, recognize as fundamental to the knowledge development, the inclusion of every kind of guided or mediate learning in a natural process, that is given by the research dimension of the knowing process. A process that puts each subject in the conditions of passing, from a personal reflection to a social dimension, involving directly the subject and making him/her responsible. Both of them, still can catch the close bond that every educative action must recognize, between the potentialities of human development and its connections with the learning process, that activates in social and cultural contexts.

The impossibility of separating the learning of individual subjects, from the events and from the social phenomena, becomes one of the key-readings to clearly affirm that every educative context, also the most specialized in the disciplinary sector of reference, is always in continuity with the social life, its cultural and organizational modalities and its values (Dewey, J., 2008). The education of the new researcher and of the researcher community must therefore be thought in a democratic, participative and, in a broader sense, cultural perspective. In the educative path of doctorate, as a path of Higher Education, the experience of social and democratic learning attains so, an even higher and significant value, because it assumes deeper social and scientific responsibilities (Orefice, P., 1993).

On this subject, considering that the research has an important social implication and that the researcher cannot be separated from that and from the research context, we consider fundamental to reflect on the matter, that science is a social construction and that it is the expression of productive and creative research processes, that do not represent private matters, rather a social dimension and its competences. In this scenery, the Higher Education holds a central relevance, because it represents the interface between the scientific research, at its most higher levels, the educative systems and the social systems.

Problematic aspects

They can be, inside the path of Higher Education as the Research Doctorate, the taught and learnt methodologies to be used for the research, that can develop social skills qualifying either the educative paths or the research results and that can activate processes of innovation and of knowledge transfer in the society of knowledge.

Hypothesis

Among the different active methodology patterns, the Cooperative Learning, and specifically the “Group Research” (Sharan, Y., Sharan, S., 1998) pattern, can offer an important contribution for a quality education to the scientific research, because it allows the creation of scientific, organizational and relational knowledge and skills, that qualify the education of doctorate students.

Motivations

The reference to the CL methodology in general, and to the Sharan pattern, in particular, is motivated by the matter that during the doctorate's educative path it is necessary to use a research methodology approach that can allow to build organizational and relational skills, qualifying the whole educative process. Obviously, this interaction paved also the way to the consolidation of communicative skills that can be used in the contexts of critical and constructive comparison. Such skills are necessary for the scientific exchange and to overcome intra and interpersonal conflicts that, in competitive and hierarchical organisation contexts, like those that can be activated in the university contexts, inhibit the creation of interdisciplinary networks that are functional to the strengthening of the research itself.

The cooperative approach allows the creation of an analysis, meanings comprehension and interpretative perspective that highlights the scientific and personal skills of the subjects.

The comprehension of reality in a cooperative and participative way, staking different personal resources and being able to observe problems from different perspectives, let the researchers do an auto-reflection that helps to let emerge the awareness about the complexity of the useful research skills to attain the research's success. Nevertheless, a special attention must be given also to highlight, that by doing research, the feeling and thinking dynamics must find the possibility to integrate in it. If the cooperative method takes under consideration the emotional dimension of the knowledge, it can produce a feeling, that makes the subjects willing to take part, act and think while sharing a common aim. Working together is also a source of knowledge relation, of emotional exchange and of new feelings construction. The development of skills and competences, going beyond the social and/or cognitive meaning, leads also towards the individual and collective meta-reflection, as a monitoring tool for learning..

The reference to the intrinsic motivation is linked to this subject, it feeds itself with the shared research work and it is open to the aware participation of the adult subject, who organises his/her own learning by analysing and interpreting which change is given by the new knowledge acquisition. The experience carried out in the Higher Education of building an autonomous path of research, makes it even clearer and aware about the meta-cognitive skills acquisition, that are able to foster more and more the autonomy of the subjects, the organisation of learning contexts and the development of the group research.

It is then comprehensible how the reference to the community pattern enters into the projection of the doctorate school laboratory where, beyond the specificities of the disciplinary interest, the education carries out also an interdisciplinary perspective that express itself by the shared identification of the scientific problems, of the analysis skills of the issues from an own disciplinary perspective even catching and understanding other ones, of the skill to welcome the contribution of other disciplines for the developments of the own research and of the competence of knowing how to build scientific products, that can use and highlight the cooperative work nourishing the research and its outcomes.

Among the doctorate aims, it is relevant the one of render the subjects in education more and more aware that the process of the research knowledge acquisition is strictly and coherently integrated either with the construction of a democratic and participative social knowledge, or with the dynamics of feeling and thinking, that found the knowledge building (Orefice, P., 2001).

Laboratory

To answer the need of developing, also in the Higher Education, social and cooperative skills, that can be useful to carry out original, creative and participative researches and to be

able to offer in the future professional social and democratic competences, also in different professional contexts, it can be hypothesised a laboratory path to consolidate some disciplinary contents offered by the seminars, but with the aim of enlarging the educative experience of the doctorate students, by integrating also some knowledge, that sometimes can remain shadowed. There are skills that will become real tools of relation with the professional contexts, that must find a space of education during the doctorate's path. Being able to activate a continuous relation between the own knowledge and the professional contexts of reference, or being able to modulate and mediate the relation between theoretical, normative and oriented elements and the practical and applied professional activity, constitutes some of the competences that the educative path of the doctorate can develop.

The purpose is to invest in the education of a new scientific community that can be able to interact, to cooperate and to communicate in a positive and creative way, respecting the educative diversity and the several disciplinary perspectives, but at the same time, that can be able to create osmosis among the disciplines. It is of interest to open an interdisciplinary dimension of research, where disciplines can be able to dialogue by experiences of integration and exchange. The dialogue follows a flow, that sets its priority in the need of being able to recognize the other and to activate communicative and relational tools of meeting-comparison-exchange-change.

The researcher in his/her research activity activates anyway a kind of dialogue: while asking questions to his/her object to explore and waiting for a reply, that can validate his/her hypothesis, the researcher express a dialogic dimension. Anyway, the relation of exchange is not something that the researcher feels naturally. The dialogic availability of the researcher gets more and more competent, if specific dialogue tools are also built. The methods of such approach must act on the objects or on the phenomena, in the way of reserving a space for listening and expression. Heuristic and/or inductive approaches, for instance, facilitate the dialogue, the meeting, the exchange and the reciprocity dimension. Here is the coherence with the research: the way itself in which the research is taught must be fed by the way in which it is experienced.

Therefore, in the educative environment, the reference to the dialogue cannot be limited to the sole regulatory category of the good education, it must be used at any level, from the one of the scientific analysis to the one of the educative experience, from the one of the methods used to the one of the interpersonal relations.

Methods like the CL represent a fundamental contribution for the development of communicative and dialogic skills and it is also in this dimension, that its insertion in the Higher Education is an important resource.

In the dialogue of the research, as well as the exchange and the need of listening contribute to let overcome a habit that still persists, about thinking in defence of the autonomy and of the exclusivity of the own discipline and knowledge. The system of separated relations is still strongly present and it is expressed by the system of the disciplines that puts away the social dimension of the research. A system of work founded only on the separated specialisation, contributes to the maintenance of a perception of social dynamics in a hierarchical and dependent way, not at all democratic and autonomous. The comparison need about experiences, resources, perspectives, that can be activated in cooperative groups of research, develops the knowledge and the awareness about those methods, that facilitate the collection of reciprocal relations and influences among the parts and in everything in complex world (Morin, E., 2001).

The need of educating researchers in an interdisciplinary perspective, is motivated by the awareness that it is more and more necessary to be able to catch the aspects of the phenomena in a complex, and not in a partial and separate way.

Working in an interdisciplinary way means to establish some criteria of necessary relations that are able to foster the dialogue, the comparison, the development and the creative transformation of the theoretical and practical knowledge. The experimentation of these processes inside the CL procedures, is clearly linked to the research phases and, in particular, to how, while working in groups, the research is planned, identifying the necessary perspectives, criteria and methods in order to deal with the study.

The phase of transformation should lead the laboratory group, to enter a dimension of relation among disciplines, that is more complex and resulting by the transdisciplinary perspective. It does not exist a sole science, a invariant pattern of scientific method and of research logic, but it assumes different modalities in the several spheres of knowledge (Cambi, F., (1996). The complexity of the scientific research that develops more and more inside networks of learning-research and of interpretative interdisciplinary patterns, leads, in a transdisciplinary perspective, to create a transferability of the used methods by the different disciplines, to generate new hypothesis and research itineraries. The passage from neurosciences to the pedagogy, from the mathematic to the physics, produced the emersion of new ways of reading the phenomena, that are able to get closer and closer to the complexity, that is typical of the knowledge and of the context inside which the knowledge itself takes place.

The new communities of researchers who are involved in scientific research activities of excellence must be able to dialogue by constructive and creative partnership modalities, together with all the institutions that are involved in several ways in the educative processes. The need to integrate different educative systems, recalling the transferability and integration of methods pattern, and to develop the knowledge potential of each subject, by a continuous qualitative enrichment, can concretize by building disciplinary and interdisciplinary networks. These networks can implement innovative modalities of educative action, by activating the reciprocal comprehension, the respect for the different religious, cultural and scientific values, and by feeding the freedom of expression modalities. The construction of interdisciplinary interpretative patterns offers also the opening to more complex interpretative systems, that are coherent with the complexity of the studied phenomena.

The nature of the knowledge construction, that is elaborated by the contribution of the social constructivism, affirms the value of the subjectivity in the and of the knowledge, prospecting a continuous research of mediation between the typical universality of the objective knowledge and the multiplicity and variety of the situations in which the thought and the action of the human being take place (De Mennato, P., 1999). To do scientific research does not only mean to enter into the discipline's procedures, but also to catch the representations and the images that the researcher has of it and of its distinctive characteristics as well as of the destiny of his/her own activity.

The doctorate students in the learning process built their research on the basis of an own system of theoretical reference, which is explicit and implicit, that orientates the choice of epistemic objects and activates or not the inter-subjective exchange among the interpretative models. The paradigm of reference considers the subject as an active one, who interacts with the reality, whose interpretation is not neutral and "objective", but placed, i.e. it depends from the point of view, from the theories, from the procedures and from the processes, that the researcher uses.

Putting the coherence to the test, among research object, method, product and educative success, is another qualifying element that characterizes the laboratory. The choice of a method that, integrating to the more complex methodology of the Participative Research Action, develops a sense of democracy and of social participation, integrates itself in the disciplinary focuses of the research group. The comprehension and the appreciation of the disciplinary diversity is coherent with the experimentation experiences of positive overcoming of intra and interpersonal conflicts, that stay at the base of the studies on human development and of the education for the culture of peace. The object of the research must be coherent with the methods that are used.

The laboratory planning using the CL, must include the processes characterizing the specificity of learning at adult age, in the Higher Education contexts. Forming one or more research groups of learning in adult age, sets different problems and issues from those ones that can be found in the formal education in the age of development. Considering that adults are free in the laboratory choices, because the proposals are different, and considering that, for certain aspects, also the participation to the activities cannot be “compulsory” (participation and attendance may depend from the validation of formative credits, assigned to the laboratory.), a strong and intrinsic motivation is needed to take part in this educative proposal. It is also necessary to bear in mind the variety of origin conditions and situations of the doctorate students and then of how to integrate different educative patterns, expectations, professions, ages. Anyway, it is important to consider, how in the adult age education, the change is considered a category of reference and of constant reflection about the achieved educative process.

The awareness about the possible achievement of the own educative earnings, the comprehension of the nature of their processes and their comparison with waiting and expectations, must get related with the CL pattern, that in the most part of its proposals, acts in school or in discipline contexts. Even when it is addressed to the education of teachers, the method tends mainly to work on future skills of the operators, less focusing the attention on learning processes in the adult age.

The educative offer of the Doctorate School Laboratory considers, thus, the need to explore and appreciate the dynamics, that are typical of learning in adult age, by highlighting the capabilities of elaborating and managing the own knowledge in the relation with the others, in a critical, aware and autonomous way.

Conclusions

The study of a cooperative laboratory-learning pattern of quality inserts itself inside a broader research directed by Prof. Orefice, in partnership with other Italian universities. The project of reference “The quality in the Higher Education. Theoretical patterns and methodology for the education to the research, with particular reference to the pedagogical skills and to the quality evaluation devices for innovation and the transfer of knowledge in the society of the knowledge” has as an objective a research program that aims to focus – by a research plan that consists of theoretical and empirical levels, combining quantitative and qualitative methodologies – on theoretical patterns and educative procedures. They have to be adequate to the planning and to the curricula achievement of the Higher Education to the research, the innovation and to the transfer of scientific knowledge (with particular attention to the pedagogical and educative knowledge), that are built on the basis of a monitoring of skill profiles (general and specific ones) highly qualifying, professionalizing and monitored by already experimented and validated quality devices, in the Italian and international university systems.

Therefore, the laboratory will have to develop in an experimental way, with the students of the two existing doctorates in the department of Sciences of Education. The free choice, by the doctorate students, to take part or not in the laboratory, will be a characterizing element of the group. In fact, in this case, the motivation to the group research, on the contrary of what happens in school context, comes previously to the learning activity itself. The proposed laboratory pattern, aims to acquire the contribution of CL on two integrated levels: the one of the vision and the one of the success of the educative path. On this subject, it must be activated a widespread sensibility to the group learning and to the benefits to which it arrives, but a process must be well structured, too, in order to allow the successful acquisition, by all the doctorate students taking part in the laboratory, of the fundamental group research skills, to operate also in different professional contexts from the academic ones.

Thus, it will be necessary to put more attention to the specific dynamics of the learning process in the adult age, considering the motivations that urge to participate and to the expectations from the educative path. Participation time and availability of the doctorate students highlight the problem of being able to adjust the laboratory path, at the same time, either flexibly or in a “contained” way.

The implied complexity of this kind of education must be clarified to the doctorate students. Beyond their research skills, the doctorate students must activate a continuous meta-reflection on their work, on their knowledge, on the discipline perspectives of reference, on the interdisciplinary contribution to which it is necessary to come, and mainly in the educative research and about the strengthening of social skills that must appear coherently with the values of a democratic and participative education. During the process, the doctorate students should try to modify the competitive and selective learning and research pattern, that the academic environment very often nourishes. The investment on the research group becomes here very high. The education to the cooperative learning through the five base-elements of the CL (Johnson, D., Johnson, R., 1996) and the cooperative planning of the research activities (Sharan, Y., Sharan, S., 1998) must lead to the construction of a future academic group that is able to set itself as an academic cooperative model. The short time of the doctorate must give to everybody the chance of new habits and new expectations for all those who are involved in the process. In this context the role of the teaching staff becomes delicate but, at the same time, very challenging. The university teacher is seen as the in-depth expert of the taught discipline and he/she must become the facilitator of the cooperative learning in the laboratory. The doctorate teacher's role, who activates the knowledge processes during the CL laboratory, must be further explored and thought. The experience of the education in adult age, leads to establish particular relations, less distant and hierarchical than those activated with children and young people. In this case, the age is often confused, and the generational distances, ruling the relations, here disappear. So, it becomes even more necessary the need of qualifying the educative relation on educative-participative ways that allow the teacher to develop the cooperative skills with the research groups.

First focus:

Creation of a positive environment on the basis of criteria that render the cooperation efficient
 Activation of interactive conversation moments and development of reciprocal comprehension of personal research interests
 Stimulation of the activation of different knowledge and skills
 Definition of teacher's role: organiser, facilitator, stimulator
 Participative identification of the research issues

Second focus:

First analysis of the validity of the method and its coherence with the research objects and contents
 Reflection on the needed integration between the research advancement and the interpersonal process
 Exploration of the needed social competence to do research in the Advanced Education
 Request of sharing the method among all teachers

Third focus:

The choice of research issues and the formulation of hypothesis of research activities planning
 Identification of the objectives of the research work of the group at short and long term
 Sharing modalities to be used in the research phases to collect information and consult sources
 Modalities and time planning to external involvement of doctorate students who do not take part in the laboratory

Fourth focus:

Coordination to the research on the basis of solicitations and interests of the participants
 Identification of the priority problem that becomes the research object
 Organisation inside the group on the research actions: subdivision of the problem's aspects highlighting the different discipline contributions from which the doctorate students origin
 Cooperative planning of the research phases and definition of the research modalities of the sources and hypothesis of development
 Definition of the interpretative criteria of the sources, their reliability and interest priority for the research
 The group produces and discusses *in itinere* the research work that it develops
 Presentation of the first outcomes to the extensive group of doctorate students
 Evaluation of the developed path

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