COOPERATION PROGRAMS ON EDUCATION AND TEACHERS TRAINING: THE ROLE OF UNIVERSITY AND EFFECTIVENESS EVALUATION

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This panel outlines the analysis of international development cooperation projects on education and training, which involve the university both as a promoter and as a partner. The aim is to highlight the specific support by universities in developing multi level actions: some of the projects aim at promoting policies to grant everybody the right to schooling, others projects are focused on training professionals, and some others introduce direct tests, in scholastic or extra-scholastic environments characterized by generalized difficulties or by multiple risk factors. The panel collects experiences carried out in different countries, where converging issues can be found, both in the aims of the projects and their results, though on extremely different levels.

F. Zanetti's contribution shows the experience of the University of Bologna in Kosovo. The program, carried out by the Dipartimento di Scienze dell'Educazione, funded by Save the Children and by the Italian Development Cooperation, was aimed at promoting processes of local development and specifically the culture for integration of impaired students. The project was carried out in collaboration with the Minister of Education Science and Technologies of the Republic of Kosovo and with Prishtina University. The initiative led to the realization of a strategic program for the comprehensive education of children with special needs and a coherent project of university training for special needs teachers. The perspective adopted is characterized by three main topics: the empowerment of the participants aimed at avoiding the creation of inferiority and subjection conditions in the targeted groups; the long term sustainability of the actions to counterbalance welfare dependency; the active involvement of the beneficiaries. The proposed model of training, therefore, enhances the teachers' social competences, turning them into innovation carriers, as active protagonists within the projects as well as subjects able to detect different needs throughout the territory and to provide comprehensive and adapted answers.

The contribution of C. Coggi and P. Ricchiardi from the University of Torino, on a similar theme, proposes an appraisal and sustainable training model for educators and teachers, tested in Brazil and in some countries of Central America and Africa. These training modules are tightly connected to empirical tests, aimed at detecting learning difficulties in students who grew up in multiple risk factor conditions, the most suitable programs and the training needs of the professors. The survey carried out focused on the specificities of the role of the university in a fruitful cooperation with NGOs and scholastic institutions based in the analyzed territories. The University should first of all *make an in-depth analysis of special needs*, concerning the training requirement, which often comes out as the teachers and educators' difficulty in dealing with complex learning problems as well as significant delays in *school readiness*. Observational studies and targeted surveys shall be carried out, aimed at outlining any specific student weaknesses and the needs of the professionals. Thus the research groups shall *elaborate on the identified issues, aligning them within a written international framework*, in order to *define innovative action programs* to propose to local professionals, so that these can access them and adapt them to the needs within their specific contexts. Hence, the University can start pilot studies, with the support of local professionals, in order to study and select the most effective actions to meet the required needs, checking both on short and medium term results. Based on empirical evidence, the constituted group of international research, also involving local universities in a profitable synergy, can organize *training sessions* for the professionals acting in the analyzed territory. Such actions are necessary to encourage the sustainability of the actions proposed and must be performed in compliance with the modalities of actively involving the people they are targeting. Concerning this item, the research group has tested two different models. The first is the responsive model, constructing knowledge and offering methodological directions to the people involved in training, starting from their requests for learning support. The second is the *training-research model*, foreseeing an initial sharing of the principles of the proposed method, in order to offer an orientation based horizon to those that these actions are targeted towards; a phase of familiarization and re-alignment of the materials of the group; some lab simulations and finally pilot experiments in classrooms and with the support, remotely, of the research group of the University, and of local NGOs. The University validates the approach and summary *assessment of the effectiveness* of the proposed interventions and actions, involving all the players, and the *socialization of the results*, through publications in the several involved Countries.

A research group from the University of Torino verified the model in Central and South America and Africa. The team carried out special studies on learning difficulties, developing consistent training actions, in order to develop within local professionals, strategies of cognitive and motivational empowerment of pupils with special needs. The proposed training model is aimed at increasing the competences of teachers in cognitive and emotional-affective mediation, by using a recreational approach to learning, which uses play-materials for pupils aged between 3-6 years and free online teaching software for pupils aged between 6-11. Teachers and trainers are offered an intuitive knowledge-based teaching structure, in small groups, through an involvement experience, focused on essential core

disciplines, in languages, mathematics and logic. The programs started in the countries where this cooperation is happening foresee, at least for the primary school, the use of computers, also improving digital awareness. Technology transfer though, creates several sustainability issues, mainly linked to the need to keep the hardware working, to update software and to access the web. Further difficulties the group of research had to deal with, in carrying out the programs of cooperation, concern above all, the selection of local skilled professionals ready to manage the coordination and to support the activities, once the training and pilot experimentations have been concluded. Institutions have not always been able to be in charge of the program. Where this happened (ex. Minas Gerais) it was clear that the teachers trained in several schools had accepted the principles of the method, substantially modifying their approach to the teaching criteria in their classes. This result was acknowledged and appreciated also by local authorities.

The panel illustrated the two formative models in an analytical way. T. Bonasso presented the training research-action presentation carried out Teofilo Otoni, in Minas Gerais. R. Trinchero presented the responsive model performed at Kigali in Rwanda.

Formative experiences have covered the themes of cognitive enhancement which exploited games on calculators. The intervention in Africa was divided into the following steps: 1) tracking of the expectations and preliminary knowledge of the participants; 2) software based re-aligning; 3) exposure of the basic concepts of cognitive enhancement; 4) comprehension test and feedback of participants-trainer and trainer-participants; 5) tracking of the problems met on the field by teachers, based on the acquired theoretical knowledge, with case studies; 6) isolation of paradigm problems and exposure of possible techniques and action strategies; 7) planning of class interventions and first preliminary experimentations; 8) final test with the request to participants to describe possible actions they would like to undertake in class, based on what they learnt during the course. In both situations, Rwanda and Minas Gerais, the activities are continuing thanks to the collaboration of NGOs and the involvement of local authorities.

FROM A DISCIPLINARY APPROACH TO THE CULTURE OF INCLUSION: THE ROLE OF THE DEPARTMENT OF EDUCATION STUDIES OF THE UNIVERSITY OF BOLOGNA IN THE PROJECT "INCLUSIVE EDUCATION FOR CHILDREN WITH DISABILITIES IN KOSOVO"

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ABSTRACT

Particularly over the past decade, the Department of Education Studies of the University of Bologna has consolidated its role in education and consulting in the field of socio-educational interventions in international cooperation. In different contexts and with different social stakeholders, the common purpose has always been to foster the development of autonomy and construction of aware identities by the inhabitants and communities in the project territories. In the latest project, funded by Save The Children Italia Onlus and the Italian Development Cooperation, from 30/11/2012-30/04/2013, generally aimed to contribute to the inclusion of more vulnerable groups in the economic and social life of Kosovo, starting from school. With 50% of the population aged under 25, the implementation of quality inclusive education starting from pre-school age for all citizens, whatever their ethnic, social belonging, their disability/ies, represents a priority for the Government for the development and democratisation of the country. A specific objective is to guarantee access to quality preschool and primary education for children with disabilities in 8 municipalities of the 7 regions of Kosovo. The operational plan of the project was based on the cooperation between Save the Children, the MEST "Minister of Education, Science and Technology" of the Republic of Kosovo, the Faculty of Education of the University of Prishtina and the Department of Education Studies of the University of Bologna with the aim of: - implementing the "Strategic plan for organizing inclusive education for children with special educational needs in pre-university education in Kosovo", drafted by the MEST; - providing technical support to the MEST and the University of Prishtina for drafting a teacher training plan for teachers and support teachers, based on inclusive education (establishment of a Master Course of Inclusive Education; renewal of the Preschool Programme and Primary Education Programme with a view to social inclusion); - viewing and knowledge of the Bologna degree programme for support teachers; - activating and supporting a process of renewal in teacher training, recalling the social function of school and professionalism which may be a factor for innovation in the quality of course contents in new training courses and social policies.

CONCEPTUAL ORIENTATION FOR DEVELOPMENT COOPERATION AND THE NEW ROLE OF UNIVERSITY COOPERATION

Socio-educational and learning interventions in the context of development cooperation cannot be removed from an in-depth reflection on the very concept of cooperation and development, in relation to social transformations and new global scenarios, which demand models and practices that take account of sustainability, governance and an educational dimension that is increasingly linked to autonomy, participation and inclusion.

The aim is to analyse new potential conceptual orientations, through models, instruments, thoughts on good practices that offer ideas for adjusting the aim of intervention policies. This means starting from changes in the complex concept of development in order to be able to define new cooperation instruments and models.

The concept of development dates back to the post-war period, defining the process through which, thanks to the support of more industrialised countries, "backward" countries would have reached the same level of so-called progress, in the name of modernisation and economic growth, in a western, post-colonial perspective. According to this meaning, antinomies are created that are still very difficult to overcome, despite their inadequacy: developed/developing, rich/poor, industrialised/non industrialised.

Around fifty years later, during which time economic growth has not managed to achieve the illusory objective of putting an end to poverty, we examine the profound contradictions that mark the activities undertaken with a view to development, which is still very often perceived as more in terms of damage than of opportunity. The attempt to create a fairer world has failed, the global socio-economic divide has taken a stronghold, the difficulties caused by development have increased where the poverty of certain groups or countries has been used as a pretext to promote investments with positive effects mainly in the richer countries.

In the 1990s a new concept of development took hold, with a different meaning: "human", combining the criteria of

social progress with those of economic progress; “sustainable”, implying a focus on the conservation of natural resources and respect for the environment; “participatory”, considering the process of democratisation and the protection of human rights. A new concept of poverty and social exclusion took hold, the prelude to a vision of intervention no longer oriented to a compensatory action but rather to participated development blending solidarity and entrepreneurship, aiming to foster processes to strengthen social networks and cultural change following logics of empowerment [1].

This therefore led progressively to an approach to development marked by: a new awareness of the multidimensionality of development (and the consequent loss of centrality of economic growth); from a vision of development as an equality of opportunities to realise one's own skills (and therefore the possibility to choose); from the establishment of the global dimension of development processes, making the north and south of the world of common interest; from the recognition of the plurality of parties to development and the consequent need to ensure complementarity between the actions of different parties with different, public and private natures.

In continuing to investigate the complex idea of development of both society and individual, and on the nature of the poverty that can be eliminated by development, the educational dimension holds a broader social function: on one hand, it becomes strategic and transversal to all types of interventions focusing on human development, and on the other, the complex weave of elements described above have made the processes of negotiation and construction of joint meaning, which must be tackled by operators in the field, more difficult and complex; in order to work effectively the problem of competencies and training becomes fundamental and strategic.

Precisely in the light of the analysis of this scenario and the new role played by the educational dimension, since 2000 the Department of Education Studies has set a priority twofold objective. The first is to develop competences suited to the complexity of these new humanitarian aid and development cooperation contexts that are able to promote relations between cultures and the capacity for social and cultural change through the empowerment of human resources in local communities. In the field of socio-educational intervention, in particular, the lack of skills leads to methods of action in which the undoubted inspiration of solidarity risks being accompanied by choices of an exclusively assistential nature or even to more or less aware introduction of burdensome elements of cultural colonisation which do not foster the development of growth processes for the autonomy and construction of aware identities among the inhabitants of the territories involved.

The second is that of overcoming the dominant logics of emergency among cooperation stakeholders. Projects work mainly in a perspective of immediate intervention, aiming to guarantee the survival of populations and the structural recovery of services: consequently, cooperation workers and project volunteers often have more sense of commitment and human solidarity than the skills required for long-term support interventions that are functional to accompanying the slow process of requalification of the realities affected by conflict from the inside. There is a clear difficulty in connecting humanitarian emergency interventions with organic choices and assistance in development: substantially, the ability to promote development "from the inside" which would constitute the most qualified professional heritage of international cooperation.

The participation of university experts (working in the design, management and assessment of interventions in the socio-educational field) in international cooperation agencies (the United Nations, national and international NGOs, the Italian Development Cooperation office of the Ministry of Foreign Affairs), has covered and continues to cover various sectors, from basic education (for children and adults), social services also in emergency situations, the prevention of children's distress, the fight against the sexual exploitation of minors and child labour, up to processes of teaching innovation and social and school inclusion, again in the field of medium and long-term interventions, able to contribute to the local implementation of experiences that accompany the perspectives of education with those of the promotion of peace and socio-economic development and always pursuing the purpose of human development and support for vulnerable groups and those at risk of social exclusion.

THE PROJECT “INCLUSIVE EDUCATION FOR CHILDREN WITH DISABILITIES IN KOSOVO”: THE REFERENCE FRAMEWORK

In the latest project, funded by Save The Children Italia Onlus and the Italian Development Cooperation, from 30/11/2012-30/04/2013, generally aimed to contribute to the inclusion of more vulnerable groups in the economic and social life of Kosovo, starting from school. With 50% of the population aged under 25, the implementation of quality inclusive education starting from pre-school age for all citizens, whatever their ethnic, social belonging, their disability/ies, represents a priority for the Government for the development and democratisation of the country. A specific objective is to guarantee access to quality preschool and primary education for children with disabilities in 8 municipalities of the 7 regions of Kosovo. The operational plan of the project was based on the cooperation between Save the Children, the MEST “Minister of Education, Science and Technology” of the Republic of Kosovo, the Faculty of Education of the University of Prishtina and the Department of Education Studies of the University of Bologna with the aim of:

- implementing the “Strategic plan for organizing inclusive education for children with special educational need in pre-university education in Kosovo”, drafted by the MEST;

- providing technical support to the MEST and the University of Prishtina to develop a teacher training plan for teachers and support teachers, based on inclusive education (establishment of a Master Course of Inclusive Education; renewal of the Preschool Programme and Primary Education Programme with a view to social inclusion);
- understanding the degree programme for support teachers (specialisation programme for teaching support activities envisaged under MIUR decree of 30 September 2011);
- activating and supporting a process of renewal in teacher training, recalling the social function of school and professionalism which may be a factor for innovation in the quality of course contents in new training courses and social policies.

Specifically the teaching staff of the Department of Education Studies of the University of Bologna (composed by Roberta Caldin, Roberto Dainese, Elena Malaguti, Elena Pacetti, Federica Zanetti) coordinated the work of the group consisting of professors of the Faculty of Education of the University of Prishtina, the representatives of the MEST and the staff from Save the Children, agreeing on some aspects that characterise the approach to inclusive education.

The project is set within a context marked by social and educational change in which the Ministry of Education, Science and Technology and the Faculty of Education, University of Prishtina play an active and strategic role for the development of Kosovar society, as demonstrated in a number of reference documents:

- *Strategic plan for organizing inclusive education for children with special educational needs in pre-university education in Kosovo 2010-2015*, Ministry of Education, Science and Technology, 2010;
- *Administrative instruction. Professional assessment of children with special instructive-educational needs*, Cabinet of the Minister, Ministry of Education, Science and Technology, 2012;
- *Personnel qualifications working with students of special education needs*, Cabinet of the Minister, Ministry of Education, Science and Technology, 2012;
- *Criteria for election of assistants and instructors for inclusive education and their obligations*, Ministry of Education, Science and Technology, 2012;
- *Current Status and the Future*, Faculty of Education, University of Prishtina, 2012.

Since the 1950s the education system in Kosovo has run special schools, differentiated according to different types of disability; only since 2000 have the first steps been taken towards the integration of children with special needs in the mainstream school system. However, it was not until 2007 that educational policies began to move towards inclusive education. As underlined in the document "Strategic plan for organizing inclusive education for children with special needs in pre-university education in Kosovo 2010-2015": "*This strategy reflects the close cooperation and consensus of many partners who contribute to the development of this process in central level, local level, civil society, professional organizations etc. Strategic document has summarized all the concerns and challenges that accompany this process by defining its purpose and vision and strategic objectives such as: early identification and intervention and increase the inclusion of children with special educational needs; provide and strengthen support mechanisms for inclusive schools; professional development of educational personnel; improvement of physical infrastructure for inclusive schools and increase awareness on inclusive education. A the same time it provides ideas and concrete activities for the realization of these objectives. Establishing an inclusive educational community is the duty of each member of society, therefore it remains the responsibility of each of us to give the maximum contribution to the implementation of planned activities being convinced that it is the society the one who benefits the most*" [2].

The process initiated by Save the Children, with the involvement of the MEST and the Faculty of Education, University of Prishtina is innovative and complex, and goes beyond mere school; it is a cultural transformation which changes the relationship between school, family and society, among the teachers in the schools; it changes the university context and the approach to knowledge by both students and teachers.

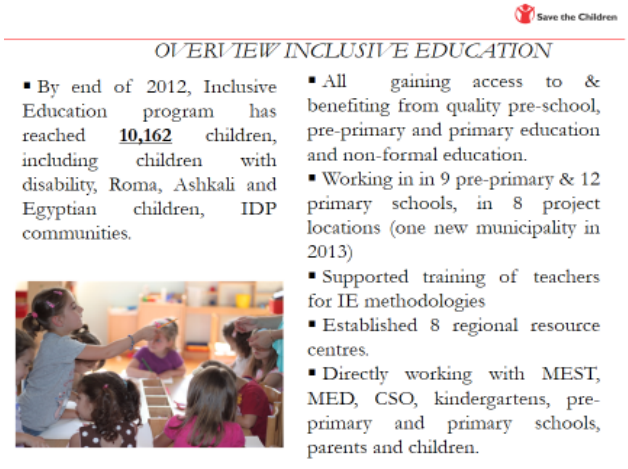

Fig. 1 - Final Workshop: Perspective of Inclusive Education in Kosovo, Prishtina, 18 April '13. *From the presentation "SAVE THE CHILDREN IN KOSOVA/O Implementing Inclusive Education Model in Kosova/o" by Ahmet Kryeziu, Country Director, Save the Children in Kosova/o.*

Talking of inclusive education in the training of teachers and specialist support figures means first of all rediscovering and promoting the social function of school. Priority tasks of schools of all levels are both the learning and socialisation of students. School sets out to remove or overcome the obstacles which prevent or hinder the full individual and social realisation of the individual and the community they operate in.

Inclusive education requires the profound modification of traditional teaching methods. It demands teaching that is able to blend the right to equality with the right to diversity. In other words, it requires teaching which, on one hand, is able to pursue strategies of individualisation, adopting tools that as far as possible put students in a condition to achieve the same objectives, and which on the other hand, allows individual students and groups of students to develop personalised competences according to their own specific motivations and resources.

The framework of rights establishes the passage from a model of primary exclusion, insertion and integration, to the current model of inclusive pedagogy and education, focusing on the prospects of inclusion and specifically of educational processes. In 2011, aiming to develop policies and projects targeting people with disabilities, the World Health Organisation and the World Bank produced the *The World Report on Disability*[3], which includes a specific section on education and childhood. Recognising the greater risk of exclusion and emargination from society lying in the condition of disability compared to the population without disability, it aims to provide useful indications for steering innovative policies. The document clearly highlights how the presence of conditions of disability “today” still suffers from forms of discrimination and the undermining of human rights, even more so for women and children with disabilities. From this point of view, the Convention on the Rights of Persons with Disabilities promoted by the United Nations in May 2008 offers strong support. The report marks and epoch-making change in the protection and support policies targeting people living in conditions of disability. Among the innovative elements it brings is the passage from a vision of incapacity as an individual problem to the possibilities that the context can offer in order to eliminate all obstacles, barriers and prejudices. Disability is therefore a relationship between a person's characteristics and the way in which society considers and faces them.

It therefore introduces a solution for tackling the issue of diversity based not so much on health care but rather on social inclusion policies. The reflections emerging from recent international legislation (UNESCO [4], WHO [5], UN [6]) on inclusive education revolutionise the way of conceiving the approach to disability and vulnerability and through the assumption of responsibility force us to revise the referred cultural models and implicit theories which guide day to day educational practices.

In international legislative documents, the concept of inclusion is closely related to the concept of right, non-exclusion, equal opportunities, which requires schools to take on board all children, with all their differences. Inclusive education is linked to the right to life [7], understood as the right to "quality of life”, which depends on social participation and the sense of common belonging. Inclusion in social life passes through inclusion in school; as a new educational model, the inclusive perspective recalls our responsibilities as educators, trainers of future teachers, and demands a change of paradigm towards the cultural reference models respecting the greater interests of children and their rights and duties [8].

FROM THE DISCIPLINARY APPROACH TO THE CULTURE OF INCLUSION

In the Republic of Kosovo the school system and the university training system have begun a process of innovation which moves from the right to access to school for children with disabilities to their full inclusion in school and social contexts (community-based approach, informal education…). This process also demands renewal in the field of teacher training, which lacks specific competence in this area; in the quality of the contents of the new learning paths and in social policies.

As Lulavere Behluli, from the Ministry of Education, Science and Technology, stated in the report “Inclusive education in Kosovo: vision, plans and challenges for the future”, during the final workshop “Perspective of Inclusive Education in Kosovo” - Prishtina, 18 April 13 – the inclusive approach does not remain limited to the disciplinary contents of special pedagogy, but opens up to new needs and new challenges:

- it must be part of all the faculties providing training for teachers and other educational figures;
- it must be a characterising element of the training of teachers of all levels;
- it must be included in senior school curricula focusing on inclusive education;
- it must be further studied through field research.

The work carried out by the teachers of the Department of Education Studies aimed to respond to these learning and cultural needs by tackling two particularly important aspects.

The innovation of Preschool Programmes and Primary Education Programmes in an inclusive perspective is possible only if the social professionalism of the teacher is recognised. The traditional professional dimensions of the teacher, focusing on the possession of specific disciplinary and teaching skills depending on the specific role covered, must be accompanied by dimensions of social competences which aim to support the general role of the school. Social professionalism of teachers mainly concerns the following competences [9]:

- competences concerning the reading and critical analysis of the complex social, cultural and economic context in which the school lies;
- competences concerning the measurement and interpretation of the specific social conditions of every pupil and the class groups with which they work directly;
- competences in the field of collaboration with all staff working in the school;
- interpersonal competences for communication with the pupils' families;
- competences to collaborate with the services and operators who support students with certified deficits or in any case with disabilities deriving from individual psycho-physical conditions or situations of social disadvantage;
- competences in planning and local cooperation;
- competences in the documentation of individual and group learning paths for pupils, as well as their families and the local community.

The second aspect concerns an analysis and comparison of what it means to adapt course contents to an inclusive approach in university programmes.

Building the foundations for design in inclusive schooling means starting from the consideration of the educational group as a resource, a potential for learning and socialisation, a possibility for the school to represent the place where inclusion practices are implemented in order to foster participation in the social, cultural, economic and political life of the community.

For the teacher, this implies transforming one's own vision of the class from linear to systemic-circular, from considering separate individuals to enhancing their network of relationships. The “bureaucratic” class becomes the class-group through the intersection of three different levels: the personal level, through which the teacher deals with the emotional plane, experiences and lives of every student; the interpersonal level, in which the teacher focuses on the way of communicating, the methods through which the students build their own relations; and the systemic level, through which the group is considered as a subject of construction and transformation both in terms of learning and socialisation [10].

There are three fundamental strengths in the reference framework of inclusive schools, in which inclusive education becomes a driver of the process of promoting social inclusion:

1. children learn more and better in an environment where they feel appreciated and in which their abilities are enhanced.
2. An effective teaching style must link teaching experiences with the personal experiences of the pupils, for the learning to acquire meaning. In this perspective, in heterogeneous groups, collaborative learning, the main characteristics of which include positive interdependence, individual and group responsibility, constructive and direct interaction of co-construction processes and sharing of knowledge and group assessment, becomes an added value.
3. Upturning the paradigm, focusing attention not longer only on the missing elements and deficits but also on a global vision and an approach to multi-factoral and multi-perspective health. This approach does not in any way exclude the biological dimension (the knowledge of limits and deficits) and specific enabling, rehabilitating and education interventions, but recognises the individual as historical and historicised within a true reality (and therefore inclusive as it also includes disabled persons, those with special education needs, vulnerable people or those who live in conditions of marginality, poverty and exclusion); it also contemplates the philosophical, cultural, historical, mental, social and educational dimension, and the relationships which are built with the territory as a whole.

These elements, shared and discussed during the work carried out during the various missions, were included in training the teachers involved by Save the Children, and are included in the documents of the Ministry, which outline the future direction of educational policies and which were accepted as new challenges for the processes of change in progress in the University, particularly the Faculty of Education.

The innovative path taken represents a long-term challenge, a new allegiance with the territory and society as a place of differences, not only linked to disability, but also to cultures, genders, identities, a transformation that implies a passage from the “special” disciplinary approach to the culture of inclusion, from the theory to the practice of inclusive education, from the inclusion of “one” to the inclusion of all, from sensitivity to professionalism based on training and competences.

These aspects of the educational dimension of international cooperation underline new sensitivities and visions of international aid, including human development and the promotion and protection of human rights, with specific attention on the child, recalling the need to use specific methods and competences in social and educational work.

These cannot be removed from three fundamental dimensions:

1. empowerment: the process through which a person generally excluded from power and decision-making becomes able to exercise his own powers, and make his own choices. In education, the concept of empowerment refers to educational interventions which aim to place their interlocutors (and no longer mere recipients of the intervention) in a condition to be able to become or re-become stakeholders responsible for

their own life and choices, in the present and the future. Empowerment is therefore the opposite of any educational intervention which creates dependence and subjection in the persons or groups it targets.

2. Sustainability of the projects we implement and the processes we activate, we must consider the capacity of the project to be sustainable for the community, which has to organise resources in order to be able to take care of common goods and protect its own rights. It is the opposite of assistentialism.
3. Inclusion: there can be neither development nor well-being without allowing the populations involved to take a leading role and be beneficiaries of the interventions carried out in their territories and their relative changes.

The promotion and enhancement of organic collaboration of university staff with the academic and non-academic world of development cooperation can strengthen innovation and experimentation, like a generative action which proceeds through processes of action-knowledge-action for subsequent experimentation and the formulation of new hypotheses and new projects. Among these, for example, the promotion of exchanges coordinated by university staff; the coordination and participation in international interdisciplinary research and collaboration in order to promote, through training and support to research and experimentation, pedagogical and social innovation, the development of skills in the persons and institutions with responsibility for education, care and aid in situations of suffering, distress, exploitation, disadvantage and difficulty; the promotion and experimentation of educational and learning methods and activities to foster equal opportunities and the enhancement of individual and group differences; the promotion of ideas and practices of "community education", which underline the need to build an education system into which all educational resources flow with a view to collaboration and avoiding phenomena of the total delegation of education to individuals, which identifies the educational dimension as a fundamental factor of living together, participation and the democratic development of the community.

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[1] Cf. M. Black, The No-Nonsense Guide to International Development, New Internationalis, Oxford, 2002.

[2] Republic of Kosova, Government of Kosova, Ministry of Education, Science and Technology, *Strategic plan for organizing inclusive education for children with special needs in pre-university education in Kosovo 2010-2015*, Prishtina, March 2010, p. 4; Cf. Republic of Kosova, Government of Kosova, Ministry of Education, Science and Technology, Curriculum framework for Pre-University Education in the Republic of Kosovo, Prishtina, August 2011.

[3] World Health Organisation, The World Bank, The World Report on Disability, 2011, English version: http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf.

[4] A cornerstone of the UNESCO proposal is the principle of inclusive education adopted for the first time at the Salamanca World Conference on Special Needs Education in 1994, and subsequently reconfirmed at the World Education Forum in Dakar in 2000.

[5] The new criterion of the ICF classification - International Classification of Functioning, Disability and Health, 2001- introduces a cultural change into the medical field. Disability is not related merely to illness but also to the different contexts which may have a facilitating or hindering function. The intervention focuses not so much on people as on the environment.

[6] UN Convention on the Rights of Persons with Disabilities, 13 December 2006. Among the innovative elements introduced by the Convention, the Preamble highlights how disability is an evolving concept. The cultural transformation introduced by the Convention marks the passage from a vision of incapacity as an individual problem to the effects the context can determine in order to eliminate all obstacles, barriers and prejudices. Disability is therefore a relationship between a person's characteristics and the way in which society considers them. It therefore introduces a solution for tackling the issue of diversity based not so much on health care but rather on social inclusion policies.

[7] Article 6 of the UN Convention on the Rights of the Child and article 3 of the Universal Declaration of Human Rights.

[8] Concerning the activities undertaken with the working group, the theoretical and conceptual references can be found in the interim project report (referring to the mission carried out from 3-8 March 2013), drafted by Federica Zanetti and Elena Malaguti.

[9] The analysis refers to the unpublished document "The social competence of teachers", drafted by Luigi Guerra, as part of the project entitled "Support to the promotion and development of inclusive schools in El Salvador", promoted by the Faculty of Education, co-funded by the Ministry of Foreign Affairs – DGCS; in collaboration with MINED, Ministerio de Educación salvadoreño and the NGO EducAid, from 2009 to 2011.

[10] Cf. S. Cacciamani, L. Giannandrea, La classe come comunità di apprendimento, Carocci, Rome, 2004; S. C. Negri, Il lavoro di gruppo nella didattica, Carocci, Rome, 2005; R. Cerri (ed.), L'evento didattico. Dinamiche e processi, Carocci, Rome, 2007.

IMPLEMENTING AND EVALUATING TEACHERS TRAINING AND EDUCATION INTERVENTIONS IN THE GLOBAL SOUTH

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ABSTRACT[1]
The aim of the present paper is to illustrate a model for implementing cooperation and research actions, focusing on developing education interventions in contexts that exhibit multiple risk factors. It involves an articulated model, one that has been tested through years of study and interventions in the field, and which comprises: 1) an adequate identification of education needs in the cooperation context; 2) structuring and elaboration of interventions, instruments and methods that are appropriate for local specificities; 3) implementation of training-research actions with teachers and educators in the cooperation country; 4) pilot implementation of interventions in schools, with the support of NGOs and Italian university students (appropriately trained via workshops and stages in Italy); 5) implementation of systematic experimentation and results evaluation. Such a model has the advantage of encouraging the active involvement of all subjects, the progressive acquisition of a method on the part of local professionals and the construction of an international research group. Critical features for the most part concern willingness/possibility of involvement on the part of various subjects and the difficulty of sustaining education interventions that are additional relative to scholastic programmes and which require local resources that are not always available.

INTRODUCTION

Planning and implementing interventions in support of the rights to education for children who live in risk contexts is a complex challenge, which can be tackled effectively only by means of a significant commitment of research on the part of the University, with the active involvement of international cooperation organisms and the synergic commitment of a variety of actors. This makes it possible to create networks that facilitate relationships and the willingness to get involved on the part of the scholastic institutions that constitute the addressees of the training actions.

In this triangulation the role of universities consists mainly in elaborating innovative interventions, based on international literature, and in the implementation of controlled experimental verifications. In this way it is possible to construct a patrimony of reliable knowledge that can then be shared with the various partners involved in the cooperation, constituting transnational research groups. In this interaction the role of university students (or persons who have just acquired their degrees) can also be significant as a vector of innovation in countries in the Global South. Involvement in such projects is also extremely beneficial for university students who can thereby acquire research skills, flexible didactic strategies that are attentive to contexts, cooperation values and intercultural dialogue abilities.

A COOPERATION MODEL

The present paper illustrates a research and cooperation model, elaborated by a workgroup at the Department of Philosophy and Sciences of Education in the University of Turin, to implement cognitive and motivational reinforcement interventions in contexts involving deprivation or socio-environmental risks. Such interventions involve the activation of workshops to encourage literacy skills and the scholastic success of pupils experiencing learning difficulties in countries in South and Central America and Africa. These interventions aim not so much to recover scholastic knowledge, but to activate cognitive processes in children who are often significantly behind in their development and to stimulate learning motivation, something that is lacking in socio-cultural deprivation contexts. In those contexts, exhibiting serious risk factors (natural catastrophes, wars…) there is provision for a specific supplementary intervention on creativity, to reinforce children's resilience (i.e. the ability to successfully deal with and overcome traumas).

The intervention model, progressively developed through analysis and various experiences, involves collaboration between universities and NGOs, based in the territories under consideration, and those scholastic-education institutions involved in improving the quality of didactics and pupil success.

The cooperation and research plan is structured in various phases, considered essential in integrating the education

[1]C. Coggi complied par. 1, 2, 2.1., 2.2., 2.3 ; P. Ricchiardi complied par. 2.4., 2.5., 2.6., 2.7, 3.

proposals in the local culture, in order to increase their persistence and hence their "sustainability", and encourage the acquisition of skills and maturity in global citizenship behaviour in the various protagonists involved.

1. Identification of context requirements

The model, inspired by an action-research approach, involves an initial needs analysis phase performed in the context in which the intervention is required. The difficulties are first conceptualized, with exploration of the international literature, in order to identify their etiological factors and to focus possible interventions. The analysis of problems is also implemented using direct methods, including interviews with privileged witnesses and the adoption of in-field observation techniques (diagnostic tests, questionnaires and discussions with local teachers and managers…). University students are often involved in carrying out such observations in loco, in systematically gathering documentation and in transmitting it to the research group.

We set out below some significant elements taken from input diagnoses, executed in two contexts in which we carried out cooperation projects: Minas Gerais (Brazil) and Santa Marta (El Salvador).
In the first case (example 1) the observations were carried out by university students and by local teachers with the collaboration of an NGO.

Example 1 - Minas Gerais - Brazil – Identification of learning difficulties in children

The following is a summary table of the main problems observed in linguistic and mathematic contexts at Teofilo Otoni in infant and primary schools, obtained via the distribution of questionnaires to teachers.

Tab. 1 – Difficulties identified by teachers

Language difficulties	School level	Mathematics difficulties	School level
Colour recognition. Lateralization problems. Spatial perception problems.	4-5 years	Association of numbers and quantities.	Infant sch. (4-5 year olds) Primary sch. (all classes)
Oral comprehension of instructions. Distinction between lower and upper cases.	Primary sch. (2nd class)	Problems in graphically distinguishing one number from another.	Infant sch. (4-5 year olds) Primary sch. (all classes)
Letter recognition.	Primary sch. (2nd, 3rd classes)	Recognition of numbers up to 10.	Primary sch. (2nd, 3rd classes)
Syllable recognition. Autonomous writing of one's name.	Primary sch. (2nd, 3rd, 4th classes)	Recognition of numbers beyond 15.	Primary sch. (3rd, 4th, 5th classes)
Separation between various words. Autonomous writing of simple words.	All classes	Execution of simple additions and subtractions up to 15.	Primary sch. (3rd, 4th, 5th classes)

The survey carried out with teachers highlights the serious deficiencies of pupils in terms of readiness prerequisites and basic skills relative to reading and writing. To extend the analysis individual tests were also administered, relative to infant schools, together with structured language, mathematics and cognitive processes tests in the primary schools. The results were discussed with teachers to motivate them and involve them in recovery activities. Below we provide a graphic that sets out, in the form of a cognitive abilities profile, the results of a sample of children aged 5 at Teofilo Otoni. This profile was compared with that of Italian children in order to more clearly highlight the specific difficulties experienced by the Brazilian group. The same indicates systematic delayed development in the Teofilo Otoni children in disadvantaged communities in almost all cognitive abilities when compared with the standards for their Italian peers experiencing similar poverty and migration contexts (fig. 1).

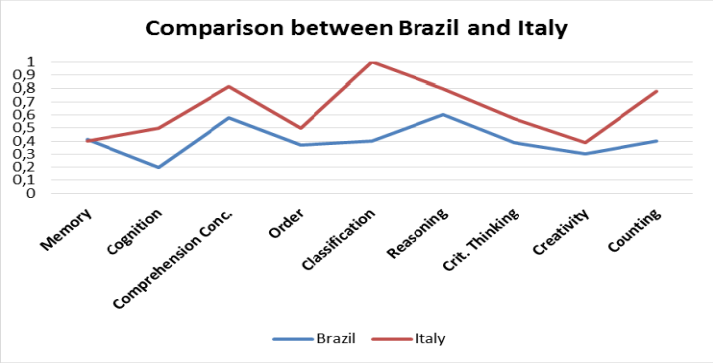

Fig. 1 – Comparison between Brazil and Italy

In the following example (e.g. 2) the observations, carried out at Santa Marta in El Salvador, were the work of NGO professionals (psychologists). The data has been further explored thanks to the systematic observations of an Italian university student.

Example 2 - Santa Marta – Observation carried out with the collaboration of an NGO (Psychologists)

We set out in descriptive form some results of an analysis similar to the previous one, carried out relative to children in primary school at Santa Marta in El Salvador. In this context, scholastic delay can be attributed mainly to the effects on the second generation of the civil war (1981-1992), which generated significant traumas in adults (teachers and parents) and indirectly in the children. Given the difficulties experienced by teachers in getting involved, the first analysis, which we report, was carried out directly on pupils in a primary school, via the administration of entrance tests regarding reading-writing skills, mathematics and cognitive processes. The sample comprises two 4th year classes, relative to which a realignment intervention was requested.

Among the main results, it can be seen that 20.97% of the children in the two classes were illiterate; 33.87% can read a few words, but do not know how to write. In mathematics, on average, the students answer less than a quarter of the test questions, which involve the solution of two simple problems and the performance of calculations, with four operations, for the most part with one or two figures. Success in logic questions is on average greater when the questions are cultural free: in this case, on average, pupils correctly answer 59% of the items. This indicates that difficulties are largely due to socio-cultural deprivation. In this regard it is significant that it is not possible to forecast the cognitive level of the pupils relative to their success in language ($r=0.19$), while there is a significant correlation between the results of questions regarding cognitive processes and results in mathematics ($r=0.57$ with $p<0.01$). The results in reading and writing therefore seem to underestimate the cognitive potentiality of the children, who exhibit serious difficulties in their cognitive processes in only 3% of cases, but considerable delays in their reading and writing processes.

2. Planning interventions relative to specific contexts

Based on the needs emerged in the initial analysis, education interventions were elaborated to reinforce deficient abilities and the motivational resources of pupils with more difficulty. The first interventions in this line were elaborated by us and introduced in Brazil, with the involvement of UNEB (University of Bahia). The first pilot experiments for the method were realised by a Brazilian psychologist-pedagogue, in a school constructed and supported by Italo-Brazilian cooperation. The project was named Phoenix, referring to the mythological bird that recreates itself from its own ashes, symbolizing the hope that all children can enjoy success in their lives. The logo for the project (fig. 2), which formed the basis of a collective identity, was designed and elaborated by a Brazilian UNEB Design student, born in a shantytown, and selected from among various competitors by the international research group. The symbol embodies the essence of the project and the type of cooperation involved, integrating the colours of the Italian flag with those of the Brazilian flag.

Fig. 2 – Phoenix Logo

The success of the method in Salvador de Bahia led to the extension and adaptation of the same to other Brazilian contexts (Minas Gerais and Pernambuco) and to disadvantaged Italian environments. Experimentation in Italy allowed the method to grow and develop further develop, given the opportunity for continually monitoring the experiment and the possibility of differentiating between infant, primary and first year secondary schools. Parallel to this developments in the project were carried forward in French, the appropriate language for contexts like Rwanda, Madagascar and Haiti, together with an experiment in Spanish, which was launched in El Salvador.

The programme, precisely because it was the fruit of the efforts of workers from various countries, stands as a transcultural didactic model, which is effective relative to common risk factors in very different contexts, with appropriate adaptations. Training in the various countries focuses on the main objectives of the project i.e. the stimulation of specific cognitive and motivational processes, and general theoretical references. The materials relative to which the action is applicable, and the privileged ludic forms are, on the other hand, the subject of re-elaboration in the various cultures, carried out by Italian researchers in partnership with local experts, teachers and educators. In each country, referents are identified who provide the required indications for rethinking the activities and the modalities for realising the project, in forms that are appropriate for the context. Relative to infant schools, where the approach is entirely ludic, the symbolic game is the one that requires the most transformations, since play objects, narrative traditions and the social roles that have to be learned as well as the known contexts are different in different countries. In addition, space and the importance attributed to symbolic play seem to be remarkably deficient in some cultures, with long-term effects on creativity and the capacity for abstraction in children. It is therefore necessary to regulate their introduction, in line with the features of each context.

In the same way, given the frequent experiential poverty of children in those contexts in which the project is implemented, interventions are usually planned such that they gradually integrate pupil knowledge and skills, in order to progressively satisfy the requirements of a globalized world and to stimulate those cognitive processes that appear to be most compromised. This approach also comprises the decision to use didactic software, especially in training aimed at the primary school. Interaction with computers, while introducing some difficulties in experimentation (e.g. problematic use of networks, hardware that is often obsolete…), is an important condition in reducing the *digital divide* and in opening up new possibilities for access to the international culture and communication.

In general, therefore, in re-adapting education interventions it is vital to take into account, on the one hand, features in the local didactic tradition (importance attached to writing rather than speaking, memorization rather than critical and creative activities), and on the other, the need for a more complete development and appropriate reading and writing levels. It is therefore not simply a question of translating the activities but of elaborating new materials relative to cultural contents, programmes and educational habits specific to the context, while at the same time encouraging the complete development of children.

3. Involvement and training of university students

Involving Italian university students in the cooperation interventions described above comprises, in addition to an adequate knowledge of the host country language (particularly important when it is necessary to take part in teaching interventions), participation in training. This consists in an articulated course, since it involves above all a workshop (20-30 hours), with a theoretical section, relative to risk factors and the scholastic problems of disadvantaged children in countries in the southern hemisphere. The academic activities therefore involve an analysis of the survey instruments to be used in carrying out the diagnoses and a presentation of the most effect interventions in order to encourage the cognitive and motivational reinforcement of the addressees. These are followed by simulation activities in the lecture hall to encourage the acquisition of didactic-operational skills.

The training ends with an apprenticeship phase in Italy, in which students are asked to implement the project in infant and primary schools, for at least 45 hours, to acquire familiarity with the method. University students are then involved in adapting the materials relative to the foreign country where the experimentation will be carried out.
Finally, the students are provided with the materials that have been elaborated together with innovative aids which can then be presented to the local teachers.

4. Teachers training in cooperating countries

To stabilize innovation abroad systematic training is also realised relative to teachers in the cooperating countries.

The training interventions focus on the theoretic outlines, didactic strategies and organisation and verification modalities as set out in the Phoenix Project. This is a training-research approach in which addressees progressively master those principles at the heart of the method and the criteria adopted to structure the intervention. The teachers are therefore involved in adapting the programme and in the production of new aids, in line with the said action-research approach. Teachers are subsequently called upon to re-elaborate the theoretical stimuli they have received; to observe an expert in the field who activates the innovative practices; to then introduce them in pilot form in their appropriate context; to collaborate in a subsequent collective revision and to evaluate the courses realised relative to their systematic introduction. One of the greatest priorities at the core of the training model for teaching personnel concerns the actual effects of the innovations and the updating of education practice. Involvement in the research has proved to be an effective response to this need. Indeed by activating research courses which are integrated with training, teachers are stimulated to appropriate what they have learned and to become more reflective and metacognitive, and hence to change their practices through intelligent innovation.

5. Implementation of interventions and experiments

Among the teachers trained in the cooperating countries, some referents are identified that are interested in implementing the innovative intervention. The same are involved in pilot experiments and in the documentation and verification of results, with monitoring by the Torino University research group.

The aim of the experiments is therefore to encourage progressive acquisition of the method by local psychological-pedagogical operators, with periodic meetings, if possible, and with the support of a local coordinator.

6. Involvement of local universities

Collaboration with university professors in the universities of the countries involved in the cooperation is useful in supporting the training seminars, to improve the actions involved and to **create a network able to provide continuity for the interventions**. Local universities can also involve their students (future teachers or educators) in the training, to enable them to use the method and to encourage a capillary introduction of new didactic strategies.

7. Evaluation

Evaluation at the start or during the project can pursue decision-making aims, focusing on the emergence of empirical criteria, which justify the choice of launching or sustaining the programme in a given context. In this regard the entity of the emerging requirements, the authenticity of the motivations for innovating the contexts in question, the stability of the education figures involved, the possibility of monitoring *in itinere*, the quality of NGO involvement and the possibility of registering the results obtained can all prove to be highly significant. Evaluation also seeks to encourage improvement, since it is focused on perfecting the actions and transferring them to other contexts.

A complex process is therefore initiated in this regard, one that includes the university but also operators in the countries involved. The following phases can be distinguished.

1) *A priori evaluation*: there is a priori verification of the level of effective knowledge of requirements on the part of the addressees and the coherence of any solutions designed with the latter.
2) *Initial evaluation:* a formal evaluation of the project is implemented, centring on the organisation, programming and materials. The adequacy of the interventions is evaluated (realistic, verifiable objectives…) together with timescale (correspondence between the scholastic calendar and the availability of volunteers…) and context resources (teacher skills, willingness to be involved, presence of adequate informatics instrumentation, Internet…).
3) *Evaluation in itinere:* this is aimed at monitoring the actions. It involves interactions of the research group with NGOs and local operators in gathering documentation *in itinere* on organisational aspects, actions effectively undertaken, difficulties encountered and solutions adopted… The feedback permits fine-tuning *in itinere* of the interventions: transmission of new materials, teacher-training actions. As regards these aspects university student availability proved to be extremely useful.
4) *Evaluation of results.* This focuses on the overall estimate of the efficacy of the project relative to the objectives which one seeks to achieve and the changes caused by the implemented actions.

Evaluation of the efficacy of Phoenix interventions realised in cooperating countries is carried out using a multiplicity of instruments and involves various actors in the project(the pupils, addressees of the method, local teachers who have received training and have taken part in the experimentation, university students, who have realised the didactic activities abroad, entities or actors in the territory in question, universities and NGOs).

A) Evaluation of pupil results

Experimental verification of the results of the Phoenix programme is carried out using an experiment plan with two

equivalent groups, one experimental and another as control, in order to compare the children's progress with traditional didactics and that of pupils who have been exposed to innovative didactics. The plan makes it possible, as is well known, to keep the maturation effect under control. The results of applying the method with children in the cooperating countries are measured by administering structured tests (translated and revised for the local context). We will report, by way of example, the presentation of some results obtained in Minas Gerais and in the state of Bahia, using standardized instruments, aimed at the pupils. The results are illustrated to teachers on a local level, and, when possible, discussed publically - including with citizens - and disseminated to an international scientific audience.

Example 1 – Results of 5 year old children (Minas Gerais)

At the end of the Phoenix experimentation realised at Teofilo Otoni with 5-year-old children in the infant school, the following results were obtained using a readiness test, administered before and after the intervention.
The actions focusing on cognitive and motivational reinforcement realised with the experimental group, by means of a sequence of targeted ludic proposals, made it possible to progressively harmonise the cognitive profile of the sample subjects, a profile which was initially significantly deficient (as indicated in fig. 3). The initial lowest levels concern the creation of relationships, verbal memory, knowledge and creativity. At the end of the course, progress is noted in almost all areas, with significant gains in sequencing and in critical development.

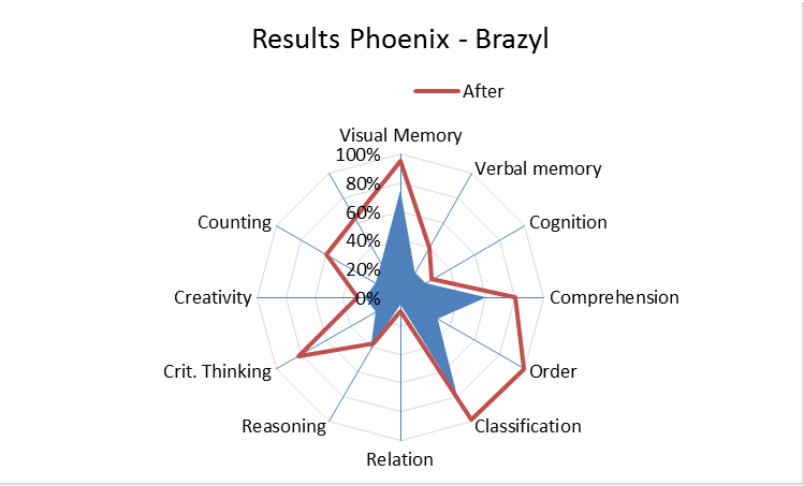

Fig. 3 – Comparison of test results before and after the Phoenix project (5 year olds) – Minas Gerais

Example 1 – Primary school children results in three years of project work (Bahia)

The following is an example of the results for the primary school. They constitute the results of three years of work in Salvador de Bahia and make it possible to appreciate the constant improvements achieved in the skills of experimental group subjects, through the administration of structured tests. In Brazil too, as in other contexts, mathematics is the disciplinary sector exhibiting the greatest gains, followed by cognitive development and language progress, in this case Portuguese (fig. 4). Linguistic skills therefore appear to be the most difficult to improve.

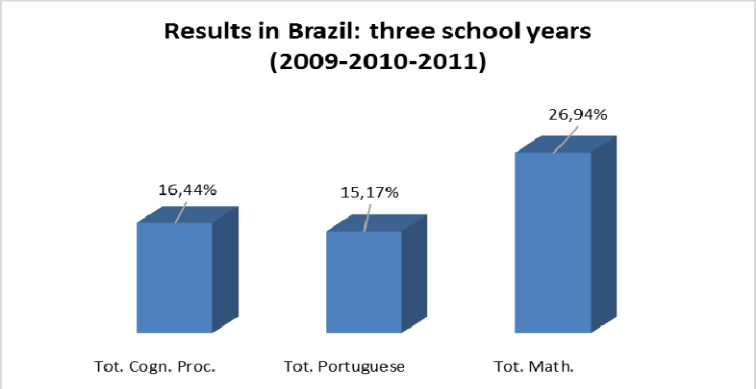

Fig. 4 – Results in Brazil

The results achieved by pupils are evaluated indirectly by noting the perceptions of teachers relative to the efficacy of the project.

Example – Teacher perceptions

We set out the *improvements* that teachers have noted in their pupils following participation in the Phoenix project.

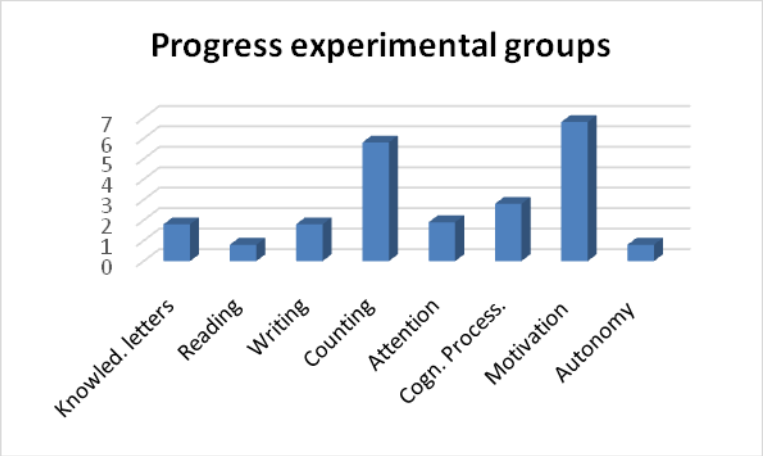

Fig. 5 – Improvements perceived by teachers

B) Method evaluation

The didactic quality of the proposed programmes is also evaluated indirectly through the perceptions of teachers regarding the adequacy of materials and the proposed intervention.

Example – Evaluation of the method by teachers

We set out below, in a schematic manner, the main advantages of the Phoenix methodology as emerging from the questionnaires handed out to teachers involved in training and experimentation at Teofilo Otoni:

- Attractive easy-to-use games
- Teaching that is flexible and adapted to a wide variety of needs
- Possibility of using computers to acquire basic familiarity with informatics
- Stimulation of curiosity and interest in knowledge
- Development of learning ability.

C) Evaluation of effects on teachers

Training interventions focusing on teachers are accompanied by monitoring aimed at evaluating the professional growth of the same. We set out, by way of example, the training results relative to 40 education professionals in Minas Gerais.

Example – Training results

a) Increase in knowledge, change of attitudes and acquisition of specific skills

Using semi-structured questionnaires (administered in input and in output of the training course), the following changes were noted. According to primary school teachers, the training has made it possible to **structure and share** in a group context **innovative didactic practices** (84.21%) and to plan interventions in various schools. The activities contributed to *reducing the* ***digital divide***, familiarising teachers with the use of technologies. Teachers also confirm that they have acquired **more in-depth knowledge of the difficulties** experienced by their pupils. Relative to an initially more superficial description of the said difficulties, at the end of the course one notes a greater analytic and diagnostic ability. At the end of the training we also noted that *teachers had learned to carefully document cases exhibiting articulated anamnesis and in-depth input diagnosis, with attention devoted to specific and deficient cognitive processes.*

As regards *infant school* teachers at the end of the course, the same confirm that they have learned to finalise ludic activities relative to the cognitive difficulties of children experiencing most difficulty. More specifically, teachers confirm that they have learned to work in a manner that counters the difficulties of children as regards concentration and attention levels, as well as those of reasoning, which are particularly common among their pupils.

b) Appreciation of the training proposal

Relative to levels of enjoyment regarding the training proposal, evaluated on a 4 level scale, one notes appreciation indices that are very close to maximum values (between 3.5 and 3.8). The highest level was achieved in meetings that involved workshop experimentations and the general presentation of the project, followed by illustration of software for primary school teachers and concrete games for those teaching in infant schools.

D) Evaluation of effects on university students

The involvement of university students in the cooperation projects was aimed - in addition to contributing to support for the rights of children and the development of research - at increasing their skills as future education professionals. Cooperation experience can also encourage greater awareness of global citizenship values and international solidarity.

Student empowerment therefore involves cognitive, affective and behavioural aspects. The *cognitive aspects* include creativity in the didactic sector, critical ability in selecting adequate materials, specificity and ability to identify with others in order to establish a deeper level of dialogue with another culture. The *affective aspects*, on the other hand, included the development of a realistic level of esteem for oneself, as a subject able to realise the values in which one believes; a good level of empathy, required in order to be able to perceive the feelings and difficulties experienced by others; a good level of control over emotions, both positive and negative. Some of the above results can be observed using self-evaluation instruments.

E) Evaluation of effects on the territory

The effects on the territory are evaluated through data relative to the diffusion of the experimentation. Specifically the following indicators are assessed: the number of teachers and children involved, the nature of the involvement of adults (production of materials, documentation, innovation…), the number of entities implicated and the activation modalities (inspector reports, manager videos, interviews with political figures and budgeting of local resources to support the project).

We also carried out an evaluation of the effects on current didactics: in some contexts, teachers state that they have moved from transmissible didactics to heuristic-inductive didactics, with a ludic learning approach that makes learning more motivating and meaningful.

CONCLUSIONS: ADVANTAGES AND CRITICAL FEATURES

The cooperation model adopted displays numerous advantages, as can be seen from the examples referred. At the same time, it requires a number of conditions if it is to achieve optimal implementation. Indeed, it assumes a stable presence in the cooperation territory of those NGOs that collaborate and the presence in the territory of a motivated and competent referent who maintains contact between the research group and the experimentation group. The model assumes also a willingness to get actively involved on the part of a variety of actors, local tenacity, including when project launch financing ends, and a willingness on the part of all actors to continue to commit personal time and energy to actions for the collective good. The latter aspect is complicated in those contexts where teachers often have “two job” commitments or are still taking part in university training.

As regards Italian university students, cooperation interventions of an educational-didactic character require good skills in terms of language ability and a willingness to commit oneself, respecting local needs and requirements. Such criteria are not always easy to satisfy.

THE PROJECT"FENIX" IN TEOFILO OTONI -BRAZIL-MINAS GERAIS. TRAINING TEACHERS ON COGNITIVE ENHANCEMENT FOR CHILDREN LIVING IN DILAPIDATED CONTAINERS

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ABSTRACT

I want to dedicate my speech to those, who are put their soul in this project to TeofiloOtoni, of which were not even talked about today. Those children that I have just met 20 years ago in TeofiloOtoni: children, who I met under the bridge, near the bus station, along the roads, recovered in police stations or hospitals: hungry children, wounded, alone, humiliated, abandoned...
Children who have learned about the subject to be poor, but certainly directly these children are rich of enthusiasm, joy and love of life, what they shout to the world. And just today we should think about these children. Now I take the chance to start the project Fenix from Cristina and Paola in another city, and that was not Salvador, so thanks to the decentralized cooperation project approved and funded by the Piedmont region, in September 2010, along with Alessia Rosa and Edicleide psychologist in Salvador de Bahia, we started our adventure in TeofiloOtoni.
My role was, along with the Edicleide, to start with an initial training teachers on the implementation of the project Fenix.

THE PEOPLE I'VE MET DURING THE DEVELOPMENT IN TEOFILO OTONI

The training started in November 2010 and there were more people involved from Italy than from Brazil:
Prof. Cristina Coggi and Prof. Paola Ricchiardi, University of Turin, who conceived the project, have studied and prepared aptitude tests for settings and finally, they placed instructional materials for nursery school and selected computer software for the realization of the project Fenix in primary school.
The teacher and educator **Bonasso Tiziana**, **Edicleide do Nascimento**, has dealt with training teachers to TeofiloOtoni and adaptation of games and software.
Dr. Alessia Rosa, who was responsible for the documentation of the course by creating a video.
Sonia Rodrigues Lemes, project manager Fenix in TeofiloOtoni, who was responsible for coordinating the activities in the schools who involved in the project.
In September 2010 for the training in TeofiloOtoni there were involved:

- 25 primary school teachers and 18 teachers of nursery schools;
- 6 psycho education experts of schools in the municipal network;
- 8 teachers and 6 students at the University Federal of TeofiloOtoni.

THE COURSE

- The course lasted a week and it was done in the municipality of Teofilo, at the Federal University of TeofiloOtoni. Coordinated by Prof. Tula Rocha and speaker of the University for the project FENIX.
- The whole course was held in the morning and in the afternoon for a total time of 45 hours and the involved teachers in the study related to the theoretical framework of the project Fenix.

THE DIDACTIC SUMMARY OF THE ACTIVITIES INCLUDED:

- Theoretical training of teaching models useful to counteract the difficulties of learning contexts at risk;
- Teachers have analyzed the characteristics of the entrance tests and final proposals to detect the levels of pupils;
- They learned to administer the tests, even with simulation activities and group work and to deepen the diagnosis in order to better personalize interventions.
- Then they examined the programs of the Fenix, educational software and games of concrete “case Fenix”.
- They finally made brief experiments with children with educational materials proposed.

The experiment was carried out in four schools, two municipal schools and two state schools and all four have involved children in nursery school and primary school.

State schools were involved:
SCHOOL FREI ANTELMO KOPMAN
SCHOOL IRMA ARCANGELA

State schools were involved:
ISTITUTE DORALICE ARRUDA
ISTITUTE TEODOLINDO PEREIRA

All four schools are in a very poor neighborhood of the city and the children who attend are not followed by families, are often left to themselves: the school was for them the unique learning environment

THE SEMINAR

After 9 months of testing, as required by the Memorandum of Understanding between the partner of the project, was organized a seminar in the city of TeofiloOtoni, open for all teachers of the schools who were involved in the project and teachers of other educational institutions interested in deepening methodology Fenix. During the seminar were presented data of the results of the experiments and space was given for the teachers who have experienced the project and who told the audience their experience.

EDUCATING TOGETHER THREE - A NEW OPPORTUNITY

In November of 2011, thanks of a new loan from the PIEDMONT REGION, there started a new one-week training in TeofiloOtoni for teachers of nursery school.
The teacher Bonasso Tiziana organizes a new course that involves new teachers from municipal and state schools, who had already experienced the methodology Fenix in the role of "tutor" to new teachers. At this course are also participating officials super stewardship of the City of TeofiloOtoni and joins on as a new partner “the university 'private Unipac” with 4 teachers and 8 students.

This new insertion allows school teachers to have a support in the classroom during the trial, that the students of Pedagogy in their syllabus will carry out the hours of their internship in support of the project Fenix in state schools.
In March of 2012 there started a new training for primary school teachers with the Brazilian pedagogy of Salvador de Bahia Edicleide.

Thanks of this intervention evaluating it gives the possibility of adding new schools for the experiment and review planning the FENIX project and activities in the laboratory to achieve with the software. The installation program installs new games in the Portuguese language in the computer labs and form teachers to use them.
Definitively in this period identify the referents of the new and old schools who are participating in the project, constitute a working group coordinated by Fenix and at the municipal level is responsible for brazil Sonia Rodrigues Lemes.

COGNITIVE ENHANCEMENT FOR CHILDREN IN DEVELOPING COUNTRIES. A TEACHER TRAINING EXPERIENCE IN A KIGALI PRIMARY SCHOOL.

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ABSTRACT

This contribution describes an intervention of teacher training about using didactic software and classroom strategies to enhance core capacities of children in primary schools. The intervention is part of the wider project named Phoenix (www.edurete.org/fenix) and took place in the days between 4 and 15 September 2012 at the school Saint Ignace de Kibagabaga (Kigali – Rwanda). The experience was divided into the following phases: 1) constitution of the training group, detection of expectations and prior knowledge of the participants; 2) informatics ability realignment; 3) exposition of basic concepts and feedback "participants to trainer" and "trainer to participants"; 4) recognition and collection of the problematic situations encountered by participants in their current experience; 5) isolation of paradigmatic problems and exposure of related theories and possible strategies of action; 6) planning and testing of cognitive enhancement strategies in the classroom, with feedback of the trainer; 7) final test in which the participants have to design a plan of intervention to improve several cognitive ability of their pupils. Final planning describes strategies that teachers have learned in the course and are going to use in the next months. The training was conducted by the author of this article. Experience has highlighted the typical problems encountered in the school situation under review. It was conducted with the strategy of *responsive training*, that is training which aims to respond specifically to the needs arising from the participants. This strategy aims to make participants aware of their needs and to aid them to construct field activities appropriate to their context and pupils. Protocols of the intervention are available at www.edurete.org.

INTRODUCTION

The term "cognition" can be defined as the ensemble of the processes that an organism uses to organize information. Cognitive enhancement may be defined as the amplification or extension of core capacities of the mind through improvement or augmentation of internal or external information processing systems [1]. The focus is not on specific knowledge or skills, but on the core capacities of the subject, that include processes devoted to the acquisition (*perception*), the selection (*attention*), the representation (*understanding*), and the retention (*memory*) of information, and the use of this to guide behavior (*reasoning* and *coordination of motor outputs*). Interventions to improve cognitive function may be directed at any one of these core faculties. The related expression "cognitive empowerment" indicates interventions that aim to help the subject in the acquisition of a personal sense of "power" in order to feel responsible for his/her learning, for example to know how to self-motivate after a failure, to develop self-monitoring and self-regulation strategies for comprehension, to develop appropriate beliefs and self-representations useful to recover quickly from personal failure (*resilience*). In this sense, cognition, metacognition and motivation of the subject constitute a "synergic alliance" for his/her scholastic achievement.

The progress in information technology has produced the most dramatic advances in our ability to process information. External hardware and software can support in many ways the human cognitive abilities. Computer help us not only by offloading mental tasks but also by proposing training exercises (and immediate feedback) that increase the ability to approach complex situations, to gain comprehension in order to suit specific needs and to derive appropriate solutions to various problems. The aim of computer-based training in cognitive enhancement is to promote a better and more rapid comprehension and problem solving, even with simple and complex problems. Increasing rapidity in comprehension of the problem and application of solving strategies can dramatically improve performance within a particular domain of knowledge.

The present article describes an experience of teacher training about using software and classroom strategies to enhance core capacities of children in primary schools. The intervention took place in the days between 4 and 15 September 2012 at the school Saint Ignace de Kibagabaga (Kigali – Rwanda). The intervention is part of the wider project named Phoenix (www.edurete.org/fenix) [2]. The aim of the Phoenix project is to promote the cognitive and motivational enhancement of subject at risk in order to foster scholastic achievement. The project is based on different strategies, with an important role of the use of educational software. It involves the structuring and testing of innovative educational setting, which mainly use the technology (software, online learning environments, video games) in order to: increase resilience, realign the cognitive disadvantages, develop the motivation to learn, consolidate concepts and

strategies relevant to the basics in mother tongue and in mathematics.

CONTEXT OF INTERVENTION AND PARTICIPANTS

Kibagabaga is the name of a hill and district in the east of the city of Kigali, Rwanda, in central Africa. On this hill, the Jesuits began in 2003 to develop a school project of a certain size. The school owes its name to Saint Ignatius of Loyola (École Primaire Saint Ignace, EPSI, see http://kibagabaga.com), founder of the Society of Jesuits, present in Rwanda since the early fifties. The overall plan includes the creation of an institution comprising grades of school primary, secondary and higher education. The first year of the primary school was 2008, and has seen 7 teachers working on 5 classes: two classes for the first year, two classes for second year and one class for the third year, for a total of 130 students. The progress of the project has led to a noticeable increase. In 2009 started 5 new classes, including also the fourth year, with a total of 15 teachers and 282 students. In 2010, with the opening of the fifth year, the school has come to count 13 classes, 19 teachers and 426 students. In 2011 was opened the sixth year, the last of primary education, for a total of 15 classes and 25 teachers. The intent was to follow the first group of students in their school career, gradually opening new years of course, and expanding consequently the number of classes. Kibagabaga is a populated area, recently urbanized, with its administration, places of worship and an hospital, all grown from just ten years. The Jesuit school project is one of the achievements of urban development that characterizes Kibagabaga today.

The EPSI is a private school, nationally recognized, and follows the curricular plans proposed by the government. It is managed by the Order Jesuit, and funded partly by a socio- cultural foundation, partly through the contribution of the families of the students. The costs borne by households are divided into installments on a quarterly basis and, in relation to the costs of others private schools subsidized, are of low/moderate entity. The parents are strong believers in education as element that can provide a better future for the new generations, and are willing to great sacrifices and hardships to ensure their children's attendance at a good school. The public schools has up to 60 students per class, while private schools involve costs too high for the vast majority of Rwandans families. The EPSI is a good compromise between these conflicting situations, and some children can afford to attend it only thanks to social assistance funding they receive. Other children are forced to live away from their parents to get the right of entry to the residence, in cases where the family lives in areas where there are only lower-level schools. The pedagogical foundations adopted refer to the Ignatian model, with particular attention to the training of communitarian sentiments, the development of individual attitudes, and respect for Christian values. In this vision, school is "a living cell of society", and Saint Ignatius school is a "living cell" of the whole school project of Jesuits in Rwanda. The educational aim is to encourage reflection on the knowledge and direct experimentation, in an environment in constant relationship with the external reality. The EPSI is especially open to collaborations with the local community, and in particular with the other schools.

The school activities includes activities carried out in the afternoon, defined *club*, managed by teachers, sometimes with the assistance of external experts. These activities aim to develop personal skills of each student, in terms of theater, dance, sports, environmental protection, journalism, religious reflection. In addition to these commitments, teachers are required to take the refresher courses for students in difficulty, or lags behind the average level of the class. These courses are recommended to families and require an extra fee. The opportunity to get some additional income is important for teachers: on average, their wages do not allow meeting the needs monthly, and it is common for teachers to need to carry out a second job.

Two key points concerning languages of teaching and computer equipment of the school. The EPSI has chosen for teaching an international language, French, with the aim of making it a tool for reflection and structuring of thought. The willingness to train multilingual citizens was realized by choosing to use favored the French in school, alternating with English as language of instruction in some courses, primarily in the scientific-mathematical areas, from the third class. The EPSI considers very important the use of new technologies. A new computer lab with 20 computers of the latest generation was set up in 2011, but it has had only a little impact on teaching because many teachers do not have sufficient computer knowledge to use computers in currently teaching. In addition, the high costs of Internet connection do not make it sustainable annual subscriptions. For these reasons, teachers need to add to their many tasks the training about language and computer, and this creates a serious extra work in a condition where life is not always easy. Comes to their aid the steely determination that characterizes the people of Rwanda, and the willingness to do whatever is in their power to promote the scholastic success of the children, who represent the future of the nation.

Participants at the course of computer-assisted cognitive enhancement was 15 teachers of Saint Ignace School (9 males e 6 females) and 3 educators of Fidesco (www.fidescousa.org), who work in assistance and prevention of school failure of the street children. To get better knowledge of the context, the trainer also held a workshop in the morning in which the pupils can try the games for cognitive enhancement.

TRAINING ACTIVITIES

The teacher training activities have started on September 4, 2012 and have ended on September, 14, 2013. Training

took place every afternoon from Monday to Friday from 2:30 p.m. to 5:30 p.m. The goals was to make teachers independents in the application of Phoenix protocols and to collect specific needs and problems from teachers, in order to give them appropriate techniques and instruments for work in classroom.

The first activity was the self-presentation of the participants where they introduced themselves and talked about their past experiences with cognitive enhancement software. This activity was followed by the statement of expectations that they placed in these training. In this presentation has emerged that many participants had insufficient computer skills to use any software for student's cognitive enhancement. The lack of informatics knowledge has necessitated the perform of a realignment activity, which consisted in the creation of couples in which one of the members had a good knowledge of the computers fundamentals (called "the expert") and the other was instead a beginner (called precisely "the beginner"). The couples were asked to choose a name (e.g. Tigers, Lions, etc.) to strengthen the identity of the group and then took part in a role-playing game, in which the expert of the couple had to drive the beginner to write a letter to a friend with a word processor. In this task, the expert could only talk about giving instructions to the beginner and did not have to touch the computer in any way. The beginner had to carry out the instructions of the expert. The expert was and would have been, at all stages of the course, the responsible of the beginner's learning. This activity has been supplemented by the use of software to enhance the ability to use the mouse and typing letters on the keyboard. It was explained that this same strategy could be used with the pupils in the activities performed in computer lab. Teachers had a lot of fun performing this activity and have especially appreciated the chance to carry this peer education strategy in their practice with students. The realignment activity lasted two days and led to ensure that everyone was able to: a) turn on the computer, b) locate the necessary software, c) start and use them, d) save files and retrieve saved files.

The next activity was a brainstorming about the conception that the participant had of terms "cognition", "metacognition", "motivation", "cognitive enhancement", "resilience". Subsequently, the trainer provided the fundamentals of cognitive enhancement theory, starting from the conceptions and misconceptions emerged in the previous brainstorming. The lessons have insisted on the concepts mentioned above and on the thinking of scholars J. P. Guilford, R. Feuerstein, L. W. Anderson & D. R. Krathwohl, J. Anderson, J. Hattie.

Theory lessons were followed by ongoing test to control understanding (see Figure 1). In this test, participants had to contextualize the above concepts in specific game situations experienced in their previous computer training (item 1, 2, 3). At the end of the test (item 4) was requested to formulate an *incident*, that is a case of a particularly problematic student present in their class, that they thought could be inherent to the concepts seen. The next task consisted in the discussion of the answers given by teachers and isolation of their "good answers". This feedback had the function of "knowledge alignment" of all in relation to the key-concepts treated in the intervention. Test questions and "good answers" are summarized in Figure 1.

Fig. 1 – Ongoing test and "good answers"

Item 1. Describe, in your opinion, the cognitive processes involved in this task […], in terms of:

- Acquiring information,
- Selecting information,
- Representing information,
- Retaining information and
- Using information

Good answers, *Acquiring* information:
«You see the new word coming and observe the letters that compose it»
«Seeing the words falling down»
Good answers, *Selecting* information:
«Choice the appropriate key (in the set of all keys) to type the word acquired»
«Reading the words falling down and choice one word to type»
Good answers, *Representing* information:
«You recognize the word that you are typing and you don't need to 'see and type' letter by letter, but type an entire word» (You have a mental representation of the word).
Good answers, *Retaining* information:
«I remember the letters that compose the word and I type them»
Good answers, *Using* information:
«I type the characters that I remember compose the word that I have perceived, recognized, chosen»

Item 2. Describe, in your opinion, the metacognitive processes involved in this task […] (it's easier if you reflect on how you did learn to do the task).
Good answers:
«I try to press Shift keys at the same time and I fail. I must pose a question to myself: 'What I am doing wrong?'. In relation to the answer that I give to question I must to change my behavior, until I reach the success».

Item 3. John is a pupil that have resilience. John has played once to this game […] and is little bit discouraged because

he doesn't know the color proposed. In your opinion, what will do John now?
Good answers:
«John doesn't lack motivation. He tries to click on ever block to find the right answer (the computer says when is right and when is wrong). Then he memorizes color and after a certain numbers of session, he will learn color names».

Item 4. Describe a typical problem that you have encountered in your class and for which you would like to have more knowledge and tools from the lessons of Phoenix training.

From the item 4 of the test, a rich set of specific instances was emerged, that have originated a sequence of training modules (with many software examples, see protocols at www.edurete.org/conv/difficulties080912.zip) that focus on possible solutions to the problems reported by participants:

P1) *Memorization Problems* («When I teach the kids something, another day when I ask those thing they forget it», «Problem of memorization of multiplication table»). To improve memory for concepts was showed to teachers how to: a) aid children to create associations between texts, images, sounds, actions; b) stimulate children to find personal images for the concepts that the teacher explain (also as strategy to improve creativity); c) choice an image from the images proposed from children and use systematically this image in association to the relevant concept. In particular, was explained to teachers how to use in proficient manner two types of memory cognitive functions [3]: *Recognizing* (find out an object among a set of objects) and *Recalling* (bring out from memory an information). The trainer showed to teachers how to construct little songs and doggerels in order to memorize sequences of mathematical operation and how to use them with the pupils. Last tip was the recommendation to use frequently sessions of formative assessment (with nominal or anonymous tests) to verify systematically remembering and understanding of the pupils. At the end of the module, a task was given to teachers. The request was to design an activity to improve memorization of concepts by the pupils, in relation to the contents they are currently teaching, to apply it into the classroom and to write down a short report (maximum 8 lines of text) describing the activity and the obtained effects.

P2) *Comprehension problems* («Students who appear to be attentive in class but can neither answer any questions about the lesson nor solve any exercise»). Comprehension difficulties are directly related to weaknesses in lexical, syntactic, conceptual, inferential and organizational language processes. Students with poor comprehension are poor at making inferences and integrating text information. Consequently, poor comprehenders do not strive for coherence and they tend to use less story content and use less sophisticated story structures. Poor comprehenders tend to read quiet superficially. They are less likely to engage in constructive processes when reading. It would appear that they are not deficient in general knowledge but fail to use gap filling inferences and are not sure when and how to apply their prior knowledge [4][5]. Hence, an important prerequisite for understanding is the ability to assign meaning to important words in the text. If the pupil has a poor vocabulary, it is very difficult for him/her to assign the right meaning to entire text. Interventions aimed at improving the vocabulary of the students are very important, and equally important is to know the purpose of the text and how it is possible to connect the concepts vehiculated by the text to the prior knowledge of the pupil. A possible strategy is the use of *advanced organizers* [6], provided before explanation to pupils, to facilitate pupil's understanding. In this training module, several examples were presented with refer to the seven cognitive processes related to understanding identified by Anderson & Krathwohl [3]: *Interpreting* (clarifying, paraphrasing, representing, translating information from a formalism to another), *Exemplifying* (illustrating, instantiating, given a concept find an example), *Classifying* (categorizing, subsuming, given an example find the related concept), *Summarizing* (abstracting, generalizing, find a concept that summarize a text), *Inferring* (concluding, extrapolating, interpolating, predicting, find a conclusion or extrapolate a rule from instances), *Comparing* (contrasting, mapping, matching, find similarities and differences between instances), *Explaining* (constructing models, find causal paths in a sequence of events). The task given at the end of the module has required to teachers to design an activity to improve the comprehension of concepts by the pupils, to apply it in classroom and to write down a short report (maximum 8 lines of text) describing the activity and the obtained effects.

P3) *Handwriting problems* («Students who have a problem to write well», «The pupils write slowly, they have no speed in writing», «The children have difficulty in taking notes»). The strategy proposed by trainer refer to the practice of handwriting, that can improve the coordination between visual, verbal and motor capacities. Computer driven practice, by means of animations that illustrate step by step how to draw letter, can improve handwriting.

P4) *Orthograpic problems* («Children that don't write the words properly: 'govenment', or 'govnment', or 'goverment' instead of 'government' »). The strategy proposed by trainer to improve writing abilities requires that the student *reads more*, to acquire models of words and text structures, *writes more* to practice these models, *reads back what he has written and search for errors*, to acquire metacognitive ability of self-correction. The feedback of someone (teacher, mates or computer) is important to help the pupil to find his/her errors and the feedback is more effective if it is immediate. For this reason the *visual* feedback obtainable from computer (e.g. by an orthographic corrector built in a

word processor) is very effective and also very effective is the *verbal* feedback obtainable by screen reader programs (in the training was presented the DSpeech free software). Developing of self-assessment and general evaluation capability is related to two cognitive processes [3]: *Checking* (check the internal coherence of a product or an object, coordinating, detecting, monitoring, testing) and *Critiquing* (give a judgment about a product or an object using a set of external criteria).

P5) *Dyslexia problems* («When I tell to a kid to write for example 25 he writes 52, or when I ask him to compare 10 < 20, he writes 10 > 20», «There are children who can't recopy words from the board as they are, e. g.: 'on' they write 'no', 'in' they write 'ni', 'an' they write 'na'»). Dyslexia is not disability, but only a different mode of functioning of the mind [7]. From Dyslexia is impossible to completely get out, but it is possible to get better with apposite training (that foresee progressive steps). Examples of computer training to deal with Dyslexia include: a) practice to recognize letters on the screen of the computer and on the keyboard; b) practice to associate sound and letter symbol (the computer program says a letter and the pupil have to click it on the screen); c) practice to recognize words (oral and written) and reproduce it on the keyboard (before without maximum time and then with); d) practice to find the missing letter (the program shows a picture and an incomplete name and the pupil have to complete); e) practice to associate symbols and real word objects; f) practice of orthography by means of corrector built in word processor; g) practice of orthography and association between oral and written words by means of screen reader programs. For each of these strategies were presented examples of software and free educational game. The task given at the end of the module has required to teachers to design an activity to improve the writing ability of the pupils, to apply it in classroom and to write down a short report (maximum 8 lines of text) describing the activity and the obtained effects.

P6) *Problems in mental calculation/Automaticity problems* («Some pupils don't know how to calculate mentally»). The strategies proposed by trainer refer to the importance of the practice finalized to improve the automaticity of cognitive operations. Novices take a significant amount of cognitive resources in interpreting and dealing with the problems, using conscious and explicit processing. With practice, accompanied by reflection on "what works" and "what does not work", the cognitive operations become more automatic and implicit. Strategies that not lead to tangible results are gradually forgotten, and the effective ones are progressively automated. This frees cognitive resources for new learning: it is not necessary to think about a thing to do it (e.g. riding a bike or driving a car). It is important to give pupils opportunities to repeat their problem solving in different circumstances, so that they can automate problem solving process. Computer games offer to the pupils the opportunity to "practice without judgment of the adult" and this fosters the process of "learning from own error": the pupil feel himself free to do errors and to take the time for reflect on them, with an aid that is not perceived as a judgment. Various computer games and educational software designed to develop automaticity in calculation was presented in this module (see protocols). Training emphasized the importance of progression. The decomposition of complex problems and instructional sequences in simpler sub-problems makes educational interventions more effective. In order to promote learning success, it is important to ensure that the pupil really masters concepts, principles and key strategies present in the current learning content before moving on to new content. The same principle is valid for ability: it is important to ensure that the student really masters an ability (e.g. doing sum with objects) before moving on to another more complex (e.g. doing sum with symbols).

P7) *Problems in the transfer of learning* («There are pupils who do well in class, are very talented, but do not get satisfactory result for the exams», «Slow learning»). Better performance in solving a problem does not automatically translate into better performance in solving a different problem (lack of learning transfer). Empirical evidence demonstrates the role of analogy [8]: the learning obtained in solving a problem would benefit over those obtained in another, if certain topics of this are similar (e.g. in content, logical structure, strategies for the interpretation and troubleshooting, etc.) to those already learned. To improve learning transfer in solving a new problem, it is possible to propose specific training to the pupils that requests to find what in the new problem is similar to what they already faced in the past and what is different. For what is similar it is possible to use known strategies, for what is different it is possible to search into the set of known strategies those have analogy with the structure of the problem. This means to do specific trainings to learn to *analyze* problems, in order to determine: problem typology and structure (recognizing what was already faced), what the problem requests (understanding what is necessary to do), unknowns (recognize what is missing and/or needed), available data (recognize what you have). Three cognitive processes are related to analysis [3]: *Differentiating* (discriminating, distinguishing, focusing, selecting, find and separate the main components of an object, split a whole into constituent parts), *Organizing* (rearrange main components in another structure, finding coherence, integrating, outlining, parsing, structuring, compose parts in a whole), *Attributing* (find the point of view of authors, deconstructing text). To improve analysis ability several strategies are available: a) propose session of self-evaluation before examinations (develop the ability to face new problems and to discover the logic that stands behind the problem); b) provide feedback on problem solving strategies used by the pupils (explain "what works" and why, and "what doesn't work" and why); c) simulate examinations in session of formative assessment (teach to face "anxiety related to examinations"). In addition to these strategies, various computer games were presented by the trainer to improve analysis processes. The task given at the end of the module has required to teachers to design an activity to improve the analysis ability of the pupils, to apply it in classroom and write down a short report (maximum 8 lines of text) describing the activity and the obtained effects.

P8) *Creativity problems* («Some pupils repeat only what have seen and heard from the teacher. They are not able to give personal contribution», «In the examinations, some pupils repeat only what the teacher said, they are not able to do autonomous study on books»). Three cognitive processes are related to creativity [3]: *Generating* (construct new ideas, hypothesizing), *Planning* (formulate a project to do something, designing), *Producing* (constructing something, implementing the project). Various strategies and computer activities were presented to improve these three processes (see protocols). The task given at the end of the module has required to teachers to design an activity to improve the creativity of the pupils, to apply it in classroom and write down a short report (maximum 8 lines of text) describing the activity and the obtained effects.

P9) *Attention problems and hyperactivity* («Some children are much distracted (only their bodies are present)», «Pupils who lack of observation, concentration, does not stand up», «Students lack of concentration», «The problem of a student who does not want to sit still, he will not write or take it what teachers say. He just wants to disturb, dance, make displacements in class. It loses its class materials (pencil, eraser), it tears the books. He wants to imitate what he saw on television»). The ADHD Syndrome was synthetically presented by trainer, as characterized by developmentally maladaptive and inconsistent levels of inattention, impulsivity, and hyperactivity. The trainer pointed out that ADHD is not a disorder that is possible to face only with cognitive strategies, but cognitive strategies may contribute to reduce effects in less serious cases. Proposed cognitive treatment refers to: a) find an activity (computer game, practical activity, etc.) that entertain and promote implication in the pupil with disorder; b) aid the pupil to remain on the activity until he/she reach the aim of the game/practical activity; c) individuate and correct impulsive behavior providing "good" models of behavior. Various games to increase attention were proposed (Put the ball into the hole, Launch the Penguin from airplane to the boat with parachute, Find the differences, Say if the word has been displayed on the screen, Copy the pattern, Create a symmetry, Play Force 4, checkers and chess against the computer).

P10) *Problems of motivation* («Some children do not have interest in new things», «Children who do not want to write», «Students who want to play and do not to study», «Students who do not want to take notes», «Students who do not revise contents at home», «Students that do not want to follow the lesson, student that want to play in the class», «Some pupils are lazy in multiplication or reading», «Pupils disturb others in the class and do not follow the lessons», «Pupils do not do that their homework»). The trainer pointed out that individuals choose whether to invest their cognitive resources in the study or other activities. The learner does not invest his cognitive resources in the study if he/she is not motivated or if he/she perceives that his efforts do not lead to visible progress. In this case, student can choose to invest their resources in other activities (games, sports, entertainment, social activities, etc.) that he perceive as more useful and source of minor frustration. Several strategies were presented to deal with demotivation: a) using active approaches to didactics (some pupils need to do practical activities in order to reach comprehension of something); b) using game based strategies (computer games, songs, recitation, cooperative learning with pair or workgroup and championship between groups) to improve intrinsic motivation; c) involve the parents in the homework activities, explain the importance of homework and the opportunities that offer the scholastic achievement for the life of their children; d) organize peer tutoring sessions (students of the secondary school that do tutorship for students of the primary school).
At the end of the training, a final test was given to participants. Teachers had to: 1) Describe a strategy to improve memorization ability of the children that they are going to use in the next months; 2) Describe a strategy to improve comprehension ability of the children that they are going to use in the next months; 3) Describe a strategy to improve analysis ability of the children that they are going to use in the next months; 4) Describe a strategy to improve creativity of the children that they are going to use in the next months. The last question of final test request to the participants if they have already used the games and the strategies of Phoenix project, and if they do, to shortly describe what they have done and the results that they have observed.
The final test has shown that teachers have learned many techniques of action and that, already during the training, have begun to use them with students. Answers to proposed questions were articulated and reflect a good level of understanding of basic concepts and principles illustrated in the training intervention. This is a good sign that hints that teachers have acquired the cognitive tools necessary to start working effectively with the class. In order to support the implementation of learned strategies in current activities with the class, course materials (slides with theories and examples of work) have been made available on the site www.edurete.org/conv/difficulties080912.zip. Presentation of the intervention and photographic documentation are available at the address www.edurete.org/conv/kigali2012.zip.

FINAL CONSIDERATIONS

Taking into account the difficulties described in paragraph 2, the participation and commitment of teachers in the course has been remarkable. Feedback from participants to trainer was highly positive, mainly because it was perceived that the course has been specially cut to their needs, without following a lineup of default arguments but with content that could change from time to time in relation to the specific needs that arose from the participants. This form of shared construction of the ladder of training, is typical of the training strategy defined *responsive training*, that is precisely training which aims to respond specifically to the needs arising from the participants. Generally, this task is not easy because the participants themselves are often not fully aware of what are their training needs. They should be helped to

make them emerge and to define them in a conceptually correct way.

As pointed out by Thomas [9], in order to effectively build responsive training systems, first it is essential to build effective feedback mechanisms between an organisation's real operational needs and their training systems design. To be effective, these feedback mechanisms must employ data collection and analysis techniques which: 1) identify weaknesses in normal operations which require the development of training interventions; and 2) identify the weaknesses in training which give rise to resident pathogens within normal operations. The training carried out have aimed to develop metacognitive reflexivity of the participants, in order to make them able to recognize what of their current actions in classroom are most effective and which are not, in relation to their own objectives. To promote cognitive empowerment for the pupils, the first cognitive enhancement should be referred to their teachers.

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NOMENCLATURE

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